

THE ROLE OF ATTACHMENT IN THE INTERGENERATIONAL TRANSMISSION OF  
ABUSE: FROM CHILDHOOD VICTIMIZATION TO ADULT  
RE-VICTIMIZATION AND DISTRESS

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Research indicates that victims of childhood abuse are at increased risk for transmitting violence in adulthood—a phenomenon known as the intergenerational transmission of abuse (ITA). Adult survivors of childhood victimization (i.e., child abuse or witnessed parental violence) are at increased risk for becoming abusive parents, perpetrators of intimate partner violence, and victims of intimate partner violence. The current study examined the latter form of ITA, in which a survivor of childhood victimization is re-victimized in adulthood by intimate partner violence. Attachment theory has been used to explain the ITA by positing that abuse is transmitted across generations via insecure attachment. The purpose of this study was to use structural equation modeling to test the attachment theory of ITA by examining the role of childhood and adult attachment in predicting re-victimization and symptoms of distress in adulthood. In the hypothesized model, childhood victimization by one's parents was hypothesized to predict adult intimate partner violence victimization through insecure attachment relationships in childhood (with one's parents) and adulthood (with one's partner). Furthermore, adult romantic attachment anxiety and attachment avoidance were hypothesized to predict different symptoms of distress. Self-report measures from 59 adult woman seeking services for intimate partner victimization at a domestic violence clinic were analyzed using a partial least squares path analysis. Results supported a reduced model in which insecure attachments in childhood and adulthood significantly predicted the ITA, but only through father-child attachment and not mother-child attachment. In addition, adult romantic attachment anxiety and

attachment avoidance predicted different symptoms of distress. Results supported the attachment theory of the ITA and highlighted the importance of examining outcomes of adult attachment anxiety and avoidance separately. Implications and directions for future research are discussed.

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## CHAPTER 1

### INTRODUCTION

#### Introduction to Family Violence

Many families face the atrocities of family violence, including intimate partner violence (IPV) and child abuse, both of which can impart devastating and sometimes deadly effects. It has been difficult to accurately estimate the prevalence of these traumas due to under-reporting, differences in research designs, and differences in definitions used to define these traumas. The World Health Organization (WHO) studied a sample of over 24,000 females in 10 different countries and found the prevalence rate of intimate partner violence ranged from 15 to 71%, with most sites falling between 29 and 62% (Garcia-Moreno et al., 2006). In the U.S., intimate partners commit approximately one-third of all female homicides (U.S. Federal Bureau of Investigation, 2008). Moreover, about half of men who batter their partner also abuse a child (Straus, 1990). In 2008, an estimated 772,000 children in the United States were victims of child abuse or neglect and 1,740 of these children died as a result of the child abuse (U.S. Department of Health and Human Services, 2010).

#### *Intimate Partner Violence (IPV)*

According to Johnson's (2006) control typology of IPV, four different types of couple violence exist based on the presence of violence and/or control in each partner of the couple. In the first type of IPV, situational couple violence, there may be violence from one or both partners, but neither attempts to exert control over the other. That is, Partner A, is violent but non-controlling, while Partner B remains non-violent or is also violent but non-controlling. In the second type, violent resistance, Partner A is violent but non-controlling, typically in response to Partner B who is the violent and controlling one. That is, Partner A may responding with

violence in an effort to resist his / her partner's abuse and control. The third type, intimate terrorism, occurs when Partner A is violent and controlling over Partner B, who typically is neither violent nor controlling. Intimate terrorism has also been commonly referred to as domestic violence, battering, or spousal abuse, and typically characterizes the type of victimization seen in woman residing in domestic violence shelters. In the fourth type, mutual violent control, two violent and controlling individuals are in a relationship with each other (Johnson, 2006). As Johnson (1995; 2006) highlights, it behooves researchers to distinguish between these different types of IPV, as each type differs with regard to etiology, dynamics, gender symmetry or asymmetry, prevalence, sequelae, and intervention required. Of interest to the present study is intimate terrorism and its relationship to attachment and abuse in future generations.

Intimate terrorism is the attempt to exert power and control over one's partner, using violent and nonviolent control tactics such as emotional abuse, isolation, using children, using male privilege, economic abuse, threats, intimidation, and blaming (Johnson & Leone, 2005; Pence & Paymar, 1993). In this type of abuse, even the nonviolent control tactics take on a violent meaning that they would not otherwise have in the absence of previous violence from one's partner (Johnson & Leone, 2005). That is, nonviolent control tactics still convey threats of violence in the context of a relationship in which violence has occurred. Intimate terrorism is qualitatively different from situational couple violence in that it involves an attempt to exert control over the partner and relationship. In addition, intimate terrorism is not rooted simply in everyday life stress that causes conflicts to escalate to violence, as the case in situational couple violence (Johnson & Leone, 2005). While approximately equal proportions of men and women are perpetrators of situational couple violence, intimate terrorism is primarily perpetrated by men

against women (Johnson, 2001; Johnson & Leone, 2005). Victims of intimate terrorism face dangerous and damaging consequences. Compared to situational couple violence, victims of intimate terrorism are attacked more frequently, experience more severe physical violence that is less likely to stop, incur more physical injuries and psychological harm (e.g., Posttraumatic Stress Disorder symptoms), and are more likely to miss work as a result of violence (Johnson & Leone, 2005; Johnson, 1999).

### *Witnessing IPV in Childhood*

Children who witness parental IPV also suffer. In the United States, it is estimated that anywhere from 3.3 to 10 million children per year witness IPV between their parents (American Psychological Association, 1996, Straus & Gelles, 1990). It is well documented that these children are at greater risk for social, academic, internalizing, and externalizing problems (Buehler et al., 1997; Fergusson, & Horwood, 1998; Grych, Jouriles, Swank, McDonald, & Norwood, 2000; Jouriles, Norwood, McDonald, & Peters, 2001; Kitzmann, Gaylord, Holt, & Kenny, 2003; Litrownik, Newton, Hunter, English, & Everson, 2003; Margolin, 1998; Morrel, Dubowitz, Kerr, & Black, 2003; Reid & Crisafulli, 1990; Skopp, McDonald, Jouriles, & Rosenfield, 2007; Ware, Jouriles, & Spiller, 2001; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003). Furthermore, witnessing parental IPV has even greater detrimental effect on children than witnessing other forms of destructive conflict (Kitzmann, Gaylord, Holt, & Kenny, 2003).

### *Childhood Abuse*

In addition to witnessing parental IPV, children may also be directly victimized by parents. Parental IPV and child abuse perpetration often co-occur (Appel & Holden, 1998; Bedi & Goddard, 2007; Margolin, Gordis, Medina, & Oliver, 2003). Bedi and Goddard (2007) summarized that some research has supported a “single perpetrator” model in which the father is

abusive toward the mother and child (e.g., Appel & Holden, 1998), whereas other research indicated that husband-to-wife violence was associated with increased physical child abuse potential in both fathers and mothers (e.g., Margolin, Gordis, Medina, & Oliver, 2003).

In 2008, approximately 80% of the perpetrators of child abuse and neglect were parents of the victim, highlighting the importance of examining the parent-child relationship (U.S. Department of Health and Human Services, 2010). The term, child abuse, encompasses such a wide range of behaviors (Milner, 1986), or the lack thereof (i.e., neglect) that it is often classified into types: physical abuse, sexual abuse, emotional abuse, and neglect (physical, emotional, medical, or educational neglect) (Child Welfare Information Gateway, 2006). What constitutes the legal definition of child abuse is determined on a state-by-state basis; however, federal legislation provides a minimum set of acts or behaviors that define child abuse and neglect. The Federal Child Abuse Prevention and Treatment Act (CAPTA), as amended by the Keeping Children and Families Safe Act of 2003, defines child abuse and neglect as, at minimum: “Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act which presents an imminent risk of serious harm” (U.S. Department of Health and Human Services, 2003, p. 44). Mothers tend to be at higher risk for perpetration of physical child abuse than fathers because mothers tend to bear a larger share of parenting responsibilities in two-parent families and spend significantly greater time caring for children (Appel & Holden, 1998; U.S. Department of Health & Human Services, 2006). Fathers, on the other hand, are more likely to perpetrate sexual abuse than mothers (U.S. Department of Health and Human Services 2009).

The detrimental effects of child abuse on child development are well documented. Compared to non-abused children, children who are abused tend to exhibit more externalizing

problems such as aggression and disruptive behavior disorders (Aber, Allen, Carlson, & Cicchetti, 1989; Famularo, Kinscherff, & Fenton, 1992; Flisher et al., 1997; Haskett & Kistner, 1991; Kaplan et al., 1998; Weiss, Dodge, Pettit, & Bates, 1992). Child abuse is also associated with internalizing problems, such as depression (Ackerman, Newton, McPherson, Jones, & Dykman, 1998; Famularo et al., 1992, Green, 1998; Kaplan et al., 1998; Okun, Parker, & Levendosky, 1994; Pelcovitz et al., 1994). The negative impact of child abuse often carries over into adulthood as well. Adult survivors of childhood abuse are more likely to suffer from psychological disorders such as post-traumatic stress disorder (Widom, 1999), depression and anxiety (MacMillan et al., 2001; Massie & Szajnberg, 2006; Wise, Zierier, Krieger, & Harlow, 2001), and eating disorders (Kendler et al., 2000).

#### Intergenerational Transmission of Family Violence

One risk factor for family violence is a history of family violence in prior generations of a family's history. When family violence is transmitted across generations, this is called the intergenerational transmission of abuse (ITA). ITA has traditionally been used to label the specific phenomenon of child abuse survivors who go on to abuse their own children; the present study will refer to this specific type of ITA as ITA-Child Abuse (ITA-CA). However, the ITA can be conceptualized more broadly to include additional forms of family violence other than child abuse perpetration. That is, childhood violence could include child abuse victimization or witnessing parental IPV, while adult violence could include abusive parenting, IPV perpetration, or IPV victimization. Some research indicates that the ITA may not be type-specific (Hunter & Kilstrom, 1979; Pianta et al., 1989; Zuravin et al., 1996). That is, the type of abuse that adults experienced as children may not necessarily be the same type of abuse they exhibit toward their own children or adult partners. For example, abuse can be transmitted across generations when

an adult survivor of childhood victimization becomes a perpetrator of intimate partner violence (IPV) against his or her romantic partner; that specific cycle of family violence is referred to as ITA-IPV in the present study. Lastly, an adult survivor of childhood victimization may become re-victimized in adulthood via IPV *victimization* by one's romantic partner, is referred to as ITA-Revic in the present study. The present study is aimed at examining this last type, ITA-Revic, in attempt to understand how victimization is transmitted across generations. It should be noted, however, that abuse is not always transmitted across generations, and many adult survivors of childhood abuse develop non-abusive relationships with their partners and children (e.g., Cappell & Heiner, 1990; Kaufman & Zigler, 1987; Pears & Capaldi, 2001; Simons, Whitbeck, Conger, & Chyi-In, 1991; Zuravin, McMillen, DePanfilis, & Risley-Curtuss, 1996). Nonetheless, a history of childhood victimization is a risk factor for intergenerational transmission of abuse and the present study is interested in exploring the contributing factors to this problematic cycle. Specifically, this study is concerned with exploring the contributing factors to ITA-Revic, in which victimization is transmitted from childhood to adulthood.

There is empirical support for childhood victimization as a risk factor for re-victimization in adulthood. Having a history of childhood abuse or witnessing parental IPV puts one at greater risk for being re-victimized in adulthood via becoming the victim of IPV by one's romantic partner (i.e., ITA-Revic). In a longitudinal study of 543 children over 20 years, being a victim of child abuse doubled an individual's risk of becoming a victim or perpetrator of IPV, while witnessing parental IPV tripled one's risk (Ehrensaft et al., 2003).

#### *Theories of the Intergenerational Transmission of Family Violence*

Various psychological theories have been developed to explain why family violence and abuse are transmitted across generations. Examples of these theories include social learning

theory (e.g., Burgess, 1979; Burgess & Youngblade, 1988; Gelles & Straus, 1979; Straus, 1983; Straus et al., 1980), attachment theory (e.g., Belsky, 1993; Cicchetti, 1989; Egeland 1988; Rutter, 1989), and the dose hypothesis / cumulative risk model (e.g., Rutter, Quinton, & Liddle, 1983). Social learning theory posits that direct modeling of abusive behavior by parents is learned by children and later re-enacted. In comparison, attachment theory is rooted in ethological, biological, and psychoanalytic psychology. Attachment theory posits that childhood victimization leads to insecure parent-child attachment and malevolent internal working models of self, others, and relationships, which are carried into adulthood and impact the adult child's interpersonal behavior (e.g., IPV in romantic relationships, and/or abusive parenting with one's own children). Lastly, the dose hypothesis provides less of a theoretical explanation for why the ITA occurs, but hypothesizes that the higher the frequency and severity of abuse is throughout childhood, the higher one's risk in adulthood of transmitting abuse to one's partner or children. In many respects, the dose hypothesis may be used to support either the social learning theory or attachment theory of the ITA. That is, repeated and severe childhood victimization can reinforce the modeling and learning of abusive practices (i.e., social learning theory), or can contribute to the malevolent internal working models formed in insecure attachment that are associated with later interpersonal abuse (i.e., attachment theory). While research has supported both the social learning theory (e.g., Simons, Whitbeck, Conger, & Chyi-In, 1991) and attachment theory (e.g., Egeland, Jacobvitz, & Sroufe 1988; Zuravin, McMillen, DePanfilis, & Risley-Curtiss, 1996) of the ITA, the aim of the present study is to examine the attachment theory of the ITA in more detail.

## Attachment Theory

### *Overview of Attachment Theory*

Attachment theory is a psychobiological theory of personality development, originally founded by John Bowlby (1969). As its basic tenant, attachment theory posits that early parent-child interactions involving attachment behavior contribute to the child's personality development (Bowlby, 1969). Attachment theory maintains that human infants, like other mammals, are born with an adaptive set of species-specific behaviors that promote proximity to their caregivers (e.g., gaze, vocalizations, facial expression, grasping) (Ainsworth, 1989). This proximity-maintaining behavior, or attachment behavior, is thought to have evolved through a Darwinian process of natural selection whereby proximity to one's caregiver offered an increased chance of protection and survival.

### *Childhood Attachment*

While newborn infants appear to engage in attachment behaviors automatically, they later develop the ability to direct these behaviors at a specific person, typically their primary caregiver (Ainsworth, 1989). The caregiver's response (or lack there of) to the infant's cues contributes to the dyadic relationship and bond between infant and parent. Through this interaction with the parent, the infant eventually forms an inner representation of the parent and begins to expect typical parent-infant interaction patters, forming what Bowlby called "internal working models" of self, others, and self-other relationships (1973). It is the nature of these inner representations about oneself and relationships that attachment theory describes as the foundation for the child's personality development. The degree of the parent's sensitivity and responsiveness to the child's attachment behavior and cues largely determines the basic type of attachment relationship (e.g., secure versus insecure) that is formed between the infant and parent. This attachment status also

corresponds to the type of internal working models a child will form. That is, consistent and high parental sensitivity, responsiveness, and attunement to the infant's cues and needs contribute to secure / healthy attachment relationships and the infant's benevolent internal working models of self, others, or relationships (Ainsworth, Blehar, Waters, & Wall, 1978; Belsky, Rovine, & Taylor, 1984; DeWolff & van Ijzendoorn, 1997; Egeland & Farber, 1984; Grossman, Grossman, Spangler, Suess, & Unzer, 1985). The infants learn, in a sense, that they are deserving of their parents' caregiving, that their parents are predictably safe and nurturing, and that they have a secure base from which to explore the world. On the other hand, parental insensitivity, unresponsiveness, inconsistency, rejection, inaccessibility, and intrusiveness contribute to the infant's insecure attachment (Ainsworth, Blehar, Waters, & Wall, 1978; Belsky, Rovine, & Taylor, 1984; DeWolff & van Ijzendoorn, 1997; Egeland & Farber, 1984; Grossman, Grossman, Spangler, Suess, & Unzer, 1985). That is, the infant internalizes these negative experiences and views of self, others, or relationships, and is likely to find the world to be an unsafe, rejecting, or unpredictable place in which exploring and forming relationships may be physically or emotionally dangerous.

Ainsworth and colleagues (1978) pioneered a method for assessing infant attachment known as the strange situation. In this laboratory procedure, infants were separated and reunited with their parent as well as exposed to the presence of a stranger. This procedure aimed to produce enough stress in the infant to elicit the infant's attachment behavioral system (e.g., proximity seeking behavior). Most of the infants' various responses to separation and reunion with his/her parent, exposure to a stranger, and exploratory behavior could be grouped or classified according to certain patterns in their behavior. Not only could most of the infants be classified securely or insecurely attached to his/her parent, but the infants with insecurity also

displayed two different patterns. A fourth group of infants was labeled 'unclassifiable' until future researchers studied their strange situation videotapes more extensively.

In order to arrive at an infant's attachment status, two dimensions (i.e., anxiety and avoidance) are examined to determine the infant's attachment classification. That is, the degree of anxiety the infant experiences about abandonment, and the infant's avoidance of closeness contribute to the infant's attachment classification. For example, securely attached infants are low in both anxiety and avoidance and exhibited the following behaviors during the strange situation: they used their parent as a secure base for exploring the room, exhibited signs of missing their parent during separation, actively greeted their parent upon reunion, sought contact with their parent when upset, and returned to exploring once their parent comforted them. Based on the patterns they observed, Ainsworth and colleagues divided insecurely attached infants into two subtypes: avoidant and anxious-ambivalent. Avoidant infants (who are high in avoidance and low in anxiety) readily explored the room without seeking a secure base with their parent, displayed little affect, exhibited little distress when separated from their parents, actively avoided their parent upon reunion, and sought distance from their parent in favor of playing with toys. Anxious-ambivalent infants (who are high in anxiety and low in avoidance) became distressed upon entering the room and did not engage in exploration, exhibited distress when separated from their parent, and were not easily soothed by their parent upon reunion (Ainsworth, Blehar, Waters, & Wall, 1978; Solomon & George, 1999).

The infants that were initially labeled as unclassifiable appeared to lack a behavior pattern that could be described as either avoidant or anxious-ambivalent. In 1990, however, Main and Solomon described a third type of insecurely attached infant and most of their initially unclassifiable infants fit this disorganized / disoriented pattern. The disorganized / disoriented

infants (who are high in both anxiety and avoidance) behaved with no coherent attachment strategy, goal, or intention (e.g., appearing confused) (Solomon & George, 1999). It has been suggested that disorganized / disoriented infants may have experienced the most interpersonal problems with their attachment figures, possibly including child trauma (Solomon & George).

While traditional attachment theorists place emphasis on the parent's sensitivity and responsiveness (or lack thereof) in determining the child's attachment formation, other researchers have examined the infant's contribution (e.g., temperament) to the parent-infant attachment relationship. For example, Goldsmith and Alansky's (1987) meta-analysis indicated that infant temperament (i.e., proneness to distress) predicted insecure parent-infant attachment, but the strength of the association was low. Furthermore, the authors acknowledged the bidirectional nature of the infant-parent relationship, such that the infant's temperament may be impacted by the parent's responsiveness. They suggested that while infant temperament may play a role, parental factors such as parental sensitivity might exert a stronger impact on parent-infant attachment. As Morton and Browne (1998) note in their review of the literature, other researchers have argued that the parent carries the most influence in the parent-infant relationship, while the infant's response may serve to maintain the parent's behavior.

Researchers and theorists use both categorical descriptions of parent-child relationships (e.g., parent-infant attachment as secure versus insecure) and dimensional descriptions (e.g., maternal responsiveness ranging from low / poor to high / healthy). Nonetheless, theorists do agree that secure parent-child attachment relationships contribute to healthy child development, whereas insecure parent-child attachment relationships are associated with increased risk for impaired psychosocial functioning. Insecure parent-infant attachment has been shown to negatively impact, for example, the quality of the later parent-child relationship, the ability to

enter successfully into other intimate relationships, sociability with unfamiliar persons, representations of self (e.g., self-concept), others, and relationships, and personality variables such as ego resiliency and behavior problems (Thompson, 1999). It should be noted, however, that the predictive ability of attachment classification on a child's later psychosocial functioning is mediated by certain factors such as time and stability or change in caregiving influences (Thompson, 1999).

*Childhood attachment and psychological functioning.* The impact of early attachment on later child development has been the focus of much research (see Thompson, 1999 for a review). Infants with secure attachment tend to have the fewest psychological problems in later childhood compared those with insecure attachment (Pierrehumbert et al., 2000). For example, children with secure attachment reported fewer symptoms of depression and anxiety than insecure children (Muris, Mayer, & Meesters, 2000). Furthermore, securely attached children tend to exhibit more adaptive characteristics such as higher empathy, self-esteem, and ego resiliency (Arend, Gove, & Sroufe, 1979; Grossmann & Grossmann, 1991; Kestenbaum, Farber, & Sroufe, 1989; Sroufe, 1983; Sroufe, Fox, & Pancake, 1983; Sroufe & Egeland, 1991; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984). Moreover, compared to securely attached children, insecurely attached children tend to be more immature than their peers, demonstrate more externalizing behaviors such as aggression (Lyons-Ruth, Alpern, & Repacholi, 1993; Pierrehumbert et al., 2000), and express less positive and more negative affect (Kestenbaum, Farber, & Sroufe, 1989; Kochanska, 2001; Muris, Mayer, & Meesters, 2000). As Thompson (1999) highlights, however, it is hard to reliably predict personality sequelae of childhood attachment without longitudinal or multivariate studies that examine possible moderators such as conflict in the parent-child relationship.

## *Adult Attachment*

Bowlby (1979) acknowledged that human attachment needs endure from the “cradle to the grave” (p. 129). As researchers began to study attachment in adulthood, two separate fields of research emerged independently within the attachment literature: (1) the adult’s overall attachment “state of mind” regarding childhood attachment experiences with one’s parents, (2) the adult’s attachment style in romantic or close relationships. As Shaver and Fraley (2004) explained, the two fields may be associated but emerged independently with different aims, methodology, and constructs. Furthermore, they used different bodies of literature to demonstrate their construct validity.

*Adult attachment state-of-mind.* The research on adult attachment “state of mind” developed within the context of studying parent-infant attachments. Researchers studying parent-infant attachment via the strange situation began to notice that the infant’s behavior toward the parent was significantly correlated with the parent’s current attachment state of mind, which they derived from interviewing parents about their own attachment experiences in childhood (Hesse, 1999). This was an important first step in shifting from just focusing on behavior (e.g., strange situation infant behavior) in assessing attachment, to also considering the level of representation or unconscious internal working models that guide attachment behavior (Main et al., 1985). Riggs and colleagues (2007) explained that these researchers were primarily interested in “how parents’ internal working models of early attachment experiences in the family of origin might predict their caregiving behaviors and their infants’ attachment behavior” (p. 264).

George and colleagues were the first to measure adult attachment state of mind via the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984, 1985, 1996). The AAI is a semi-structured interview that measures the adult’s current attachment “state of mind” regarding

early childhood attachment experiences and the meaning the adult assigns to these experiences (Crowell, Fraley, & Shaver, 1999). During the interview, the adult is presented with the challenge of recalling and reflecting upon attachment related childhood memories, while simultaneously maintaining a coherent and consistent discussion (Hesse, 1996). The interview is scored based on the manner (e.g., coherency, consistency, and collaboration) of the interviewee's discourse, rather than the content of the childhood memories. Scored interviews are then classified into one of four categories: (1) secure / autonomous, (2) dismissing, (3) preoccupied, (4) unresolved / disorganized. These four classifications correspond to and predict the strange situation infant attachment classifications of secure, avoidant, resistant / ambivalent, and disorganized / disoriented, respectively (Hesse, 1999; van Ijzendoorn, 1995). That is, an adult with a secure state of mind on the AAI is likely to have an infant that demonstrates secure attachment in the strange situation. An adult with a dismissing attachment state of mind is likely to have an infant that demonstrates avoidant attachment, and so-on. A fifth AAI classification, "cannot classify," was later added by Hesse (1996) for interviews that contain a combination of contradictory and incompatible discourse patterns. This AAI classification of adults has not been shown to correlate clearly with any particular strange situation classification of their infants.

*Adult romantic attachment.* In addition to adult attachment state of mind, the second line of research that has emerged independently in the adult attachment literature is on adult romantic attachment. The adult romantic attachment literature is also rooted in Bowlby's original attachment work, and extends that our universal need for proximity to and availability of a loved one for comfort and security does not simply end after childhood; we seek to meet these needs in adulthood, often in the context of a romantic relationship. Just as infants protest separation from their caregivers, adults similarly protest separation from their romantic partner (Feeney, 1999).

What distinguishes adult romantic attachments from parent-child attachments is reciprocal nature of the comforting or caregiving, and the addition of sexual intimacy. While there is not consensus about whether romantic relationships are indeed attachment relationships, there is empirical support that romantic figures can serve attachment functions and take on increased importance and salience in young adulthood (Hazan & Zeifman, 1994; Wiley, 2004). For example, a romantic attachment figure can facilitate a secure base for an individual during times of distress.

Adult romantic attachment has also been measured differently than the adult attachment “state of mind.” While adult attachment “state of mind” is measured by an interview aimed at “surprising the unconscious” (George et al., 1985), adult romantic attachment has largely been measured by self-report of consciously held attitudes about close romantic relationships (Riggs, Paulson, Tunnell, Sahl, Atkison, & Ross, 2007). Hazan and Shaver articulated (and empirically measured through self-report) the parallels between the three infant attachment styles (i.e., secure, avoidant, anxious-ambivalent) and the similar styles of attachment behavior in romantic love, which they gave identical labels.

In addition to Hazan and Shaver’s model, Bartholomew (1990) surfaced with a new four-category model of adult romantic attachment, built upon Bowlby’s concept of internal working models. By dichotomizing the dimensions of dependence and avoidance, Bartholomew developed positive and negative models of self (i.e., dependence dimension), and positive and negative models of others (i.e., avoidance dimension). This system yields four adult attachment classifications through self-report measures: (1) secure, which reflects a positive model of self and others and the associated low dependence and avoidance, (2) preoccupied, consisting of a negative model of self and the related high dependence along with a positive model of others and

the related low avoidance, (3) dismissing, which indicates a positive model of self and related low dependence along with a negative model of others and related high avoidance, and (4) fearful, representing a negative model of self and others and the associated high dependence and avoidance. Bartholomew's attachment classifications align with Hazan and Shaver's classifications, with the exception that Bartholomew distinguished between two types of avoidant attachment. That is, Bartholomew's secure, preoccupied, and fearful classifications aligned with Hazan and Shaver's (1990) classifications of secure, ambivalent, and avoidant, respectively; however, Bartholomew's addition of dismissing attachment reflects a second type of avoidant attachment in which the individual disavows the need for attachment relationships and intimacy due to a positive model of self and emphasis on self-reliance (Feeney, 1999).

Research continued to emerge after Hazan and Shaver's (1987) work, focusing on the two global factors underlying adult romantic attachment: attachment avoidance, and attachment anxiety (Brennan, Clark, & Shaver, 1998; Feeney, Noller, & Callan, 1994; Simpson, Rholes, & Nelligan, 1992; Strahan, 1991). The avoidance dimension refers to one's degree of comfort with closeness with others. Attachment anxiety reflects worries about love, such as fear of abandonment (Feeney, 1999). The Experience in Close Relationship-Revised (Fraley, Waller, & Brennan, 2000) is a self-report measure of adult romantic attachment that measures these two dimensions of attachment anxiety and avoidance. Shaver and Fraley (2004) recommend that adult romantic attachment be conceptualized in dimensions terms rather than categorical types (e.g., Bartholomew, 1990) because there is little evidence for a true typology (Fraley & Waller, 1998). Instead, they argue that the categorical types are "regions in a two-dimensional space," and precision is lost when typological measures are used instead of the continuous scales (Shaver & Fraley, 2004).

*Adult attachment and psychological functioning.* Just as insecure childhood attachment has been linked to certain psychopathology, so too has adult attachment. Dozier and colleagues (1999) summarized the literature regarding adult attachment states of mind (as measured by the AAI) and associated psychopathology, noting a consistent finding that psychiatric disorders are almost always associated non-autonomous (or non-secure) states of mind, and in particular unresolved status. They suggest that the unresolved status may carry more meaning and be more interpretable for psychiatric disorders in which disorganization is not a key feature. For example, disorganized speech during the AAI can be interpreted more confidently as unresolved loss or trauma if one can rule out that is a function of a disorganizing disorder such as schizophrenia. Dozier and colleagues also explain that dismissing states of mind tend to minimize attachment needs and therefore should theoretically be associated with more externalizing disorders that involve diverting attention away from one's feelings (e.g., antisocial personality disorder, conduct disturbance, eating disorders, substance abuse, hostile depression, externalizing anxiety disorders). Alternately, preoccupied states of mind attempt to maximize their attachment needs and therefore should theoretically be associated with more internalizing disorders that involve absorption in one's own feelings (e.g., borderline personality, and internalizing forms of depression and anxiety) (Dozier, Stovall, & Albus, 1999). Dozier and colleagues, however, describe depression and anxiety as heterogeneous disorders, afflicting both dismissing and preoccupied states of mind.

Empirical research findings to date appear support these theorized connections. Bakerman-Kranenburg and van IJzendoorn (2009) recently conducted a meta-analysis of more than 200 studies including more than 10,500 Adult Attachment Interviews and examined psychopathology associated with the four attachment states of mind (excluding the fifth "cannot

classify” status). The authors found that internalizing disorders (e.g., borderline personality disorder) were associated with more preoccupied and unresolved attachments, whereas externalizing disorders (e.g., antisocial personality disorder, conduct disorders) were associated with more dismissing attachments but were also over-represented in preoccupied and unresolved attachments. Depression was associated with preoccupied and dismissing attachments, but not unresolved attachment. Abuse victimization and/or PTSD were associated with unresolved attachment, but remarkably no other insecure status (Bakerman-Kranenburg & van IJzendoorn, 2009).

Researchers have also examined self-reported adult romantic attachment and associated psychopathology, with some findings overlapping with AAI results. (For a full review of psychopathology associated with adult attachment state of mind versus adult romantic attachment, see Riggs et al., 2007). Both AAI and self-report attachment security have been associated with adaptive functioning and the least emotional disturbance (Brennan & Shaver, 1998; Kobak & Sceery, 1988; Lopez et al., 1998; Mikulincer & Nachshon, 1991; Riggs & Jacobvitz, 2002; Riggs et al., 2002; Riggs et al., 2007). Similar to AAI results, self-reports of adult attachment show an association between internalizing disorders (e.g., borderline and dependent personality traits) and preoccupied and fearful attachments—styles both high in attachment anxiety (Allen, Coyne, & Huntoon, 1998; Bartholomew & Horowitz, 1991; Brennan & Shaver, 1998; Collins & Read, 1990; Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998; Narciso, 2007; Onishi, Gjerde, & Block, 2001; Shaver & Brennan, 1992). On the other hand, self-report attachment styles high in avoidance (i.e., dismissing and fearful attachments) have been associated with externalizing symptoms (e.g., substance abuse, somatization, and dissociation) (Anderson & Alexander, 1996; Brennan & Shaver, 1995/1998; Brennan, Shaver, &

Tobey, 1991; Carnelley, Peitromonaco, & Jaffe, 1994; Diehl et al., 1998; Mickelson, Kessler, & Shaver, 1997; Mikulincer, Florian, & Weller, 1993; Onishi et al., 2001; Riggs et al., 2007).

Sandberg (2010) examined adult romantic attachment as a mediator between IPV and PTSD symptoms in college women and found the attachment anxiety partially mediated the link, whereas attachment avoidance did not. Although attachment avoidance may not be as strong of a mediator as attachment anxiety, another possible explanation for these results could be that avoidantly attached individuals may be disconnected from their feelings and experience and thus do not accurately report their symptoms. Furthermore, the non-clinical sample may be comprised of individuals with less severe traumas and/or symptoms in which avoidance may play less of a role than in clinical samples.

A recent study (Fortuna & Roisman, 2008) contrasted psychopathology associated with self-reports of adult romantic attachment versus AAI attachment states of mind and indicated that AAI insecurity was only associated with psychopathology when the individual was under high levels of life stress, whereas self-reported attachment insecurity was associated with psychopathology regardless of high or low life stress. The authors suggest that self-report measures of adult attachment insecurity may serve more as markers of psychiatric distress.

#### *Continuity of Attachment Across the Lifespan*

Bowlby (1979) acknowledged that attachment needs and behaviors exist across the lifespan. While many researchers and theorist agree, what is still of considerable debate is how attachment develops across the lifespan and what role that childhood attachment plays in forming adult attachment. Furthermore, there are two separate adult attachment constructs in the literature (i.e., adult attachment state-of-mind, and adult romantic attachment), each of which

may have different connections to childhood attachment. Of interest to the current study is the relationship between childhood attachment and adult romantic attachment.

Hazan and Shaver (1987, 1994) theorized that internal working models of childhood attachment continue to guide close relationship behavior throughout life, such that the history of interactions with one's caregiver in childhood may produce a trait-like "style" for involvement in romantic relationships. As Fraley and Shaver (2000) note, the most thorough way to assess the influence of infant attachment experiences on adult romantic attachment patterns is longitudinal analysis, but few longitudinal studies have been conducted. One unpublished longitudinal study assessed the link between security at 1 year of age in the strange situation and security in adult romantic relationships and found a correlation of .17 (Steele, Waters, Crowell, & Treboux, 1998). Retrospective self-reports have also been used to examine the association between childhood attachment and adult romantic attachment. Adults with secure adult romantic attachment were more likely to recall their childhood relationships with parents as being affectionate, caring, and accepting (Hazan & Shaver, 1987). Retrospective self-reports of childhood attachment to one's parent(s) also have predicted adult romantic attachment (Styron and Janoff-Bulman, 1997).

It appears that the internal working models that are fostered by childhood attachment may carry into adulthood and impact one's adult attachment with romantic partners. Nonetheless, some researchers caution that the adult romantic attachment bond does not develop directly out of the individual's parent-child attachment behavioral system. Rather, the adult romantic attachment bond may develop through a complex systemic process involving coordination and organization of many behavioral systems, perhaps involving a developmental pathway from early parent-child attachment, through peer affectional bonds, to adult romantic bonds (Marvin & Britner, 1999).

## Attachment and Family Violence

Family violence has devastating effects on children and adults. Not only can family violence lead to serious or fatal physical injury and impaired psychological functioning, it can also disrupt attachment relationships in childhood and adulthood. Insecure romantic attachment has been associated with both IPV perpetration (Bookwala & Zdaniuk, 1998; Dutton et al., 1994; Mauricio & Gormley, 2001; O’Hearn & Davis, 1997; Roberts & Noller, 1998; Schumacher, Slep, & Heyman, 2001) and IPV victimization (Bookwala, 2002; Henderson et al., 2005; Wekerle & Wolfe, 1998). Doumas and colleagues (2008) summarized the literature on IPV and attachment and noted that preoccupied attachment served as a significant predictor of violence perpetration and victimization in both genders (Bookwala & Zdaniuk, 1998; Henderson, Bartholomew, Trinke, & Kwong, 2005). Compared to non-violent males, male perpetrators of IPV demonstrated higher levels of preoccupied, dismissing, and fearful adult attachment styles (e.g., Babcock, Jacobson, Gottman, & Yerington, 2000; Dutton, Saunders, Starzomski, & Bartholomew, 1994). Female victims of IPV have shown an overrepresentation of preoccupied and fearful attachment styles (Henderson, Bartholomew, & Dutton, 1997). Doumas and colleagues (2008) examined the association between IPV and various pairings of attachment styles in couples and found that a “mispairing” of an avoidant male partner with an anxious female partner was associated with violence by men and women.

IPV not only affects adult attachment, but can also negatively affect parent-child attachment. Given the relational nature of IPV, it follows that IPV could also disrupt the quality of the parent-child attachment when there are children in the home. Theoretically, intimate partner violence may ‘indirectly’ affect parent-child attachment by causing parental distress that impairs a parent’s ability to provide consistent, sensitive, and attuned caregiving to his/her

child—elements prudent to forming secure parent-child attachment. Children of battered mothers are more likely to have disorganized attachments (Zeanah, Danis, Hirshber, Benoit, Miller, & Heller, 1999), and experience maternal hostility, intrusiveness, or low involvement (e.g., Lyons-Ruth & Block, 1996, Stover, Van Horn, & Lieberman, 2003). Although little research has focused on the impact of IPV on father-child attachments, male IPV perpetrators have been found to demonstrate irritable and uninvolved parenting that significantly predicted child behavior problems (Holden & Ritchie, 1991). Children witnessing IPV may feel frightened for their parents as well as be afraid of them. Main and Hesse (1990) theorized that parent-infant interactions marked by “frightening or frightened behavior” by the parent could lead to disorganized infant attachment because the infant would experience the parent simultaneously as a source of fear and comfort. Research has supported Main and Hesse’s theory (e.g., Jacobvitz, Hazen, & Riggs, 1997; Lyons-Ruth et al., 1999; Schuengel, van IJzendoorn, & Bakermans-Kranenburg, 1999).

Direct victimization by one’s parent is also associated with insecure parent-child attachment. Child abuse adversely impacts the child’s attachment formation and resulting internal working models. Children of abusive parents typically form anxious (Crittenden & Ainsworth, 1989), disorganized (Solomon & George, 1999), or avoidant (Crittenden & Ainsworth, 1989; Egeland & Sroufe, 1981b; Finzi, Cohen, Sapir, & Weizman, 2000; Gauthier, Stollak, Messe, & Aronoff, 1996; George, 1996) attachments to their parents. A meta-analysis of 80 studies revealed that abused infants were more likely to be insecurely attached than non-abused infants (Baer & Martinez, 2006). In Morton and Browne’s (1998) review of the literature, the results of 13 of 15 studies suggested that infants of abusive or neglectful mothers were significantly more likely to demonstrate insecure attachment (as measured by Ainsworth’s

strange situation, or a modified version) than were infants of non-abusive and/or non-neglectful mothers (i.e., Browne & Saqi, 1998; Carlson, 1989; Crittenden, 1985; Crittenden, 1992; Egeland & Sroufe, 1981a; Egeland & Sroufe, 1981b; Gaensbauer & Harmon, 1981; Lyons-Ruth, 1987; Schneider-Rosen & Cicchetti, 1984; Schneider, 1985; Ward, 1993). In the remaining two studies, Lyons-Ruth and colleagues (Lyons-Ruth, Connell, Grunebaum, Botein, & Zoll, 1984; Lyons-Ruth, Connell, & Zoll, 1989) still reported a higher percentage of insecure attachment in abused and/or neglected infants compared to controls, but the difference was not statistically significant. Across all 15 studies, an average of 76% of abused infants were insecurely attached, compared to 34% of non-abused infants (Morton & Browne, 1998). According to Ainsworth (1978), there is a prevalence rate of approximately 30% for insecurely attached infants in the general population. Thus, it appears that insecurely attached infants were notably over-represented among the abused and/or neglected infants in the studies reviewed by Morton and Browne (1998). A more recent study evidenced a similar finding in that 99.3% of infants from abusive families (i.e., the infants or their siblings were abused) were insecurely attached, compared to 32.7% of infants from non-abusive families that were insecurely attached (Cicchetti, Rogosch, & Toth, 2006).

Not only does child abuse often lead to insecure parent-child attachment, but it also can later adversely impact the adult child's attachment state-of-mind. Adult survivors of childhood abuse are more likely to demonstrate insecure or unresolved adult attachment state-of-mind (Massie & Szajnberg, 2006). In a study of female adult survivors of childhood abuse both with and without abuse-related PTSD symptoms, 78% of women exhibited insecure or unresolved attachment on the AAI (Stovall-McClough & Cloitre, 2006), which is even higher than the already inflated rates of insecure and disorganized attachment in psychiatric populations (compared to non-psychiatric populations) (van IJzendoorn & Bakermans-Kranenburg, 1996).

## The Attachment Theory of ITA

According to attachment theory, when children of abusive parents form insecure childhood attachments, their internal working models of self, others, and self-other relationships (Bowlby, 1973) are marked by shame, mistrust, fear, and other qualities that hinder the child's ability to develop supportive relationships with others (Solomon & George, 1999). That is, the quality of the early parent-child relationship is expected to influence the nature of the child's later relationships (Crittenden & Ainsworth, 1989), such as with one's own offspring or with a romantic partner. In a sense, as Bretherton (1990) described, there can be an intergenerational transmission of attachment relationships. Childhood attachment with one's mother and/or father can predict later adult romantic attachment (Styron & Janoff-Bulman, 1997). The attachment theory of the ITA posits that childhood abuse may lead to insecure attachment in childhood and adulthood, which may make it difficult to develop supportive relationships and may leave one more vulnerable to abusive relationships such as those marked by IPV. Insecure adult attachment has been associated with IPV victimization (Bookwala, 2002; Henderson et al., 2005; Wekerle & Wolfe, 1998); however, due to the difficulty in ascertaining causal relationships, it is unclear if insecure attachment causes increased vulnerability for IPV victimization, is the effect of IPV victimization, or both.

Attachment theorists posit that the discontinuation of ITA may result from the abused child's opportunity to experience a healthy relationship with a parent surrogate (Ainsworth, 1989) such as a non-abusing parent, older sibling, or other adult during childhood (Bowlby, 1980). That is, the healthy relationship facilitates the development of positive internal working models of self, others, or relationships, despite the unhealthy relationship with the abusing parent. Furthermore, the corrective emotional experience of a healthy relationship for the abused

child does not necessarily have to occur in childhood. That is, the child may experience a healthy relationship in adolescence or adulthood with, for example, a best friend, romantic partner, therapist, pastor, or mentor. Attachment theorists describe these later adult relationships as “secondary attachments” (Ainsworth, 1989, p 4). Even if the secondary attachment relationship is briefer in length than the primary attachment relationship, the influence and internal working model of the secondary attachment relationship may persist (Ainsworth). That is, the positive effect of the benevolent secondary attachment relationship can endure if the relationship facilitates the development of positive internal working models of self, others, or relationships. Ainsworth points to support for this corrective emotional process by highlighting the positive influences of the therapeutic relationship between client and therapist (that operates through new internalized models) that persist even after therapy is terminated.

#### Statement of Purpose

Overall, these studies illustrate the importance of healthy relationships in facilitating secure attachment and positive internal working models. While secure attachments appear to help in breaking the cycle of abuse, it should be noted that the above studies lacked experimental designs (due to the impossibility of randomly assigning participants to groups given the nature of the investigative topic); therefore, support for a causal link between attachment theory and the ITA has been difficult to ascertain. Nonetheless, research limitations do not reduce the importance of continued investigation of the attachment theory of the ITA.

The present study aims to test a statistical model (e.g., Partial Least Squares) of the attachment theory of the ITA-Revic to investigate if a predictive relationship among the variables is supported. Furthermore, the present study aims to offer a meaningful contribution to the literature on attachment theory, family violence, and the ITA by simultaneously testing a

complex model of how these constructs interact.

Woman seeking victim services at a trauma clinic that primarily serves victims of intimate partner violence, sexual assault, and child abuse completed questionnaires to assess their history of childhood trauma (i.e., child abuse and parental IPV), adult trauma (i.e., IPV victimization), childhood attachment, adult romantic attachment, and psychological functioning. The present study aimed to understand how childhood attachment and trauma history, along with adult attachment and trauma history interrelate and predict one's psychological functioning. A diagram of the proposed model is presented in Figure 1. Specifically, the following hypotheses are made:

1. Insecure childhood attachment with one's mother will be predicted by high scores on three variables: childhood abuse by one's mother, IPV perpetration by one's mother, and IPV perpetration by one's father.
2. Insecure childhood attachment with one's father will be predicted by high scores on three variables: childhood abuse by one's father, IPV perpetration by one's father, and IPV perpetration by one's mother.
3. Adult romantic attachment anxiety will be predicted by both insecure childhood attachment with one's mother and insecure childhood attachment with one's father.
4. Adult romantic attachment avoidance will be predicted by both insecure childhood attachment with one's mother and insecure childhood attachment with one's father.
5. IPV victimization will be predicted by high romantic attachment anxiety and high romantic attachment avoidance.
6. Distress in psychological functioning will be predicted by insecure adult romantic attachment and IPV victimization:

- a. Anxiety-related symptoms (i.e., anxious arousal, impaired self-reference, tension reduction behavior, anger/irritability, and borderline personality traits) will be predicted by high attachment anxiety and IPV victimization.
- b. Avoidance-related symptoms (i.e., defensive avoidance, dissociation, intrusive experiences, somatoform, and Avoidant personality traits) will be predicted by high attachment avoidance and IPV victimization.
- c. Anxiety / Avoidance overlap symptoms (i.e., depression) will be predicted by high attachment anxiety, high attachment avoidance, and IPV victimization.

## CHAPTER 2

### METHOD

#### Participants

A sample of 100 participants was recruited from a local trauma clinic primarily serving victims of intimate partner violence, sexual assault, and childhood abuse, as well as perpetrators of intimate partner violence. Qualifying participants included adults seeking victim services. The current study included only females who grew up in two-parent households, experienced intimate partner violence (IPV), and were seeking services for IPV victimization. Fifteen participants were screened out of the study because they were not seeking services related to relationship violence; eight did not grow up in two-parent households and had incomplete data for father measures; six had incomplete data on other measures, eight produced invalid protocols, and four males were screened out due to the low number of males and possible gender differences. The final sample consisted of 59 women from two-parent families of origin who were seeking psychotherapeutic and/or legal services related to their experiences of IPV victimization.

Many participants identified additional reasons for seeking services, including childhood abuse (48%), mandated parenting classes (9%), sexual assault (29%) (of which 71% identified their romantic partner as the sexual assailant), and secondary victimization (46%) (i.e., someone close to you was abuse or assaulted). In terms of services, 88% of the sample had received therapy services, 34% had utilized shelter services, and 36% had received legal advocacy. The largest portion of participants (47%) had been attending services at the trauma clinic for three months or less, while 26% had been attending 3-9 months, 12% for about 1 year, 4% for about 2 years, and 9% for 3 years or longer. The length of time specifically in therapy services was

similar: 48% in therapy 3 months or less, 21% for 3-9 months, 12% for approximately 1 year, 3% for approximately 2 years, 3% for 3 years or longer, and 12% not attending therapy.

The mean age of the sample in the current study was 36.6 years old ( $SD = 11.8$ ) and 62% self-identified as Caucasian (see Table 2 for complete statistics on ethnicity). Twelve percent were married, 33% were divorced, 26% were separated, 22% were never married, and 3% were widowed. The majority of participants (68%) were currently not in serious relationships (i.e., separated, single but not dating, or dating casually), while a minority (26%) were in serious relationships (i.e., dating seriously, living together / engaged, or married / partnered). Six percent of women classified their current relationship status as “other,” and specified such relational situations as “seeking a divorce” or “he’s in jail.” Fifty-nine percent of the sample had had some college education, a trade school diploma, or community college degree. The majority of the sample (54%) was not employed, while 12% worked part-time, and 34% worked full-time. Twenty-two percent of participants were part-time or full-time students. The median annual household income of the sample was \$10,100. (See descriptive statistics of sample in Tables 1 and 2.)

The sample was examined to determine what type of intimate partner violence was present. The sample was comprised of victims of intimate terrorism in which their partners perpetrated abusive and controlling behavior, while they remained largely non-abusive and non-controlling. Paired sample *t*-tests indicated that participant’s partners engaged in significantly more physical assault ( $t = 7.24, df = 58, p < .001$ ), psychological aggression ( $t = 5.74, df = 58, p < .001$ ), sexual coercion ( $t = 4.32, df = 58, p < .001$ ), and caused more injury ( $t = 6.03, df = 58, p < .001$ ) than participants. Furthermore, participants reported high levels of control tactics by their

partners, whereas participants engaged in significantly more negotiation tactics compared to their partners ( $t = 6.99, df = 58, p < .001$ ).

### Procedure

The current study was approved by the Internal Review Board at University of North Texas. Permission to conduct research at a local trauma clinic was obtained by their board of directors. Participants were recruited through clinician referrals and flyers posted in clinic waiting areas. Participants who were interested showed up to the trauma clinic during business hours where they were greeted by research assistants and informed about the study, its procedures, and monetary compensation for completing the study. Once informed consent was obtained, participants completed packets of self-report questionnaires. Participants completed self-report measures of their own childhood experience in their family of origin (i.e., parent-child attachment, childhood abuse history, witnessed IPV violence between their parents), their current or most recent romantic relationships (i.e., romantic attachment, intimate partner violence), and their current psychological functioning (e.g., trauma reaction symptoms, personality functioning, and other indexes of distress). Questionnaire packets were counterbalanced and administered by research assistants. Research assistants were present to answer questions and administer items orally as needed. Upon completing the study, participants were compensated with \$10 cash.

### Measures

#### *Demographics*

The participants completed the demographic information and history form (see Appendix A). Variables assessed included gender, age, education level, ethnicity, income, marital and relationship status, reasons for seeking services at the trauma clinic, length of services at the trauma clinic, diagnostic history, and other demographic information.

### *Childhood History of Abuse*

The Conflict Tactics Scale, Parent-Child version (CTSPC; Straus, Hamby, Finkelhor, Moore, & Ruuyan 1998) was used to retrospectively measure participants' history of childhood abuse from both mother and father figures. Of interest in the present study are the CTSPC subscales of Physical Assault (13 items), and Sexual Abuse (2 items). Scores can be obtained for prevalence, frequency, and severity for each subscale. The CTSPC consists of a list of behaviors directed toward a child, and deliberately excludes attitudes, emotions, and cognitive appraisal of these behaviors. High scores on the Physical Assault scale indicate physical maltreatment on the child. The Sexual Abuse scale measured unwanted touch and forced sexual contact from anyone, not just the parent, but was modified in this study to allow for additional specificity about a respondent's relationship to a perpetrator so that parent-specific perpetration data could be collected.

In the original national Gallup Survey of 1,000 parents (reporting on their own parenting practices), the CTSPC demonstrated nearly adequate reliability on the Physical Assault scale (.55) (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). In seven articles, CTSPC yielded alphas ranging from .25 to .92, with a mean of .64 (Straus, 2007). The coefficients that fell below .70 reflected samples in which there was a near zero rate of extremely abusive acts (Straus, 2007). No studies were located that provided data on test-retest reliability of the CTSPC; however, three studies utilizing the previous parent-child version of the original CTS yielded correlation coefficients ranging from .49 (McGuire & Earls, 1993) to .79 (Johnston, 1988) to .80 (Amato, 1991). The CTSPC is similar to the original CTS and Straus (2007) argues that these results probably apply to the CTSPC as well.

Internal consistency for the current sample on the CTSPC ranged from good to excellent: Sexual Abuse (by father figure) ( $\alpha = .81$ ), Physical Assault (by mother figure) ( $\alpha = .91$ ), and Physical Assault (by father figure) ( $\alpha = .96$ ). Regarding the Sexual Abuse (by mother figure) scale, only one person in the sample endorsed any sexual abuse; therefore, there was not adequate variance and internal consistency reliability for this scale was not calculated. Furthermore, as described later, this scale did not contribute adequately to its latent construct and was dropped from the measurement model.

### *Parent-Child Attachment*

Participants retrospectively reported on their childhood attachment with each of their parents during childhood using the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) and the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979; see Appendix B). The IPPA consists of 25 Mother items, 25 Father items, and 25 Peer items; however, only the parent items were used in the current study. In order to accommodate diverse family compositions, items were reworded to refer to non-specific parental figures. For instance, “My mother helps me to talk about my difficulties” was changed to, “My mother / guardian helped me to talk about my difficulties.” Participants completed the same re-worded items about their father figure, such as, “My father / guardian helped me to talk about my difficulties.” For each set of parental items, participants identified the specific parental figure they are evaluating. Participants respond to each IPPA item on a 5-point Likert type scale, ranging from *almost never or never true* (1) to *almost always or always true* (5).

The IPAA has three parent subscales: Trust (10 items), Communication (9 items), and Alienation (6 items). The Trust subscale measures the degree of mutual trust in the parent-child relationship. The Communication subscale reflects the quality of communication, and the

Alienation subscale measures feelings of alienation from and anger toward the parent. The three IPPA subscales are highly intercorrelated, ranging from  $\alpha = .70$  to  $.76$  (Armsden & Greenberg, 1987). Although high and low security classification can be determined through evaluating score placement for each subscale, categorical classifications will not be used in the present study.

The IPPA demonstrates strong internal reliability across the parent and peer scales, ranging from  $.72$  to  $.91$  (Armsden & Greenberg, 1987). The IPPA demonstrates strong test-retest reliability for parent scales over a three-week period with a correlation of  $.93$  (Armsden & Greenberg, 1987). Convergent validity of the IPPA was demonstrated by significant correlations between IPPA security and the Adult Attachment Scale (AAS; Collins & Read, 1990), the Parental Attachment Questionnaire (PAQ; Kenny, 1990), Family Self-Concept ( $.78$ ) on the Tennessee Self-Concept Scale (Fitts, 1965), and family expressiveness ( $.52$ ) and family cohesion ( $.56$ ) on the Family Environment Scale (FES; Moos, 1974; Armsden & Greenberg, 1987). Internal consistency for the current sample on the IPPA ranged from good to excellent: Alienation (father figure) ( $\alpha = .82$ ), Alienation (mother figure) ( $\alpha = .82$ ), Communication (father figure) ( $\alpha = .94$ ), Communication (mother figure) ( $\alpha = .94$ ), Trust (father figure) ( $\alpha = .95$ ), and Trust (mother figure) ( $\alpha = .95$ ).

The PBI was also used to assess childhood attachment with each parent. The PBI is a 25-item self-report measure in which participants respond to statements about how they experienced each parent (mother and father figures) during childhood up to age 16. The PBI measures two factors: care and overprotection. The Care dimension reflects parental warmth and affection as opposed to coldness and rejection. Overprotection refers to an overprotecting and controlling style of parenting. Participants responded to statements about each parent's parenting style on a

Likert-type scale from (0), “very unlike [my parental figure]” to (3), “very like [my parental figure].”

The PBI demonstrates strong psychometric properties. Several studies supported adequate to good internal reliability of subscales ( $\alpha = .71$  to  $.94$ ) (e.g., Brewin, Firth-Cozens, Furnham, & McManus, 1992; Halik, Rosenthal, & Pattison, 1990; Kendler, Meyers, & Prescott, 2000; Richman & Flaherty, 1986). Test-retest reliability was adequately demonstrated in the original non-clinical sample ( $r = .76$  Care,  $r = 0.63$  Overprotection) and in a community sample ( $r = .74$  to  $.94$ ) (Mackinnon, Henderson, Scott, & Duncan-Jones, 1989). Internal consistency for the current sample on the PBI ranged from good to excellent: Overprotection (father figure) ( $\alpha = .82$ ), Overprotection (mother figure) ( $\alpha = .82$ ), Care (father figure) ( $\alpha = .93$ ), and Care (mother figure) ( $\alpha = .95$ ).

The PBI has been validated with other measures of perceived and actual parenting. In the original validation study of a non-clinical group, PBI scores on parental care and overprotection were correlated with participants’ descriptions of their parents as caring or overprotective during a semi-structured interview (agreement on parental care was  $.77$  and  $.47$  for overprotection). In a sample of students, both PBI maternal and paternal care were positively correlated with ISSI “availability of attachment” ( $r = .38$  for both) and “availability of social integration” ( $r = .41$  and  $r = .33$ , respectively). Maternal and paternal protection were negatively correlated with ISSI “availability of social integration” ( $r = .35$  and  $r = .51$ , respectively) (Sarason, Shearin, Pierce, & Sarason, 1987). In a sample of children, the PBI the Care scale was positively correlated with the EMBU-A Emotional Warmth scale ( $r = .67$ ), and negatively correlated to the EMBU-A Rejection scale ( $r = .63$ ) (Gerlsma, Arrindell, & Van der Veen, 1991). The PBI Overprotection scale was positively correlated ( $r = .57$ ) with the EMBU overprotection scale and the EMBU

Rejection scale ( $r = .58$ ). Acceptable sibling agreement on PBI scores of their parents has been demonstrated (e.g., Parker, 1983; Mackinnon et al, 1991) In a non-clinical group, moderate agreement of PBI scores was demonstrated between participants' ratings of their mothers and mothers' ratings of themselves with regard to their relationship with their child during the first 16 years of life (Parker, 1981).

### *Adult Romantic Attachment*

The Experiences in Close Relationships - Revised (ECR-R; Fraley, Waller, & Brennan, 2000; see Appendix C) was used to assess adult romantic attachment. ECR-R is a revised version of the Brennan and colleagues' (1998) Experience in Close Relationships questionnaire. The 36 ECR-R items were selected using Item Response Theory and were drawn from the original pool of items on the ECR (Fraley, Waller, & Brennan, 2000). The original ECR items were drawn from several adult attachment self-report measures including the Adult Attachment Scale (AAS; Collins & Read, 1990), Simpson's (1990) attachment measure, the Relationship Styles Questionnaire (RSQ; Griffin & Bartholomew, 1994), and the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). The ECR-R measures an individual's attachment-related anxiety (18 items) and attachment-related avoidance (18 items). High scores on the Anxiety scale reflect worry about interpersonal rejection and feelings of insecurity about the availability and responsiveness of one's partner. High scores on Avoidance indicate discomfort and avoidance of being close others and depending on others.

Participants completing the ECR-R are asked to respond to how they generally experience relationships by completing item on a 7-point Likert-type scale, ranging from *disagree strongly* (1) to *agree strongly* (7) (Fraley, Waller, & Brennan, 2000). The Avoidance and Anxiety scales yield continuous scores by reversing the scores of the reverse-keyed items

and summing the items together. Although the authors voice caution, participants can be classified into one of Bartholomew's (1990) four attachment categories (i.e., secure, preoccupied, fearful, dismissing) based on their scores. That is, secure individuals score low on both Avoidance and Anxiety, preoccupied individuals score low on Avoidance and high on Anxiety, fearful individuals score high on both Avoidance and Anxiety, and dismissing individuals score high on Avoidance and low on Anxiety.

Fairchild and Finney (2006) conducted confirmatory factor analysis and found support for the two-factor model of ECR-R. The ECR-R also has strong internal reliability, with alphas above .90 for both Anxiety and Avoidance scales (Fairchild & Finney, 2006; Fraley, Waller, & Brennan, 2000). Furthermore, construct validity of the ECR-R was demonstrated by correlations with various measures. Specifically, the Anxiety scale was negatively correlated with the Social Provisions Scale (SPS; Cutrona & Russell, 1987) and positively correlated with the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990), the UCLA Loneliness Scale (Russell, 1996) (Fairchild & Finney, 2006), the Preoccupation subscale (Feeney et al., 1994), and the Jealousy/Fear of Abandonment subscale (Brennan & Shaver, 1995). The Avoidance scale was negatively correlated with the Affectionate Proximity Subscale of the Touch Scale, and positively correlated with the UCLA Loneliness Scale, the Safe-Haven Touch and Touch Avoidance subscales of the Touch Scale (Fairchild & Finney, 2006), the Avoidance subscale (Carver, 1997), and the Discomfort with Closeness subscale (Feeney, Noller, & Hanrahan, 1994). Internal consistency for the current sample on the ECR-R was excellent: Attachment Anxiety ( $\alpha = .90$ ), and Attachment Avoidance ( $\alpha = .94$ ).

### *Intimate Partner Violence*

The Revised Conflict Tactics Scale (CTS2; Strauss & Douglas, 2004) and the Control

Scale (Johnson & Leone, 2005) were used to assess recent intimate partner violence victimization. Combined, the two measures allowed for exploration of the types of intimate partner violence (e.g., intimate terrorism, resistant violence, and situational couple violence). A modified version of the CTS2 was used to also assess the participants' retrospective report of witnessed intimate partner violence between their parents.

The CTS2 consists of a list of behaviors directed toward a partner, and deliberately excludes attitudes, emotions, and cognitive appraisal of these behaviors. Items on the CTS2 are presented in pairs, with the first question asking participants to indicate how often they carried out each abusive behavior in the referent period, and the second asking how often their partner carried out each behavior. The CTS2 subscales used in the present study include Physical Assault, Sexual Coercion, Psychological Aggression, and (Causing) Injury. Examples of items include: "I pushed, shoved, or slapped my partner; My partner pushed, shoved, or slapped me" (Physical assault), "I shouted or yelled at my partner; My partner shouted or yelled at me" (Psychological Aggression), "I used force (like hitting, holding down, or using a weapon) to force my partner to have sex; My partner used force (like hitting, holding down, or using a weapon) to force me to have sex" (Sexual Coercion), and "My partner had a broken bone from a fight with me; I had a broken bone from a fight with my partner." For retrospectively witnessed parental IPV during childhood, the modified version of the CTS2 asked participants to report on each of their parent's behavior on all the above scales except Sexual Coercion. For example, "Mother pushed, shoved, or slapped father; Father pushed, shoved, or slapped mother" (Physical assault). The CTS2 was originally validated on 1,157 undergraduate students (347 males and 810 females) (Straus & Douglas, 2004). Internal consistency reliability ranged from .34 to .94 in 41 studies (Straus, 2005), with the occasional low alpha coefficient occurring when severe

behaviors as measured by some of the items (such as attacking a partner with a knife or gun) were absent or nearly absent in the sample (Straus, 2007). Internal consistency for the current sample on the CTS2 (used for reporting current IPV) ranged from good to excellent: Physical Assault (self) ( $\alpha = .79$ ), Physical Assault (partner) ( $\alpha = .91$ ), Psychological Aggression (self) ( $\alpha = .85$ ), Psychological Aggression (partner) ( $\alpha = .86$ ), Sexual Coercion (partner) ( $\alpha = .82$ ), Injury (self) ( $\alpha = .74$ ), and Injury (partner) ( $\alpha = .74$ ). The only scale with poor reliability was Sexual Coercion (self) ( $\alpha = .31$ ), which was not used for statistical analysis in the current study; all CTS2 “self” scales were only used in conjunction with “partner” scales to help determine what type of IPV was present in the current sample for descriptive purposes (e.g., situational couple violence versus intimate terrorism). Internal consistency for the current sample on the CTS2 (used for retrospectively reporting witnessed parental IPV in childhood) ranged from good to excellent: Physical Assault (mother figure) ( $\alpha = .89$ ), Physical Assault (father figure) ( $\alpha = .96$ ), Psychological Aggression (mother figure) ( $\alpha = .85$ ), Psychological Aggression (father figure) ( $\alpha = .91$ ), Injury (mother figure) ( $\alpha = .87$ ), and Injury (father figure) ( $\alpha = .86$ ).

The Control Scale (Johnson & Leone, 2005) consists of seven items that the authors selected from a larger study, the National Violence Against Women Survey (NVAWS; Tjaden & Thoennes, 2000). The NVAWS items were in turn adopted from the Canadian Violence Against Women Survey (Johnson, 1996) and closely resemble items in the Psychological Maltreatment of Women Survey (Tolman, 1989). The Control Scale assesses nonviolent control tactics used by the participant’s partner. The measure asks the participant to think about her current partner and respond “no” (0) or “yes” (1) to each of the 7 items. Examples of items include: “tries to limit your contact with family and friends” and “insists on knowing who you are with at all times.”

The authors conducted a principal component analysis and concluded that a reasonable seven-item scale could be constructed from the items. The Control Scale score is the total number of control tactics the participant's partner reportedly used, ranging from 0 to 7. Good internal reliability for the scale was demonstrated with Cronbach's alpha of .70. To operationalize the distinction between intimate terrorism and situational couple violence, the authors chose a cut-off point to distinguish between high and low control. Through cluster analysis of the seven individual items in the Control Scale, the authors identified natural clusters of controlling behavior for the violent partners, and then chose a cut-off point for the dichotomization to maximize the fit between the cluster solution and the dichotomized Control Scale. Husbands using three or more of the seven control tactics were coded as "high control," whereas those using two or fewer were labeled as "low control." The present study utilized the Control Scale scores as a continuous variable. It was also used to confirm that participants recruited in the sample were indeed victims of intimate terrorism, and not situational couple violence. In the current sample, the mode score on the control scale was 6 (out of a possible total of 7) and internal consistency was good ( $\alpha = .85$ ).

### *Psychological Functioning*

Participants' psychological functioning in the areas of anxiety- and avoidance-related symptoms was measured by the Trauma Symptom Inventory (TSI; Briere, 1995) and the Millon Clinical Multiaxial Inventory-III (MCMI-III; Millon, 1997). The TSI is a self-report measure of trauma-related symptoms in which 100 items are rated on a 4-point scale based on frequency of occurrence in the last six months. The TSI yields ten clinical subscales that measures symptoms associated with trauma reactions, eight of which were used in the current study: Anxious Arousal, Depression, Anger/Irritability, Intrusive Experiences, Defensive Avoidance,

Dissociation, Impaired Self-Reference, and Tension Reduction Behavior. The TSI contains three validity scales that measure under-reporting, over-reporting, and inconsistent responding.

The TSI's original 182 items were initially tested with 649 university students and clinical subjects. After redundant and poorly performing items were removed, the final 100 items were normed on 836 individuals whose demographics distribution emulated the 1990 US Census data. The TSI demonstrated strong internal consistency reliability for all 10 clinical scales, with an average internal consistency above .85 ( $\alpha = .69$  to  $.91$ ). Good internal consistency was demonstrated for two of the three validity scales ( $\alpha = .75$  for Atypical response, and  $\alpha = .78$  to  $.80$  for Response Level), with less than adequate internal consistency reliability ( $\alpha = .51$  to  $.55$ ) for the Inconsistent Response validity scale. The TSI demonstrated satisfactory convergent and discriminant validity. Convergent validity was demonstrated by correlations with the Brief Symptom Inventory (BSI; Derogatis & Spencer; 1982), with particularly high correlations on three scales: Anxious Arousal ( $r = .75$  with BSI-Anxiety), Anger/Irritability ( $r = .77$  with BSI-Hostility), and Depression ( $r = .82$  with BSI-Depression). The TSI scales were also correlated with the scales of two other instruments measuring posttraumatic stress--the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez; 1979) and the Symptom Checklist (SCL). A discriminant function analysis indicated that the TSI correctly classified 96% of cases positive for trauma and 91% of cases negative for trauma. The TSI was less successful in differentiating PTSD from other trauma related diagnoses such as borderline personality disorder. Internal consistency for the current sample on the TSI ranged from adequate to excellent: Tension Reduction Behavior ( $\alpha = .73$ ), Defensive Avoidance ( $\alpha = .82$ ), Anxious Arousal ( $\alpha = .84$ ), Depression ( $\alpha = .87$ ), Dissociation ( $\alpha = .89$ ), Impaired Self-Reference ( $\alpha = .89$ ), Anger/Irritability ( $\alpha = .90$ ), and Intrusive Experiences ( $\alpha = .91$ ).

Four scales from the MCMI-III were also used to measure psychological functioning. The MCMI-III is a 175-item, true-false, self-report inventory of psychopathology that is designed to coordinate with DSM-IV categories of clinical syndromes and personality disorders. Although it is widely used for assessment of Axis II personality pathology with its 14 personality scales, it also assesses Axis I clinical syndromes with 10 different clinical syndrome scales. In addition, there is a Validity scale and three Modifying Indices (i.e., Disclosure, Desirability, and Debasement) that are used to further assess validity adjust scores for certain response tendencies associated with particular Axis I or II conditions.

The four scales used in the present study include Major Depression, Somatoform, Borderline Personality and Avoidant Personality. The author described high scorers on the Major Depression scale as severely depressed and expressing a dread of the future, suicidal ideation, and a sense of hopeless resignation. They may experience problems with concentration, feelings of worthlessness or guilt, and repetitive fearfulness and brooding. They may be incapable of functioning in a normal environment, may exhibit psychomotor retardation or agitation, and may experience several somatic disturbances such as a decreased appetite, fatigue, weight loss or gain, or insomnia (Millon, 1997).

The author described high scorers on the Somatoform scale as expressing psychological difficulties through somatic channels, such as persistent periods of fatigue and weakness and a preoccupation with ill health. While some may be preoccupied with a variety of dramatic but largely nonspecific pains in different and unrelated regions of the body, others may interpret minor physical discomforts or sensations as signifying a serious ailment (e.g., hypochondriasis). Typically, somatic complaints are employed to gain attention. If realistic diseases are factually present, they tend to be over interpreted despite medical reassurance (Millon, 1997).

High scorers on the Borderline Personality scale are defined by dysregulation of affect and mood lability. They experience intense moods marked by recurring periods of dejection, apathy, and spells of anger and anxiety. Many have recurring self-mutilation and suicidal thoughts, appear overly preoccupied with securing affection, have difficulty maintaining a clear sense of identity, and display ambivalence with conflicting feelings of rage, love, and guilt toward others (Millon, 1997).

High scorers on the Avoidant Personality scale of the MCMI-III are defined as fearful, vigilant, “on guard,” and ready to distance themselves because of anxious anticipation of painful and humiliating experiences. By actively withdrawing, they protect themselves in spite of deep desires to be close to others (Millon, 1997).

The MCMI-III was normed on entirely clinical samples and is “applicable only to individuals who evidence problematic emotional and interpersonal symptoms or who are undergoing professional psychotherapy or a psychodiagnostic evaluation” (Millon, 1997, p. 6). All participants in the current study were receiving professional services, such as therapy, for interpersonal victimization. Items are scored, weighted, summed, and then transformed into Base Rate scores in accordance with the prevalence of the disorder in the psychiatric population. The author suggests that a Base Rate score of 75 on a personality scale indicates the presence of a “trait,” while a score of 85 or higher indicates the presence of a “disorder.” Similarly, on the clinical syndrome scales, a Base Rate of 75 indicates the presence of a syndrome, while a Base Rate of 85 or higher indicates the prominence of a syndrome.

The MCMI-III demonstrates strong internal consistency reliability for the four scales used in the present study (Major Depression  $\alpha = .90$ , Somatoform  $\alpha = .86$ , Borderline Personality  $\alpha = .85$ , and Avoidant Personality  $\alpha = .89$ ). The MCMI-III manual cites several unpublished

validity studies and many peer reviewed journal articles have contributed to the establishment of the reliability and validity of the MCMI. Numerous reviews and critiques of older version of the MCMI have been written (e.g., Dana & Cantrell, 1988; Greer, 1984; Haladyna, 1992; Hess, 1985; Lanyon, 1984; McCabe, 1984; Reynolds, 1992; Widiger, 1999).

More recent convergent validity of the MCMI-III Avoidant Personality scale has been demonstrated by significant correlations with the Avoidant scale of the Personality Diagnostic Questionnaire–Revised (PDQ–R; Hyler & Rieder, 1987) (Blais, Holdwick, McLean, Otto, Pollack, & Hilsenroth, 2003), the Avoidant scale of the MMPI-1 Morey Personality Disorder Scales, and the Avoidant scale of the MMPI-2 Ben-Porath Personality Disorder scales (Rossi, Van den Brande, Tobac, Sloore, & Hauben, 2003). Convergent validity of the MCMI-III Borderline Personality scale has been demonstrated by significant correlations with the Borderline scales on the MMPI-1 Morey Personality Disorder Scales and the MMPI-2 Ben-Porath Personality Disorder scales (Rossi, Van den Brande, Tobac, Sloore, & Hauben, 2003).

#### Data Analysis

A latent variable path analysis with partial least squares (PLS) estimation procedures was conducted to test the hypothesized model that was based on theoretical and empirical literature (see Figures 1 and 2). For a thorough description of PLS and step-by-step guidelines for analysis and interpretation, see Morse (2010).

PLS is a statistical method of “soft modeling” (Chin, 1998) that allows social scientists to test theories of sequences of events with cross-sectional data (Falk & Miller, 1992). The goal of PLS is to create the optimal linear predictive relationships among variables, in which the predictor variables becomes the best possible predictors and the predicted variables become the best possible predicted variables given the data and the model (Falk & Miller, 1992, p. xi). PLS

path analysis does not yield causal relationships; rather, it uses predictive modeling to explain how predictable an event is given other events in the model (Falk & Miller, 1992). PLS is used to conduct variance-based structural equation modeling (SEM) of hypothesized relationships among constructs without imposing certain restrictive statistical and structural assumptions that are required by covariance-based SEM (Falk & Miller, 1992; Morse, 2010). PLS path analysis was chosen for the current study because it is ideal for studies with small samples and multiple measures (Morse, 2010). A noted limitation of PLS is that it may underestimate the correlations between latent variables and overestimate the loadings of manifest variables onto their latent variables; however, this limitation diminishes as the sample size and number of indicators increases (Haenlein & Kaplan, 2004; Morse, 2010).

The SmartPLS 2.0 (M3) beta program (Ringle, C.M., Wende, S., & Will, A., 2005) was used to perform the statistical analyses in the current study. The assumptions that must be met to utilize PLS are considered to be liberal (Morse, 2010). When using PLS, the data can have non-normal distributions, indicators can be categorical, ordinal, or continuous and are allowed some unreliability, and heteroscedasticity can be present (Morse, 2010). Furthermore, PLS allows for indicators to be modeled in either a reflective or formative way (Morse, 2010). In the current study, all indicators are reflective and changes in the latent construct are expected to be manifested in changes in all of its indicators (Henseler, Ringle, & Sinkovics, 2009; Morse, 2010). Given that all the indicators in the current model are reflective, the minimal required sample size for PLS analysis is ten times the dependent latent variable with the largest number of independent latent variables influencing it (Chin, 1998). In the current model, the largest number of independent latent variables influencing a dependent variable is three. Specifically, both Childhood Attachment with Mother and Childhood Attachment with Father are predicted by

three independent latent variables. Therefore, ten times three yields a required minimal sample size of 30. With the current sample size of 59, the sample size criterion is met.

The proposed model in the current study (see Figures 1 and 2) contains 11 latent variables that are created from their respective manifest variables (or reflective indicators) described in the Measures section. There are four latent variables that account for sources of childhood trauma in the model: (1) Child Abuse by Mother, which is comprised of 2 reflective indicators of Physical Abuse and Sexual Abuse; (2) Child Abuse by Father, which is composed of 2 reflective indicators of Physical Abuse and Sexual Abuse; (3) Mother IPV Perpetration, which is composed of 3 reflective indicators including Causing Injury, Physical Assault, and Psychological Aggression; and (4) Father IPV Perpetration, which is composed of 3 reflective indicators including Causing Injury, Physical Assault, and Psychological Aggression. There are two latent variables that represent childhood attachment in the model: (1) Childhood Attachment with Mother, which is composed of 5 reflective indicators including Alienation, Lack of Care, Lack of Trust, Lack of Communication, and Overprotection; and (2) Childhood Attachment with Father, which is composed of 5 reflective indicators including Alienation, Lack of Care, Lack of Trust, Lack of Communication, and Overprotection. There are two latent variables that tap into adult romantic attachment in the model: (1) Adult Attachment Anxiety, which is composed of 3 reflective indicators including Attachment Anxiety Parcel 1, Attachment Anxiety Parcel 2, and Attachment Anxiety Parcel 3—parcels of six items each from the Attachment Anxiety scale (created using factor analysis and parceling items in a stepwise fashion according to their loading strength to create three equally strong parcels); and (2) Adult Attachment Avoidance, which is composed of 3 reflective indicators including Attachment Avoidance Parcel 1, Attachment Avoidance Parcel 2, and Attachment Avoidance Parcel 3—parcels created similarly but using the

Attachment Avoidance scale items. There is one latent variable representing adult victimization in the model: Intimate Partner Violence Victimization, which is composed of 5 reflective indicators including Control, Injury, Physical Assault, Psychological Aggression, and Sexual Coercion. Finally, there are 3 latent variables that account for symptoms of distress in the model: (1) Anxiety-Related Symptoms, composed of 5 reflective indicators including Tension Reduction Behavior, Impaired Self-Reference, Anger / Irritability, Anxious Arousal, and Borderline Personality Traits; (2) Avoidance-Related Symptoms, composed of 5 reflective indicators including Defensive Avoidance, Intrusive Experiences, Dissociation, Somatoform, and Avoidant Personality Traits; and (3) Anxiety / Avoidance Overlap Symptoms, composed of 2 reflective indicators including Depression (as measured by the TSI) and Major Depression (as measured by the MCMI-III).

## CHAPTER 3

### RESULTS

Partial Least Squares (PLS) path analysis involves examining the proposed model at two levels. First, the outer measurement model is examined to evaluate the relationship between each latent variable and its respective manifest variables (or block of indicators). This analysis is required to ensure that reliable and valid constructs are being used before the inner structural model is assessed (Hulland, 1999; Morse, 2010). Second, the inner structural model is examined to evaluate the predicted relationships between the latent variables (Henseler et al., 2009; Morse, 2010).

#### Evaluation of the Proposed Outer Measurement Model

Evaluation of the outer measurement model involves testing the reliability and validity of the indicators that are blocked together to form a latent variable. To ensure reliability, both internal consistency and indicator reliability need to be adequate. Internal consistency reliability of each indicator was first assessed at the individual scale level with Cronbach's alpha. As reported in the Measures section, all scales demonstrated adequate to stronger reliability (i.e.,  $\alpha \geq .70$ ) except one scale: Childhood Sexual Abuse by Mother Figure. Only one participant in the sample endorsed any level of sexual abuse by a mother figure; therefore, there was not adequate variance or reliability and the scale was dropped from the measurement model. Cronbach's alpha is also utilized, along with a measure of composite reliability, to assess the reliability of the block of indicators for each latent variable. PLS prioritizes indicators according to their reliability; therefore, although both are examined, the measure of composite reliability is considered a more appropriate measure of the internal consistency of the indicators than Cronbach's alpha because Cronbach's alpha assumes all indicators are equally reliable whereas composite reliability

accounts for the different loadings of indicators (Morse, 2010). A value of .70 or greater is acceptable for both Cronbach's alpha and composite reliability (Chin, 1998; Henseler et al., 2009; Morse, 2010). In the proposed outer measurement model, acceptable composite reliabilities were obtained for all blocks of indicators (see Table 3). Acceptable Cronbach's alphas were also obtained for all blocks of indicators except Childhood Abuse by Father Figure ( $\alpha = .60$ ); however, the composite reliability was still acceptable (.83).

The reliability of each indicator is also examined by the strength of each indicator's loading with its respective construct, whereby higher loadings indicate more shared variance between the construct and the indicators than error variance (Henseler et al., 2009; Morse, 2010). Loadings of .55 or higher between an indicator and its respective construct are considered acceptable (Falk & Miller, 1992; Morse, 2010). In the proposed outer measurement model, most loadings were acceptable (see Table 3). Inadequate loadings were identified on the three latent variables. First, the latent variable Childhood Attachment with Mother contained one indicator (Overprotection) with an inadequate factor loading (.35). It is recommended to eliminate a reflective indicator from a measurement model when the loading is less than .40 if removing it substantially improves the composite reliability (Henseler et al., 2009; Morse, 2010). Although the reliability for Childhood Attachment with Mother was strong with Overprotection included as an indicator (.92), removing Overprotection strengthened the reliability (.97) and, therefore, was eliminated from the measurement model.

Overprotection was also an indicator for Childhood Attachment with Father. Although it demonstrated an adequate loading (.67) on this construct, the loading was substantially lower than other loadings on the construct; moreover, eliminating it strengthened the composite reliability (albeit, minimally {from .92 to .94}). Overprotection was eliminated from the

Childhood Attachment with Father construct, however, to keep the measures of childhood attachment congruent for each parent.

The next latent variable with an inadequate factor loading was Intimate Partner Violence construct, with Sexual Coercion loading at .48. Although the composite reliability for Intimate Partner Violence (.81) was strong with Sexual Coercion included as an indicator, removing Sexual Coercion did not reduce its composite reliability (i.e., .82), slightly improved its internal consistency (i.e., Cronbach's alpha from  $\alpha = .76$  to  $\alpha = .79$ ), and the increased the average variance extracted from .47 to .54; therefore, Sexual Coercion was eliminated from the measurement model.

The last latent variable with problematic factor loadings was Avoidance-Related Symptoms, with three indicators loading under .55 (Dissociation = .54, Defensive Avoidance = .52, and Intrusive Experiences = .44). These indicators were eliminated because doing so improved the composite reliability substantially (i.e., from .79 to .88). (See Table 4 for reliability of the proposed measurement model after revision).

Next, the convergent validity and the discriminant validity of the proposed measurement model were examined. To demonstrate convergent validity, the average variance extracted (AVE) of each latent construct should be at least .50, indicating that, on average, the latent variable is able to explain more than half of the variance of its indicators (Morse, 2010). Once the four unreliable indicators were eliminated from the measurement model as described above, the only latent variables with inadequate AVE (i.e., Intimate Partner Violence and Avoidance-Related Symptoms), were no longer problematic (see Table 5). All other latent variables demonstrated convergent validity with adequate AVE values (see Table 5).

Discriminant validity was examined in two ways. First, the discriminant validity of each latent construct is demonstrated when the loading of each of its indicators is higher than all of its cross-loadings onto other latent variables (Chin, 1998; Henseler et al., 2009; Morse, 2010). Again, once the above noted unreliable indicators were eliminated from the measurement model, this was achieved (see Table 6). Second, the discriminant validity of each latent construct was examined with the Fornell-Larcker criterion in which a latent variable should share more variance with its respective indicators than with another latent variable. Meeting that criterion demonstrates the uniqueness of a construct. The Fornell-Larcker criterion was met for all latent constructs in the proposed measurement model (see Table 5) except for Anxiety-Related Symptoms.

Anxiety-Related Symptoms had the highest squared correlation with Anxiety / Avoidance Overlap Symptoms. Although collapsing the two latent variables is an option in this situation, it did not make theoretical sense to do so. Specifically, the latent construct of Anxiety / Avoidance Overlap Symptoms was measured by two indicators of depression: MCMI Major Depression, and TSI Depression. When evaluating the possibility of collapsing them with Anxiety-Related Symptoms, it became apparent that TSI Depression only loaded adequately onto Anxiety-Related Symptoms and MCMI Major Depression cross-loaded more strongly onto Avoidant-Related Symptoms. Thus, merging the Anxiety / Avoidance Overlap Symptoms and Anxiety-Related Symptoms constructs would not account for the relationship between the MCMI Major Depression indicator and the Avoidant-Related Symptoms latent variable.

Another possible solution would be to eliminate the Anxiety / Avoidance Overlap Symptoms construct and separate its two indicators, with TSI Depression loading on Anxiety-Related Symptoms and MCMI Major Depression loading on Avoidant-Related Symptoms. A

possible rationale for that decision would be that the two measures are tapping into different types or aspects of depression (e.g., comorbid anxious depression versus depression with more somatic and avoidant features such as a sense of resignation and defeat). Alternately, the two measures may have produced different results because of being developed with significantly different populations (e.g., female relational trauma victims versus male veterans). While these explanations are plausible, no empirical or theoretical literature was available to support the idea that two valid measures of depression should load on separate latent constructs; thus, separating the depression indicators was not defensible. Moreover, since the current study did not include a more general measure of depression (e.g., the Beck Depression Inventory) to clarify the relationship between depression and the other constructs, the Anxiety / Avoidance Overlap Symptoms construct and its two indicators of depression were removed from the model to produce a revised proposed model with clear theoretical and measurement backing (see Figure 3 for the revised proposed model). Discriminant validity was achieved for all latent variables in the revised proposed model (see Table 5). Hereafter, the revised proposed model is referred to as simply the “proposed model.”

#### Evaluation of the Proposed Inner Structural Model

After demonstrating the reliability and validity of the outer measurement model, the inner structural model was evaluated. First, the amount of variance explained ( $R^2$ ) for each dependent latent variable was examined to determine if it was weak ( $\geq .02$ ), moderate ( $\geq .15$ ), or strong ( $\geq .26$ ) using Cohen’s (1987) standards. The  $R^2$  values for dependent latent variables in the proposed inner model ranged from .08 to .45 (see Table 7).

Next,  $F$ -tests were used to test the significance of the variance explained for each dependent latent variable. All dependent latent variables in the proposed inner model were

significant except Adult Attachment Anxiety and Adult Attachment Avoidance (see Table 7). This means that each dependent latent variable in the proposed model (except Attachment Anxiety and Attachment Avoidance) was significantly predicted by its respective set of predictor variables (i.e., the set of latent variables proposed to predict the dependent latent variable). On the other hand, Adult Attachment Anxiety and Adult Attachment Avoidance were not significantly predicted by their respective set of predictor variables. This was examined more closely in the next step of analysis (see below) in which each predictor in the model was assessed to determine if it contributed significantly to its dependent latent variable. Non-significant predictors were eventually trimmed from the model, as eliminating such non-significant pathways in a set of predictor variables may improve the variance explained in the latent variable and result in an *F*-test reaching significance.

As mentioned above, the next step in evaluating the inner model was to examine the path coefficients between each dependent latent variable and its predictor variables in order to assess which predictor(s) contributed significantly to the variance of each dependent variable. See Figure 4 for path coefficients and their statistical significance. To test the significance of each path coefficient, a bootstrapping procedure using 500 subsamples was used to obtain *t*-values that were evaluated for their statistical significance. Furthermore, confidence intervals, effect size, and contribution to  $R^2$  were calculated for each path coefficient (see Tables 8-13).

In the proposed model, it was hypothesized that Childhood Attachment with Mother would be predicted by three variables: Childhood Abuse by Mother, Mother IPV Perpetration, and Father IPV Perpetration. Results indicated that the variance accounted for by these three predictors was statistically significant,  $F(3, 55) = 14.70, p < .05, R^2 = .45$ . Two of the three path coefficients from the predictor variables to Childhood Attachment with Mother were significant,

with signs in the expected direction. Specifically, Childhood Abuse by Mother was the most significant predictor ( $\beta = .47, t = 4.64, p < .05$ ), accounting for over 60% of the explained variance in Childhood Attachment with Mother, with a large effect size ( $f^2 = .53$ ). Mother IPV Perpetration was also a significant predictor ( $\beta = .33, t = 3.02, p < .05$ ), accounting for 39% of the explained variance in Childhood Attachment with Mother, with a medium effect size ( $f^2 = .31$ ). The third predictor, Father IPV Perpetration, was not a significant predictor of Childhood Attachment with Mother ( $\beta = -.05, t = 0.64, p > .05$ ). (See Table 8.)

Similarly, in the proposed model it was hypothesized that Childhood Attachment with Father would be predicted by three variables: Childhood Abuse by Father, Father IPV Perpetration, and Mother IPV Perpetration. Results indicated that the variance accounted for by these three predictors was statistically significant,  $F(3, 55) = 12.27, p < .05, R^2 = .40$ . While all path coefficients had signs in the expected direction, only one of the three path coefficients to Childhood Attachment with Father was significant. Specifically, Childhood Abuse by Father was the only significant predictor of Childhood Attachment with Father ( $\beta = .53, t = 4.78, p < .05$ ), accounting for 82.3% of the explained variance, with a large effect size ( $f^2 = .55$ ). Father IPV Perpetration to Childhood Attachment with Father was not a significant predictor ( $\beta = .14, t = 1.04, p > .05$ ), but did account for 17.1% of the explained variance, with a small effect size ( $f^2 = .11$ ). The path coefficient from Mother IPV Perpetration to Childhood Attachment with Father was nearly zero and non-significant ( $\beta = .01, t = 0.05, p > .05$ ), accounting for almost no variance (i.e., 0.6%). (See Table 9.)

Next, Adult Attachment Anxiety was hypothesized in the proposed model to be predicted by two variables: Childhood Attachment with Mother and Childhood Attachment with Father. Results indicated that the variance accounted for by these two predictors was not significant ( $F$

(2, 56) = 2.50,  $p > .05$ ,  $R^2 = .08$ ), but the effect size was meaningful. Thus, the signs of the path coefficients were examined to see if they were in the expected direction. The signs of the path coefficients from both Childhood Attachment with Mother and Childhood Attachment with Father to Adult Attachment Anxiety were in the expected (positive) direction. (See Table 10.)

Similarly, Adult Attachment Avoidance was hypothesized in the proposed model to be predicted by both Childhood Attachment with Mother and Childhood Attachment with Father. Results indicated that the variance accounted for by these two predictors was non-significant ( $F(2, 56) = 2.40$ ,  $p > .05$ ,  $R^2 = .08$ ). However, the signs of the path coefficients for each predictor were in the expected direction. (See Table 11.)

Intimate Partner Violence (IPV) Victimization was hypothesized in the proposed model to be predicted by Adult Attachment Anxiety and Adult Attachment Avoidance. Results indicated that the variance accounted for by these two predictors was statistically significant ( $F(2, 56) = 15.28$ ,  $p < .05$ ,  $R^2 = .35$ ) and both predictors were significant and in the expected direction. Adult Attachment Anxiety was the strongest predictor of IPV Victimization (beta = .41,  $t = 3.68$ ,  $p < .05$ ), accounting for 59% of the explained variance, with a medium effect size ( $f^2 = .32$ ). Adult Attachment Avoidance was also a significant predictor (beta = .32,  $t = 3.02$ ,  $p < .05$ ), accounting for 41% of the explained variance in IPV Victimization, with a medium effect size ( $f^2 = .22$ ). (See Table 12.)

Anxiety-Related Symptoms was hypothesized in the proposed model to be predicted by Adult Attachment Anxiety and IPV Victimization. Results indicated that the variance accounted for by these two predictors was statistically significant ( $F(2, 56) = 6.19$ ,  $p < .05$ ,  $R^2 = .18$ ); however, only Adult Attachment Anxiety predicted Anxiety-Related Symptoms (beta = .46,  $t =$

3.09,  $p < .05$ ), accounting for all of the explained variance, with a medium effect size ( $f^2 = .24$ ). IPV Victimization was not a significant predictor of Anxiety-Related Symptoms. (See Table 13.)

Avoidance-Related Symptoms was hypothesized in the proposed model to be predicted by Adult Attachment Avoidance and IPV Victimization. Results indicated that the variance accounted for by these two predictors was statistically significant ( $F(2, 56) = 10.10, p < .05, R^2 = .27$ ). While both predictors were in the expected direction, only Adult Attachment Avoidance was a statistically significant predictor of Avoidance-Related Symptoms ( $\beta = .51, t = 3.78, p < .05$ ), accounting for 99% of the explained variance, with a large effect size ( $f^2 = .36$ ). (See Table 14.)

The next step in evaluating the inner structural model is to assess the model's predictive relevance and goodness of fit (GoF). Using a blindfolding procedure, the Stone-Geisser's criterion (i.e., *cv-communality* and *cv-redundancy*) was calculated to assess the predictive relevance (see Table 15). *Cv-redundancy* values greater than zero indicate predictive relevance, with higher values indicating more predictive relevance (Chin, 1998, Morse, 2010; Tenenhaus et al., 2005). All *cv-redundancy* values in the model were greater than zero. The relative impact of each *cv-redundancy* value was assessed by  $q^2$  values to determine if the predictive relevance for a dependent latent variable was small ( $\geq .02$ ), medium ( $\geq .15$ ), or large ( $\geq .35$ ) (Henseler et al., 2009).

Two latent variables (Childhood Attachment with Mother and Childhood Attachment with Father) demonstrated large predictive relevance, one latent variable (Avoidance-Related Symptoms) demonstrated medium predictive relevance, and four latent variables (Adult Attachment Anxiety, Adult Attachment Avoidance, Intimate Partner Violence Victimization, and Anxiety-Related Symptoms) demonstrated small predictive relevance (see Table 15). The

goodness-of-fit (GoF) for the proposed model was calculated to assess if the model demonstrated weak ( $\geq .10$ ), moderate ( $\geq .25$ ), or substantial ( $\geq .36$ ) fit according to standards suggested by Wetzel and colleagues (2009). The proposed model demonstrated a substantial goodness-of fit (GoF = .44), indicating that the model is able to take into account 44% of the achievable fit (see Table 16).

### Model Trimming

Following PLS path analysis of the proposed model, the model was trimmed by eliminating non-significant pathways ( $p > .05$  for one-tailed  $t$ -tests) through a bootstrapping procedure. Non-significant pathways were eliminated in a stepwise fashion (weakest pathways eliminated first) until the model contained only significant pathways. The following pathways were eliminated in sequential order: (1) Mother IPV Perpetration to Childhood Attachment with Father, (2) IPV Victimization to Avoidance-Related Symptoms, (3) Father IPV Perpetration to Childhood Attachment with Mother, (4) IPV Victimization to Anxiety-Related Symptoms, (5) Childhood Attachment with Mother to Adult Attachment Anxiety, and (6) Childhood Attachment with Mother to Adult Attachment Avoidance (see Figure 5). Once the pathways from Childhood Attachment with Mother to the two adult attachment dimensions were eliminated, Childhood Attachment with Mother was no longer a predictor for any endogenous variable in the model so it was eliminated, thereby also forcing elimination its predictor variables (Childhood Abuse by Mother and Mother IPV Perpetration). That is, all latent constructs related to history with one's mother (i.e., child abuse, IPV perpetration, and childhood attachment) were eliminated in the reduced model. See Figure 6 for the reduced model.

### Evaluation of the Reduced Outer Measurement Model

The measurement model in the reduced model did not differ from the measurement

model in the proposed model. That is, the latent variables retained their indicators. The only changes that were made were to the inner structural model by eliminating pathways and latent variables. Therefore, the outer reduced model is considered reliable and valid, just as the outer proposed model was. Nearly all reliability and validity statistics were identical for the reduced model and are presented in Tables 16-19. All reliability and validity values were acceptable.

#### Evaluation of the Reduced Inner Structural Model

*F* tests were run for each latent variable to determine the significance of the variance explained. All latent variables in the model except one produced significant *F* tests, indicating that the variance in the latent variable was significantly accounted for by its predictor(s) (see Table 20). Although the *F* test for Adult Attachment Avoidance was non-significant, the pathway from its predictor was significant nonetheless as described below.

In the reduced model, Childhood Abuse by Father significantly predicted Childhood Attachment with Father (beta = .62,  $t = 9.88$ ,  $p < .05$ ), with a large effect size ( $f^2 = .64$ ) (see Table 21). Childhood Attachment with Father, in turn, significantly predicted both adult attachment constructs. That is, Childhood Attachment with Father significantly predicted Adult Attachment Anxiety (beta = .27,  $t = 1.91$ ,  $p < .05$ ), with a small effect size ( $f^2 = .09$ ) (see Table 22). Childhood Attachment with Father also significantly predicted Adult Attachment Avoidance (beta = .25,  $t = 1.80$ ,  $p < .05$ ), with a small effect size ( $f^2 = .07$ ) (see Table 23). The two adult attachment constructs, in turn, significantly predicted Intimate Partner Violence Victimization as well as symptom outcome. That is, Adult Attachment Anxiety significantly predicted Intimate Partner Violence Victimization (beta = .39,  $t = 3.03$ ,  $p < .05$ ), accounting for 58% of the explained variance, with a medium effect size ( $f^2 = .28$ ). Adult Attachment Avoidance also significantly predicted Intimate Partner Violence Victimization (beta = .32,  $t = 3.04$ ,  $p < .05$ ),

accounting for 42% of the explained variance, with a medium effect size ( $f^2 = .21$ ) (see Table 24). In terms of symptom outcome, Adult Attachment Anxiety significantly predicted Anxiety-Related Symptoms ( $\beta = .39, t = 3.03, p < .05$ ) with a medium effect size (see Table 25), whereas Adult Attachment Avoidance significantly predicted Avoidance-Related Symptoms ( $\beta = .39, t = 3.03, p < .05$ ) with a medium effect size (see Table 26).

The reduced model was also evaluated for its predictive relevance and goodness of fit. All *cv*-redundancy values were greater than zero, indicating the model has predictive relevance (see Table 27). Specifically, Childhood Attachment with Father and Adult Attachment Anxiety demonstrated large predictive relevance ( $q^2 \geq .35$ ). Intimate Partner Violence Victimization and Avoidance-Related Symptoms demonstrated medium predictive relevance ( $q^2 \geq .15$ ). Last, Adult Attachment Avoidance and Anxiety-Related Symptoms demonstrated small predictive relevance. The reduced model was also examined for goodness of fit and demonstrated a substantial fit ( $\text{GoF} = .40$ ). That is, the reduced model accounted for 40% of the achievable fit.

#### Exploratory Analyses

The following exploratory analyses were conducted to aid in explanation and discussion of findings in the current study. Ratings of parents were compared for differences in perpetration of IPV and child abuse. In the current sample, 77% of participants reported witnessing some degree of parental IPV (ranging from mild to severe) in childhood. Participants rated their fathers as perpetrating significantly more IPV than their mothers (Physical Assault  $t = 2.23, df = 58, p < .05$ , Psychological Aggression  $t = 2.13, df = 58, p < .05$ , Causing Injury  $t = 1.97, df = 58, p = .05$ ). Regarding child abuse, fathers perpetrated significantly more sexual abuse than mothers ( $t = 3.09, df = 58, p < .01$ ). Mothers and fathers did not differ significantly in their perpetration of physical child abuse ( $t = 0.46, df = 58, p = .65$ ). Although paternal IPV perpetration was not a

significant predictor of father-child attachment, it did predict paternal child abuse perpetration (beta = .36,  $t = 8.581$ ,  $p < .05$ ).

Childhood attachment with each parent was also explored to determine if any significant differences existed. Participants rated their childhood attachment with fathers as significantly more maladaptive than their attachment with mothers on one of the four indicators of childhood attachment. That is, participants rated their fathers higher on Lack of Communication than their mothers ( $t = 2.07$ ,  $df = 58$ ,  $p < .05$ ), but did not rate them significantly different on Lack of Trust ( $t = 1.01$ ,  $df = 58$ ,  $p = .32$ ), Lack of Care ( $t = 0.94$ ,  $df = 58$ ,  $p = .35$ ), or Alienation ( $t = 0.66$ ,  $df = 58$ ,  $p = .51$ ).

Exploratory analyses were also conducted to investigate the possibility of a bidirectional relationship between adult attachment and IPV victimization. PLS analysis was utilized to test a model in which the direction of prediction was reversed. That is, instead of adult attachment predicting IPV victimization, IPV victimization was modeled to predict adult attachment. When modeled in this reverse way, IPV significantly predicted Adult Attachment Anxiety (beta = .49,  $t = 3.97$ ,  $p < .05$ ), explaining 24% of the variance ( $R^2 = .24$ ) with a medium effect size ( $f^2 = .32$ ). IPV also significantly predicted Adult Attachment Avoidance (beta = .44,  $t = 4.20$ ,  $p < .05$ ), explaining 19% of the variance in Adult Attachment Avoidance ( $R^2 = .19$ ) with a medium effect size ( $f^2 = .23$ ). It appears that while adult attachment can significantly predict IPV victimization, IPV victimization can also significantly predict adult attachment.

## CHAPTER 4

### DISCUSSION

Attachment theory has been used to theorize how the intergenerational transmission of abuse (ITA) occurs, but few studies have utilized advanced statistic modeling (e.g., SEM) to examine the complex relationships between abuse and attachment to test the ability of attachment theory to predict the ITA. The purpose of the current study was to test a statistical model of the attachment theory of ITA by examining the role of childhood and adult attachment in transmitting the ITA and predicting symptoms of distress. In the proposed model, it was hypothesized that direct and/or indirect childhood victimization by one's parent(s) (i.e., physical child abuse, sexual child abuse, parental IPV) would be transmitted to adult IPV victimization through insecure attachment relationships in childhood (with one's parents) and adulthood (with one's partner). Furthermore, adult attachment anxiety and avoidance were hypothesized to predict anxiety-related and avoidance-related distress, respectively; some symptoms of distress (i.e., depression) were hypothesized to be predicted by both attachment anxiety and avoidance. Variance-based structural equation modeling (i.e., PLS path analysis) was used to analyze the proposed model.

#### Goodness of Model Fit

The proposed model demonstrated a substantial fit (GoF = .44), but some of the critical pathways in the model (e.g., from childhood attachment to adult attachment) were not significant. However, by trimming the non-significant pathways (e.g., Childhood Attachment with Mother to the adult attachment constructs), the significance of other pathways improved (e.g., Childhood Attachment with Father to the adult attachment constructs) thereby producing a reduced model with more predictive relevance and still a substantial fit (GoF = .40). Although

the reduced model lost 4% of achievable fit compared to the proposed model, the reduced model achieved all significant pathways and increased predictive relevance.

It appears that some achievable fit was lost in the reduced model when Childhood Attachment with Mother was eliminated. Eliminating Childhood Attachment with Mother also caused elimination of its predictor variables (Childhood Abuse by Mother and Mother IPV Perpetration) since they were not connected to the model by any other pathways. This reduced the GoF value because Childhood Attachment with Mother demonstrated large predictive relevance (i.e., it was significantly predicted by Childhood Abuse by Mother and Mother IPV Perpetration), and had the highest values for  $R^2$  and sum of indicator communalities of all the latent variables in the model. Since GoF is calculated using the average of  $R^2$  values and the average of sum of indicator communalities, eliminating Childhood Attachment with Mother reduced the average of both of these values, thereby reducing the GoF value. Despite the loss of a negligible percentage of fit, the reduced model still demonstrated substantial fit and better predicted the ITA through significant pathways. A discussion of the reduced model and its differences from the proposed model follows.

#### Differences between the Proposed and Reduced Models

##### *Childhood Victimization to Childhood Attachment*

Participants in the current study reported on their history of childhood victimization by each parent, including child abuse and witnessed parental IPV. In the proposed model, for each parent, it was hypothesized that maladaptive parent-child attachment would be predicted by three variables: child abuse from that parent, IPV perpetration by that parent, and IPV victimization of that parent. Results were different for mother-child attachment versus father-child attachment.

Results indicated that mother-child attachment was significantly predicted by maternal child abuse and maternal IPV perpetration (but not by maternal IPV victimization). On the other hand, father-child attachment was only predicted by paternal child abuse (and not by parental IPV perpetration of either parent). Past research has shown an association between insecure childhood attachment and both child abuse victimization (e.g., Baer & Martinez, 2006) and parental IPV (Levendosky, Huth-Bocks, & Semel, 2002; Zeanah et al., 1999). The current study supports the association between child abuse victimization and insecure parent-child attachment with the offending parent. What is curious, however, is that the only association found between parental IPV and insecure parent-child attachment was for maternal IPV perpetration and mother-child attachment. Even though fathers perpetrated significantly more IPV, their IPV perpetration was not a significant predictor of father-child attachment. Furthermore, there was no evidence of a cross-over effect of paternal IPV perpetration affecting the mother-child attachment, or vice versa.

There could be several potential explanations for why parental IPV findings were different for mothers and fathers. One potential explanation for why paternal IPV perpetration was not a significant predictor of father-child attachment could be that it shared a lot of variance with paternal child abuse and did not contribute enough unique variance to father-child attachment. Past research indicates that parental IPV and child abuse often co-occur (e.g., Appel & Holden, 1998; Margolin, Gordis, Medina, & Oliver, 2003). Similarly, exploratory analysis in the current study revealed that paternal IPV perpetration significantly predicted paternal child abuse. It appears that “direct” victimization by one’s father (i.e., child abuse) might play a more important role in father-child attachment than “indirect” victimization (i.e., father perpetrating IPV). Furthermore, the “direct” victimization by fathers included significantly more sexual abuse

than did the direct victimization by mothers. Perhaps the egregious acts by fathers of sexual abuse overshadowed the effects of their IPV perpetration on the father-child attachment.

Another possibility for the current findings is that the time spent with each parent could have played a role in how strongly IPV impacted the parent-child attachment. For example, if parental separation occurred (which could be likely with the presence of child abuse and parental IPV), the participant may have been likely to reside with her mother. Residing with one parent longer than the other could provide more opportunities to witness that parent cycle through additional abusive relationships, which is common with IPV. If participants resided with their mothers and witnessed their mothers in multiple abusive relationships, perhaps the cumulative impact of maternal IPV on childhood attachment was stronger than the impact of paternal IPV. Mothers in abusive relationships (and perhaps particularly those who “fight back”) may be less available and responsive to their children, thereby impacting the mother-child attachment. Although mothers may try to counteract the negative impacts of parental IPV on their children, there appears to be a negative impact on the mother-child relationship despite their efforts to compensate (Holden & Ritchie, 1991; Levendosky, Huth-Bocks, Shapiro, & Semel, 2003). Furthermore, since mothers spend significantly more time caregiving for children, perhaps the impact of parental IPV is stronger on the mother-child attachment as opposed to the father-child attachment.

Lastly, participants could have internalized society’s tendency to blame mothers for childhood adversity (Caplan & Hall-McCorquodale, 1985; Radford & Hester, 2001). Participants could have blamed their mothers for the presence of parental IPV despite the fact that fathers perpetrated significantly more IPV than mothers in the current study. If they blamed their

mothers for the parental IPV, maybe an impact would only be seen in the mother-child attachment and not the father-child attachment.

### *Childhood Attachment to Adult Attachment*

According to attachment theory, humans' attachment needs and behaviors exist "from the cradle to the grave" (Bowlby, 1979, p. 129). Hazan and Shaver (1987, 1994) theorized that internal working models of childhood attachment continue to guide close relationship behavior throughout life, such that the history of interactions with one's caregiver in childhood may produce a trait-like "style" for involvement in romantic relationships. Retrospective self-reports of childhood attachment to one's parent(s) have been found to predict adult romantic attachment (Styron & Janoff-Bulman, 1997). It appears that the internal working models that are fostered by childhood attachment may carry into adulthood and impact one's adult attachment with romantic partners. Other researchers caution that the adult romantic attachment bond does not develop directly out of the individual's parent-child attachment behavioral system. Rather, the adult romantic attachment bond may develop through a complex systemic process involving coordination and organization of many behavioral systems, perhaps involving a developmental pathway from early parent-child attachment, through peer affectional bonds, to adult romantic bonds (Marvin & Britner, 1999).

Although the purpose of current study was not to examine the developmental pathway of attachment across the lifespan, the relationship between childhood and adult romantic attachment was of interest. Results supported a predictive relationship between father-child attachment and adult romantic attachment. That is, in a sample of IPV victims, attachment was transmitted from childhood to adulthood, but only through father-child attachment and not mother-child attachment. While both mother-child and father-child attachments were significantly predicted

by victimization from that parent as hypothesized, only Childhood Attachment with Father was able to, in turn, predict adult romantic attachment variables (anxiety and avoidance).

There may be multiple explanations for why father-child attachment was predictive of adult attachment in the current study but mother-child attachment was not. First, perhaps childhood attachment relationships are internalized into gender-specific internal working models of self-in-relation to others. If the majority of women in the current study were heterosexually oriented (which was not assessed), then maybe the male-female composition of father-daughter attachment played more of a role in the formation of their romantic attachment to male partners in adulthood. That is, perhaps heterosexual women internalize models of themselves in relation to males from father-child attachment experiences in childhood.

Another possible reason why father-child attachment was the sole predictor of adult romantic attachment could be because fathers victimized participants more (e.g., sexual abuse, IPV perpetration) than mothers did, which could impact the parent-child attachment more. Since all women in the current study were romantically paired with abusive partners, perhaps the father-child attachment relationship had more in common with their adult romantic attachment relationships than did the mother-child attachment. Typically, what distinguishes adult romantic attachments from parent-child attachments is the reciprocal nature of the comforting or caregiving, and the addition of sexual intimacy. Since fathers in the current study perpetrated significantly more sexual abuse, perhaps the lines between father-child and adult romantic attachment were more blurred. That is, maybe there was more of a crossover in the constructs of father-child and adult romantic attachment due to the inappropriate presence of sexual intimacy in the father-child relationship.

Although results support the transmission of attachment from childhood to adulthood, it should be noted that father-child attachment explained only a small percent of variance in each adult attachment variable. This is consistent with the notion that adult romantic attachment may not develop solely out of parent-child attachment. There may be several other variables not examined in the current study that impact the pathway from childhood to adult romantic attachment.

Another possible explanation for why father-child attachment was only able to explain a small percent of variance in adult attachment could be that IPV victimization played a larger role in impacting adult romantic attachment. Exploratory analysis did reveal that IPV victimization was a significant predictor of adult romantic attachment. It appears that IPV victimization and adult romantic attachment may have a bi-directional relationship. Perhaps one would find a stronger predictive relationship between childhood and adult romantic attachment if adult romantic attachment was measured prior to the IPV victimization. Although it may be difficult to research, having pre- and post measure of adult romantic attachment before and after IPV victimization would allow one to isolate the effects of the trauma on adult romantic attachment.

#### *Adult Attachment to IPV Victimization*

In the current study, adult romantic attachment was modeled to predict IPV in order to test the hypothesis that ITA is transmitted through attachment. That is, it was theorized that as a result of childhood victimization, insecure parent-child attachment would form and then predict insecure adult romantic attachment, leaving one vulnerable to IPV victimization. Results of the reduced model supported this hypothesis, whereby IPV Victimization was significantly predicted by Adult Attachment Anxiety and Adult Attachment Avoidance. The current study suggests that

childhood abuse by one's father predicts maladaptive father-child attachment, which in turn predicts insecure adult romantic attachment, thereby leaving one at risk for IPV victimization.

Although the current study examined adult attachment as a predictor of IPV victimization, it was suspected that the relationship between adult attachment and IPV was bidirectional, such that IPV also has an effect on adult attachment. It was not modeled as bidirectional in the current study because bidirectional relationships cannot be modeled using PLS path analysis. Since the current study aimed to test the attachment theory of the ITA by evaluating if attachment could predict IPV victimization, it was more important to model the pathway from adult attachment to IPV victimization. Nonetheless, exploratory analysis suggested that the relationship is bidirectional, evidenced by the finding that IPV is also a significant predictor of adult romantic attachment.

In sum, there appears to be support for the attachment theory of the ITA. The current study supports a model in which paternal child abuse predicts insecure father-child attachment, which in turn predicts insecure adult romantic attachment. One's insecure adult romantic attachment, in turn, predicts IPV victimization. Although not modeled in the current study, exploratory analyses suggest that IPV victimization may also play a powerful role in impairing adult romantic attachment.

### *Symptoms*

Another important part of the current study was examining the symptoms of distress that are experienced from the ITA. It was hypothesized that symptoms of distress would be predicted by both IPV victimization and adult attachment, with a different cluster of symptoms seen for each adult attachment dimension. That is, it was hypothesized that Anxiety-Related Symptoms would be predicted by both Adult Attachment Anxiety and IPV Victimization. Similarly, it was

hypothesized that Avoidance-Related Symptoms would be predicted by both Adult Attachment Avoidance and IPV Victimization. Results of the reduced model indicated that symptoms of distress were only predicted by their respective adult attachment variable and not *IPV victimization*.

The adult attachment dimensions, however, did appear to predict different clusters of symptoms, which is consistent with prior research. Anxiety-Related Symptoms were significantly predicted by Adult Attachment Anxiety. Adult attachment anxiety is often characterized by a negative model of self and fears about abandonment. Therefore, it appears that these internal working models manifest in symptoms such as anxious arousal, tension reduction behavior, impaired self-reference, anger / irritability, and Borderline Personality traits. When someone has a negative model of self and fears abandonment, they may have difficulty maintaining a clear sense of identity and may be preoccupied with securing affection from others. As such, they may experience high anxiety, anger and irritability, and spells of dejection and apathy. They may respond to these experiences with behaviors often characteristic of borderline personality, including self-mutilation, suicidal thoughts and behaviors, and demonstration toward others of rage, love, and guilt.

Avoidance-Related Symptoms were significantly predicted by Adult Attachment Avoidance. Adult attachment avoidance is often characterized by a malevolent model of others and discomfort with interpersonal closeness. Therefore, it appears that these internal working models manifest in symptoms such as Avoidant Personality traits and somatization. That is, someone with a malevolent model of others and discomfort with interpersonal closeness may exhibit avoidant traits and distance themselves from others because of anticipation of painful and humiliating experiences. By actively withdrawing, they can protect themselves in spite of deep

desires to be close to others. Perhaps someone high in attachment avoidance who avoids interpersonal closeness and withdraws during interpersonal conflict may also be likely to avoid their own psychic distress by expressing it through somatic or physical channels. That is, they may externalize their distress. The finding that attachment avoidance was predictive of somatization is consistent with prior research that found an association between attachment avoidance and externalizing disorders such as somatization, dissociation, and substance abuse (Anderson & Alexander, 1996; Brennan & Shaver, 1995/1998; Brennan, Shaver, & Tobey, 1991; Carnelley, Peitromonaco, & Jaffe, 1994; Diehl et al., 1998; Mickelson, Kessler, & Shaver, 1997; Mikulincer, Florian, & Weller, 1993; Onishi et al., 2001; Riggs et al., 2007).

Contrary to hypotheses, symptoms of distress were not significantly predicted by IPV victimization. One possible explanation for why IPV victimization did not predict symptoms of distress is that the symptoms measured in the current study could have been longstanding symptoms that were present prior to the IPV victimization. Symptoms in the current study were measured by the Trauma Symptom Inventory (TSI) and the MCMI-III, both of which have subscales that measure longstanding symptoms or personality patterns. The author of the TSI notes that the TSI measures not only symptoms associated with PTSD, but also intra- and interpersonal difficulties often associated with more chronic psychological trauma (e.g., complex PTSD and borderline personality traits). In the psychometric validation of the TSI, TSI scales identified 89% of those independently diagnosed with borderline personality disorder in a psychiatric inpatient sample. Similarly, the MCMI-III is well known for its strength in measuring personality pathology, such as the Borderline Personality and Avoidant Personality scales used in the current study. Since the symptoms measured in the current study may be more longstanding patterns, perhaps they are tapping into complex PTSD—a disorder resulting from

chronic trauma and revictimization, particularly of a relational nature (Herman, 1992). Indeed, participants in the current study survived relational trauma in childhood and adulthood, and likely experienced additional traumas not assessed in the current study (e.g., multiple abusive romantic relationships, sexual assault, etc.). Furthermore, it appears that the symptoms of distress measured in the current study overlap with several of the criteria for complex PTSD. Complex PTSD has been proposed to include impairment in: 1) regulation of affect and impulses, 2) attention and consciousness, 3) self perception, 4) relations with others, 5) somatic functioning (i.e., somatization), and 6) systems of meaning (e.g., hopelessness) (Pelcovitz et al., 1997). Similarly, symptoms of distress measured in the current study included Anxiety-Related Symptoms (i.e., borderline personality traits, impaired self-reference, anger/irritability, anxious arousal, and tension-reduction behavior such as self-mutilation, angry outbursts, and suicide threats) and Avoidance-Related Symptoms (i.e., somatoform and Avoidant personality traits). Symptoms that result from chronic relational trauma, such as those of complex PTSD, are perhaps better predicted by adult romantic attachment than by recent victimization because adult attachment taps into the core maladaptive internal working models of self, others, and self-other relationships that often underlie complex PTSD. Perhaps these malevolent internal working models and related interpersonal difficulties were present (to some degree) prior to the recent IPV victimization. On the other hand, recent victimization could be related more to symptoms that can be defined as “states” rather than “traits.” That is, recent IPV victimization could be correlated with “states” of PTSD (i.e., increased arousal, intrusive experiences, and defensive avoidance), rather than with “traits” of complex PTSD such as personality dysfunction.

## Implications of Findings

### *Theoretical Implications*

The current study has several theoretical implications. The intergenerational transmission of abuse appears to be a complex phenomenon with many factors at play. The current study lends support to the attachment theory of the ITA by demonstrating significant prediction of the ITA through insecure attachment in childhood and adulthood. The current study suggests that father-child attachment may play a more important role than mother-child attachment in the transmission of attachment and abuse (particularly in families where fathers perpetrate more child abuse and IPV than mothers). Furthermore, direct victimization by fathers (i.e., child abuse) may play a stronger role in the ITA than indirect victimization (i.e., parental IPV).

Although it was statistically significant, the weakest part of the model was the ability of childhood attachment to predict adult romantic attachment. This finding might be explained by the fact that childhood and adult attachment are different constructs that are not always correlated (see Cassidy, 2000, for a discussion of continuity versus discontinuity of attachment). Adult romantic attachment appears to involve the interplay of three behavioral systems (attachment, caregiving, and sex), each serving a different function and having a different developmental trajectory (Hazan & Shaver, 1987; Fraley and Shaver, 2000). Therefore, an individual's adult romantic attachment may only partly reflect experiences in childhood attachment. Furthermore, there are likely other variables that influence the pathway from childhood to adult romantic attachment. Marvin and Britner (1999) suggest that peer affectional bonds may be a phase in the development of attachment across the lifespan in between that of childhood attachment and adult romantic attachment. In addition, non-attachment related

variables may also influence the pathway from childhood to adult romantic attachment, such as emotion regulation, coping responses, and interpersonal functioning (Riggs, 2010).

Another consideration is that IPV victimization could have such a profound effect on adult romantic attachment that the impact of childhood attachment becomes less significant. Without isolating the impact of IPV victimization on adult attachment (e.g., with pre- and post-victimization assessment of adult attachment), it may be difficult to accurately evaluate the predictive ability of childhood attachment on adult romantic attachment in a sample of recently victimized adults. Further research is needed to examine the pathway from childhood to adult attachment in those with and without trauma, as these pathways may be different.

The current study also highlighted the importance of examining the two dimensions of adult attachment separately. Results indicated that adult attachment anxiety and adult attachment avoidance predict different types of symptoms. Many researchers use categorical measurements of adult attachment or simply compare secure to insecurely attached individuals; however, it appears important to examine attachment anxiety and avoidance individually, particularly when evaluating psychological functioning or symptoms of distress.

### *Clinical Implications*

Attachment theory is useful in understanding how the ITA is predicted, and therefore also useful in planning interventions. While the victim of abuse is *never* to blame, it is still beneficial to examine risk factors that leave someone vulnerable to re-victimization. Identifying risk factors is an important step in the process of empowering individuals to protect themselves. The current study suggests that insecure childhood and adult attachment may predict re-victimization. It follows that those with insecure attachment may benefit from intervention focused on enhancing

one's protective factors. Therapeutic intervention (especially following trauma) that aims to increase attachment security may serve as a particularly important intervention.

Similarly, since adult romantic attachment predicted symptoms of distress, intervention that increases attachment security and benevolent internal working models of self and others may assist in symptom relief. Survivors of ITA may present with different clinical symptoms depending on if they have high adult attachment anxiety, high adult attachment avoidance, or both. As such, a client's symptom presentation may have clinical implications for treatment planning. For example, those with anxiety-related symptoms (i.e., anxious arousal, borderline personality traits, anger and irritability, impaired self-reference, and tension-reduction behavior) may have a need for increasing positive internal working models of self, while those with avoidance-related symptoms (e.g., avoidant personality traits, and somatization) may benefit from increasing positive internal working models of others.

#### Limitations of the Current Study

The current study has several methodological limitations. First, all of the measures in the current study were self-report and therefore limited to participants' perceptions and vulnerable to response bias (particularly for measures without validity scales). Furthermore, participants were asked to retrospectively report on their childhood experiences, which may or may not be less accurate. Regarding the measurement of childhood abuse, the current study only assessed physical and sexual abuse and did not measure emotional abuse, emotional neglect, or physical neglect.

The current study was also limited to the examination of a specific type of ITA—childhood abuse victimization by one's parent(s) to adult IPV victimization. Other types of ITA (e.g., childhood abuse victimization to abusive parenting in adulthood) were not examined. Also,

the study did not examine the impact of other childhood traumas (e.g., child abuse from those other than parents) or other adult traumas (e.g., sexual assault, recurrent abusive romantic relationships).

The findings of the current study may only be generalizable to those from a similar population. Participants in the current study were adult females, who grew up in two-parent households, and were seeking services for IPV victimization. Furthermore, the participants appeared to be “battered women”—victims of a specific type of IPV known as intimate terrorism in which the victim remains largely non-violent while her partner is abusive and controlling.

#### Future Directions

There are many directions for future research that can add clarity to the Attachment theory of the ITA. Continued studies that employ advanced statistical techniques such as structural equation modeling are recommended to help elucidate the complex relationships involved in the ITA. It is suggested that future research examine the developmental pathway from childhood attachment to adult romantic attachment to investigate possible mediating and moderating variables. In addition, it may be beneficial to examine the contribution of childhood attachment in predicting adult attachment at both pre- and post-IPV victimization. This may help to investigate if childhood attachment has a stronger ability to predict adult attachment at pre-victimization, and if IPV victimization contributes a unique impact on adult attachment. A longitudinal or cross-sectional study may be able to achieve this.

Future studies should also explore the relationship between the ITA, attachment, and complex PTSD. The current study did not formally measure complex PTSD; however, findings suggest that complex PTSD may be an important outcome variable to examine when investigating the ITA. Furthermore, researchers examining chronic trauma survivors may want to

investigate if complex PTSD symptoms are tied more closely to attachment (and internal working models), than to a particular traumatic event. As such, it is recommended that future researchers use separate latent variables for “state” symptoms (e.g., PTSD) versus “trait” symptoms (complex PTSD, borderline personality traits) in order to evaluate if these are predicted by different variables.

Researchers who conduct similar studies can also aim to compensate for the limitations of the current study. For example, research that includes measures other than self-report (e.g., semi-structured interviews, observations) may be more robust. Avoiding use or reliance on self-reports may require a longitudinal design if one still wants to gather intergenerational data. For example, one could use the Strange-Situation to measure parent-infant attachment and the Adult Attachment Interview (AAI) to measure later adult attachment state-of-mind in adulthood. Using one or both of these could enhance the strength of measurement model, and also may produce different results. Adding the AAI as measure of adult attachment would allow one to examine what role adult attachment state-of-mind plays in the ITA, and how it may differ from the role of adult romantic attachment. Furthermore, since the AAI has been shown to predict parent-child attachment with one’s own child, adding the AAI could also be useful in examining the role of attachment in other types of ITA, such as when an adult survivor of childhood victimization becomes an abusive parent (ITA-CA). Future research is also needed to examine the type of ITA in which an adult survivor of childhood victimization becomes a perpetrator of IPV (ITA-IPV). Ideally, a comprehensive research study would simultaneously examine all three types of ITA, and the role that childhood attachment, adult romantic attachment, and adult attachment state-of-mind play in each type of ITA.

Future researchers may also want to examine additional types of childhood abuse including emotional abuse, emotional neglect, and physical neglect and assess the impact of other traumas (e.g., child abuse by a non-parent or sexual assault) on the ITA. It is also recommended that the current study be replicated with various populations (e.g., males, those who grew up in single-parent households, and those that were victims of various forms IPV) to determine the generalizability of the findings. Lastly, the current study did not directly assess perpetrators of IPV, which is needed to more closely examine the important role they play in the ITA.

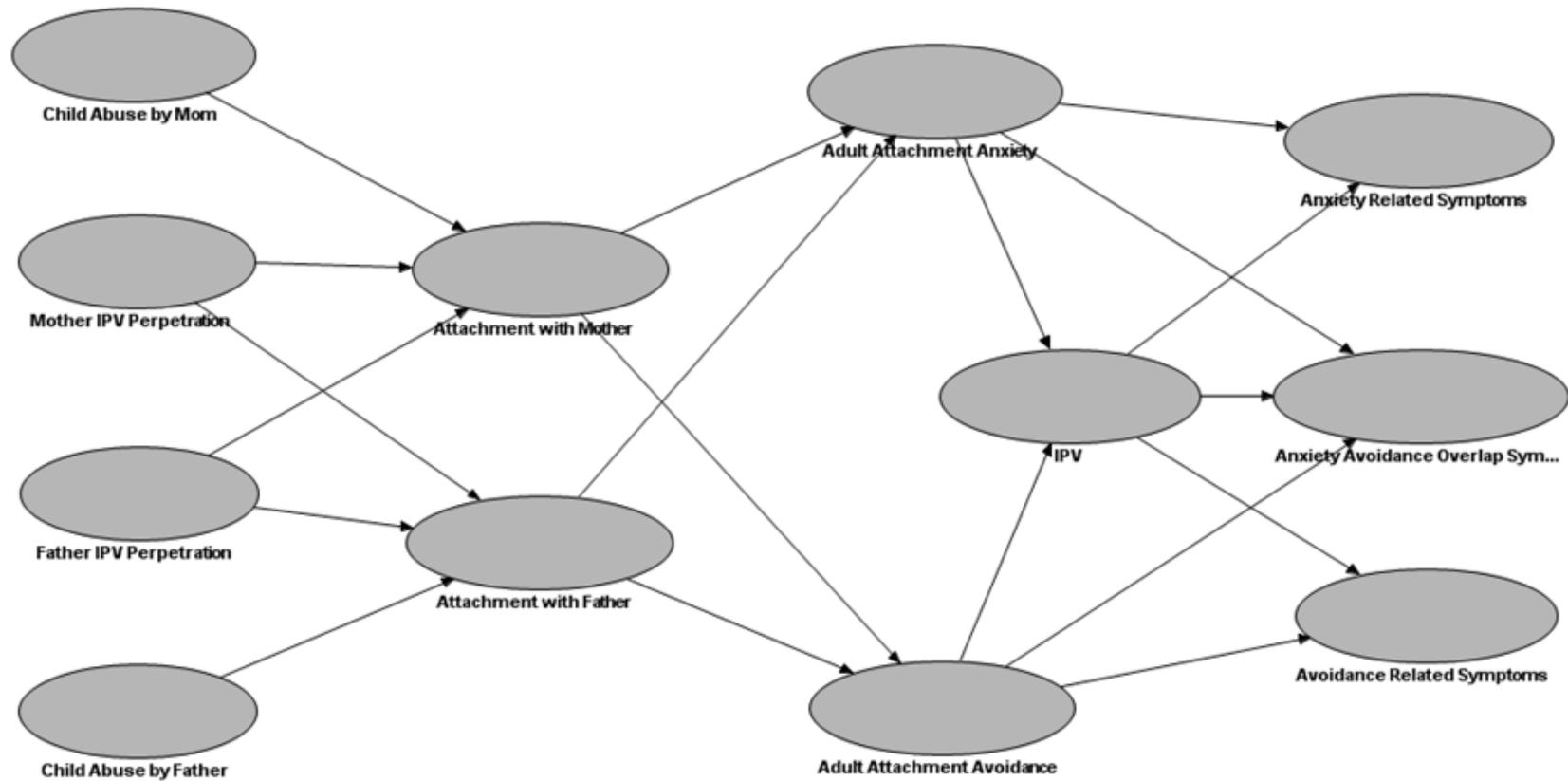


Figure 1. Proposed inner model.

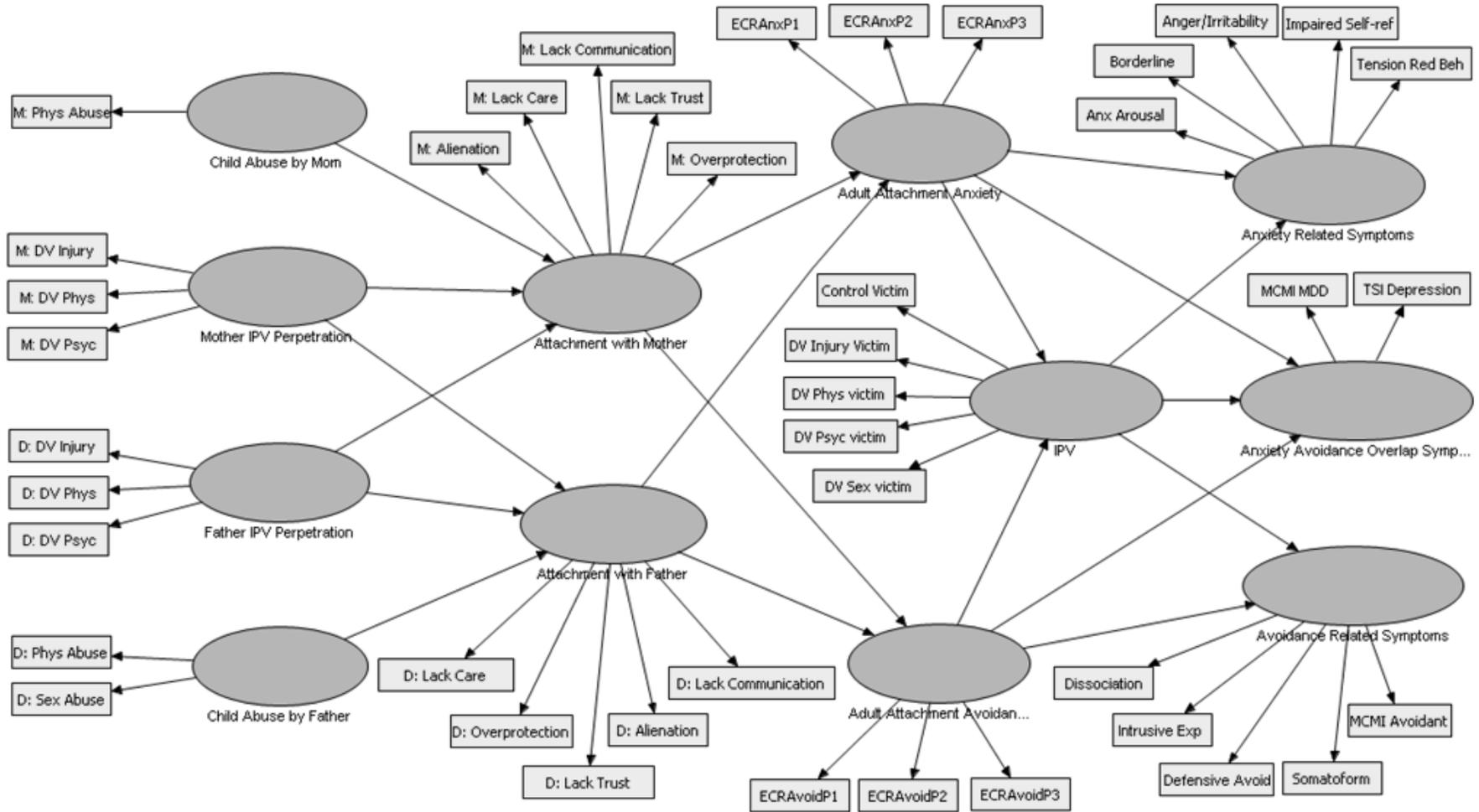


Figure 2. Proposed outer measurement model with indicators.

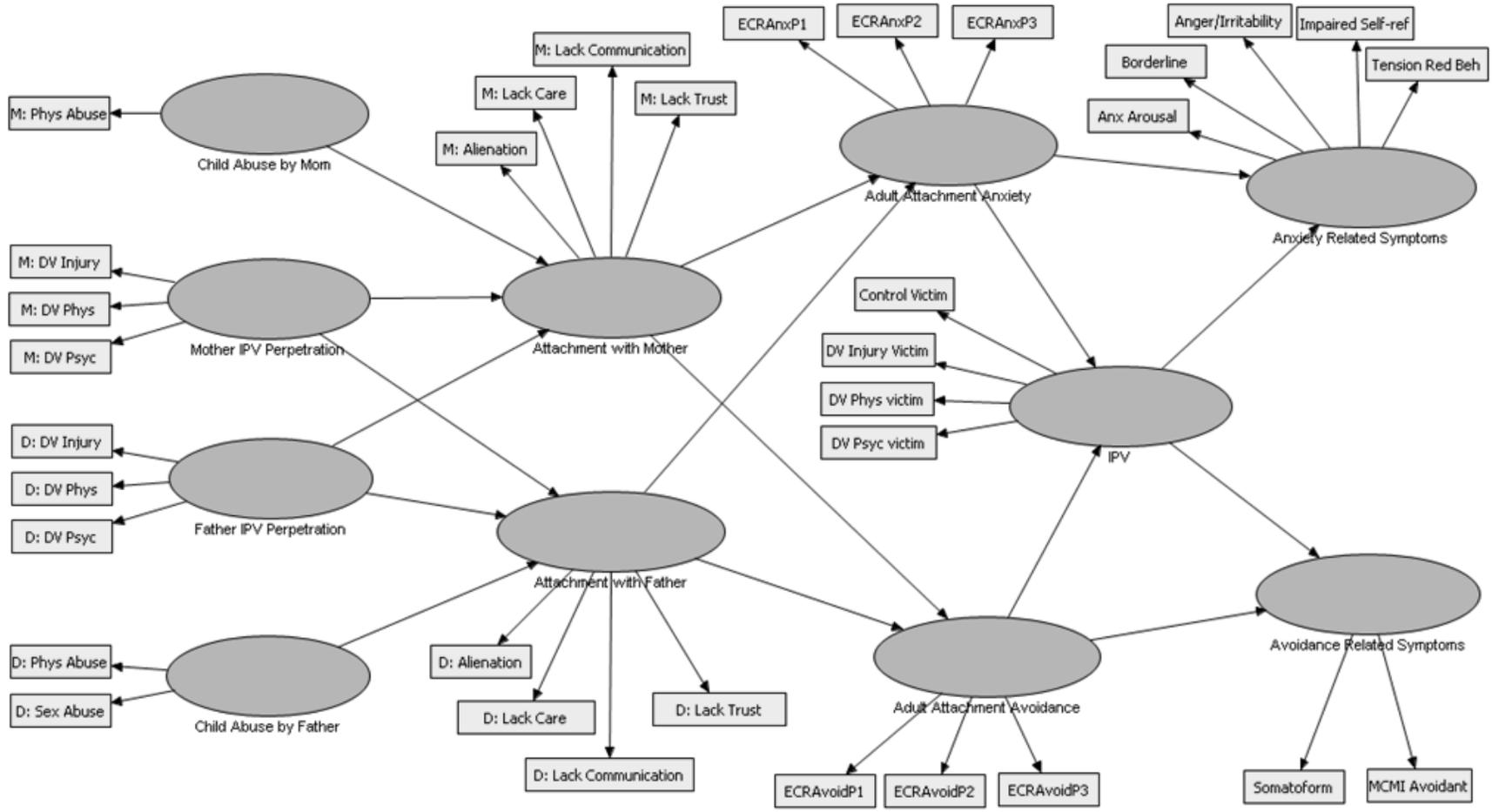


Figure 3. Revised outer measurement model with indicators.

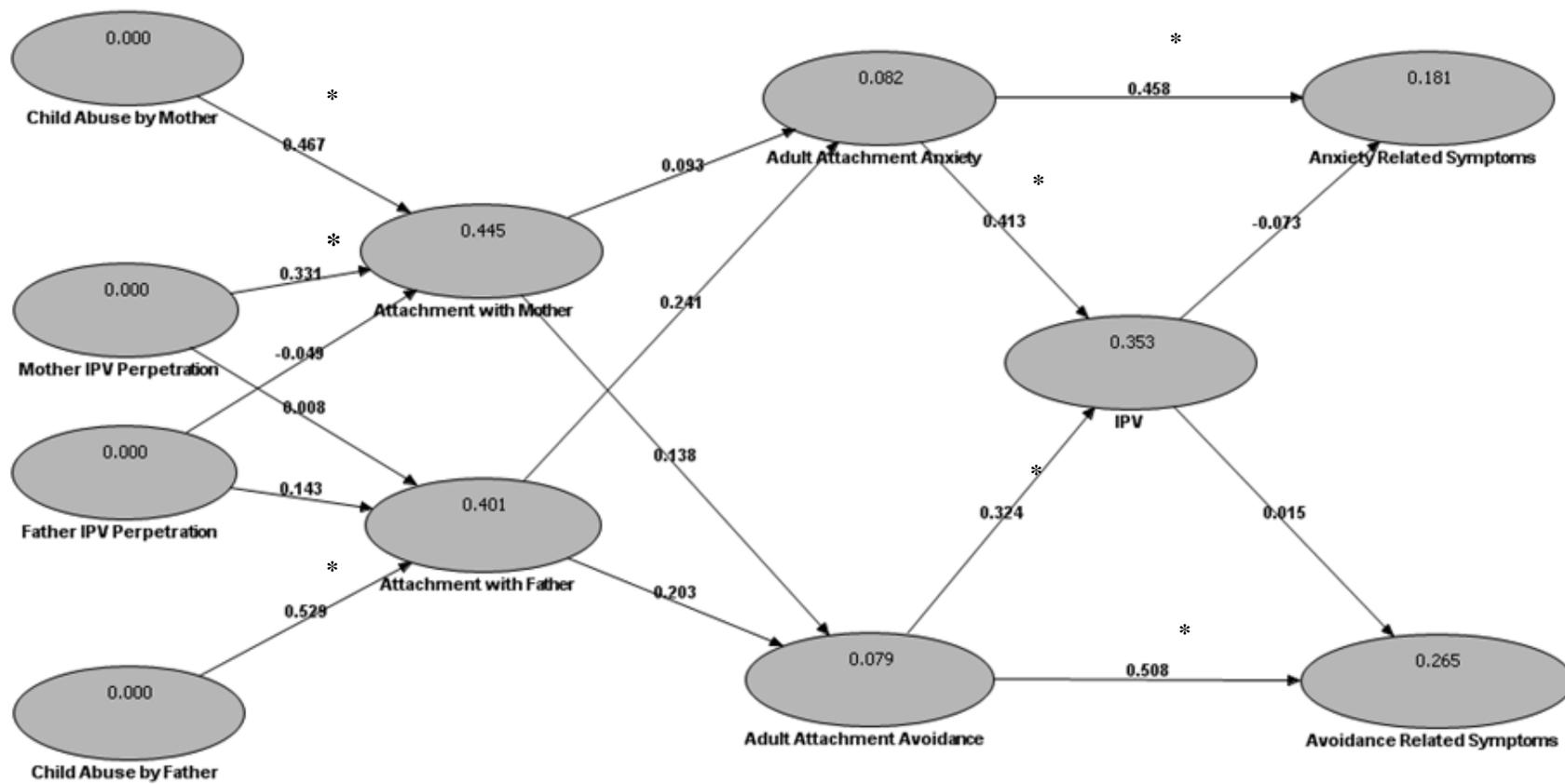


Figure 4. Proposed model with R<sup>2</sup> values and path coefficients.  
 \*  $p < .05$ , one-tailed

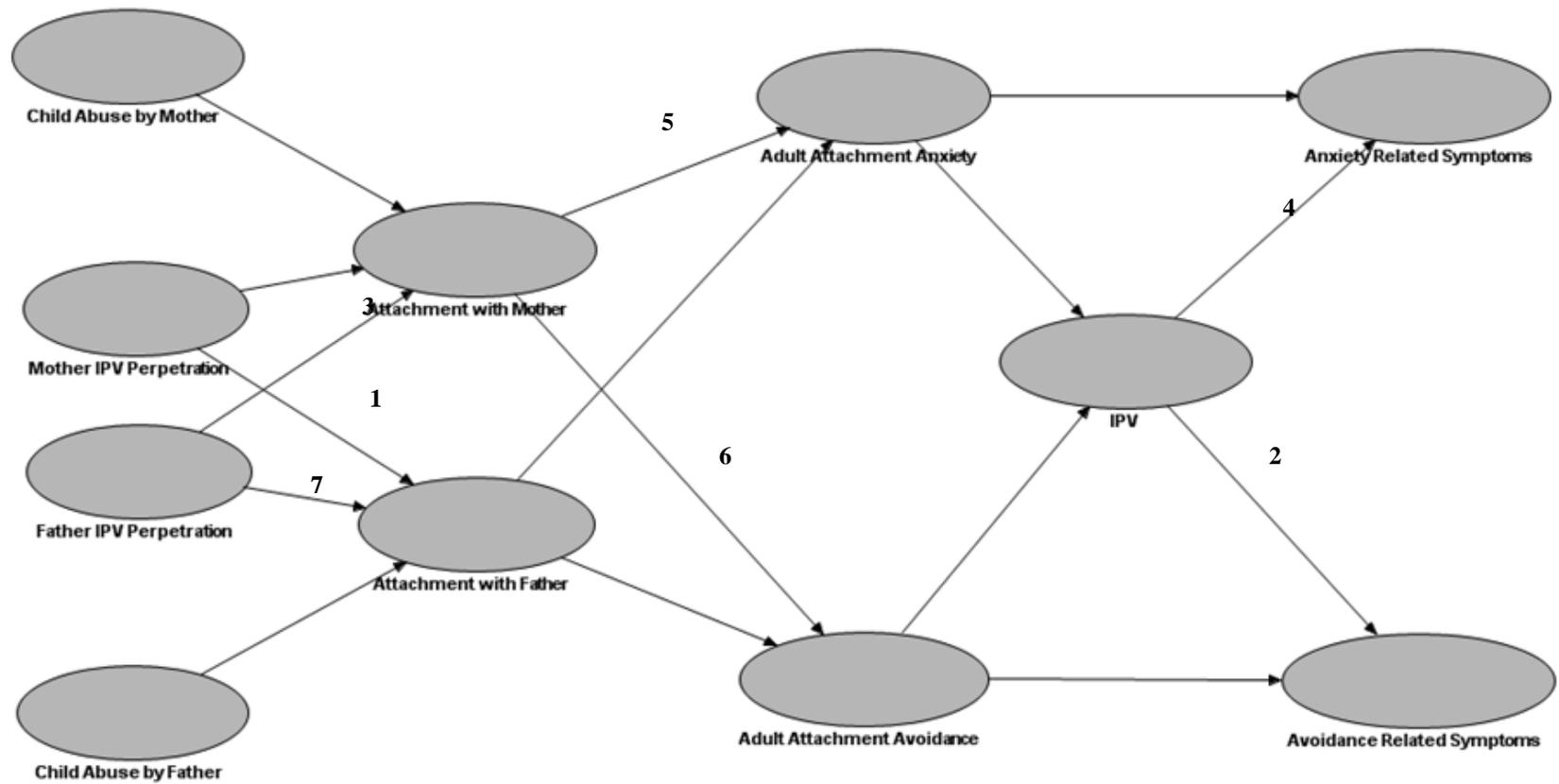


Figure 5. Order pathways were eliminated in the model trimming process.

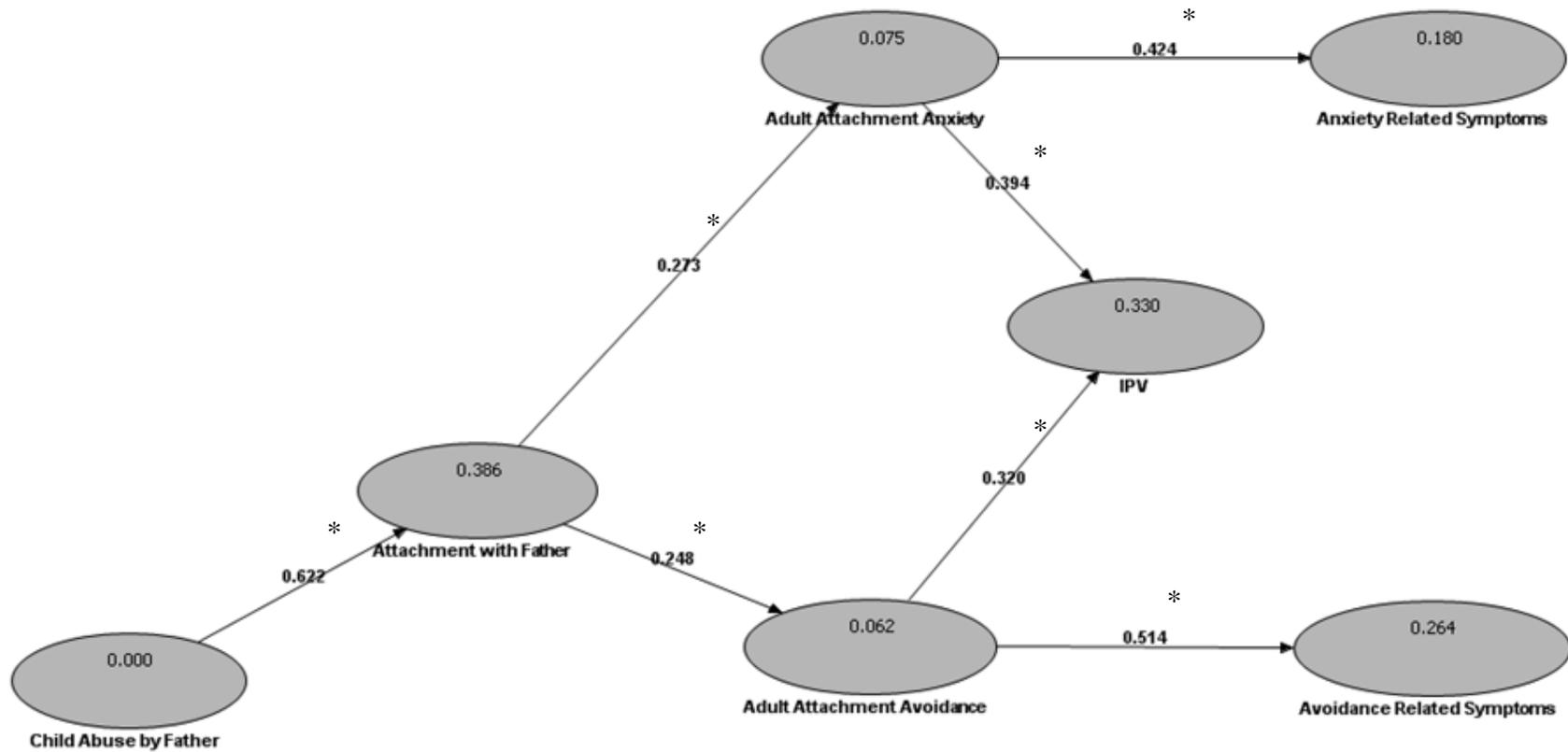


Figure 6. Reduced model with  $R^2$  values and path coefficients.  
 \*  $p < .05$ , one-tailed.

Table 1

*Descriptive Statistics for the Sample*

Variable	<i>M</i>	<i>SD</i>	Range
Age in years	36.61	11.81	18 – 62
Yearly income	20,063.78	26,609.99	0 -- 135,000

Table 2

*Descriptive Frequencies for the Sample*

	Variable	<i>n</i>
Ethnicity	Asian American	0
	African American	10
	Caucasian	36
	Hispanic	7
	Biracial	4
	Other	1
Marital status	Never married	13
	Married / Partnered	7
	Separated	15
	Divorced	19
	Widowed	2
	Other	2
Current relationship status	Single, not dating	25
	Single, dating casually	7
	Single, dating seriously	5
	Living together / engaged	5
	Married / partnered	5
	Separated	8
Employment	Other	4
	Not employed	32
	Part-time	7
Student	Full-time	20
	Not a student	46
	Part-time student	2
	Full-time student	11

*(table continues)*

Table 2 (continued).

	Variable	<i>n</i>
	8 <sup>th</sup> grade	1
	9 <sup>th</sup> grade	1
	10 <sup>th</sup> grade	1
	11 <sup>th</sup> grade	1
	High school diploma or GED	5
Highest degree	Some college	15
	Technical / trade school diploma	16
	Community college degree	4
	University degree	5
	Advanced degree	7
	Other	4
	Intimate partner violence victimization	59
Reasons for seeking services at the trauma clinic (not mutually exclusive)	Childhood abuse	28
	Sexual assault	17
	Secondary victimization	21
	Mandated parenting classes	5
	3 months or less	27
Length in services at the trauma clinic	3-9 months	15
	Approximately 1 year	7
	Approximately 2 years	2
	3+ years	5
	Not attending therapy	7
	3 months or less	28
Length in therapy services at the trauma clinic	3-9 months	12
	Approximately 1 year	7
	Approximately 2 years	2
	3+ years	2

Table 3

*Reliability of the Proposed Measurement Models (PLS Estimation)*

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Child Abuse by Mother <sup>c</sup>		--	--
Child Abuse by Father		.83	.60
Physical Abuse	.91		
Sexual Abuse	.77		
Mother IPV Perpetration		.85	.77
Causing Injury	.69		
Physical Assault	.86		
Psychological Aggression	.87		
Father IPV Perpetration		.88	.85
Causing Injury	.77		
Physical Assault	.86		
Psychological Aggression	.91		
Childhood Attachment with Mother		.92	.88
Alienation	.85		
Lack of Care	.95		
Lack of Communication	.94		
Lack of Trust	.98		
Overprotection	.35		

*(table continues)*

Table 3 (*continued*)

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Childhood Attachment with Father		.92	.89
Alienation	.72		
Lack of Care	.90		
Lack of Communication	.91		
Lack of Trust	.95		
Overprotection	.67		
Adult Attachment Anxiety		.94	.91
Attachment Anxiety Parcel 1	.93		
Attachment Anxiety Parcel 2	.91		
Attachment Anxiety Parcel 3	.91		
Adult Attachment Avoidance		.96	.93
Attachment Avoidance Parcel 1	.94		
Attachment Avoidance Parcel 2	.95		
Attachment Avoidance Parcel 3	.93		
Intimate Partner Violence Victimization		.81	.76
Control Tactics	.86		
Injury	.62		
Physical Assault	.61		
Psychological Aggression	.77		
Sexual Coercion	.48		

*(table continues)*

Table 3 (*continued*)

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Anxiety-Related Symptoms		.89	.86
Anger/Irritability	.75		
Anxious Arousal	.77		
Borderline Personality	.77		
Impaired Self-Reference	.89		
Tension Reduction Behavior	.76		
Anxiety/Avoidance Overlap Symptoms		.91	.80
MCMJ Major Depression	.93		
TSI Depression	.89		
Avoidance-Related Symptoms		.79	.81
Avoidance Personality	.91		
Defensive Avoidance	.52		
Dissociation	.54		
Intrusive Experiences	.44		
Somatoform	.84		

<sup>a</sup> Factor loading  $\geq .55$  is adequate. <sup>b</sup> Composite reliability and Cronbach's alpha  $\geq .70$  is adequate. <sup>c</sup> Single indicator construct.

Table 4

*Reliability of the Revised Measurement Models (PLS Estimation)*

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Child Abuse by Mother <sup>c</sup>		--	--
Child Abuse by Father		.83	.60
Physical Abuse	.91		
Sexual Abuse	.77		
Mother IPV Perpetration		.85	.77
Causing Injury	.69		
Physical Assault	.86		
Psychological Aggression	.87		
Father IPV Perpetration		.88	.85
Causing Injury	.77		
Physical Assault	.86		
Psychological Aggression	.91		
Childhood Attachment with Mother		.97	.95
Alienation	.86		
Lack of Care	.96		
Lack of Communication	.94		
Lack of Trust	.97		

*(table continues)*

Table 4 (*continued*)

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Childhood Attachment with Father		.94	.91
Alienation	.73		
Lack of Care	.92		
Lack of Communication	.94		
Lack of Trust	.95		
Adult Attachment Anxiety		.94	.91
Attachment Anxiety Parcel 1	.93		
Attachment Anxiety Parcel 2	.91		
Attachment Anxiety Parcel 3	.91		
Adult Attachment Avoidance		.96	.93
Attachment Avoidance Parcel 1	.94		
Attachment Avoidance Parcel 2	.95		
Attachment Avoidance Parcel 3	.93		
Intimate Partner Violence Victimization		.82	.79
Control Tactics	.89		
Injury	.63		
Physical Assault	.62		
Psychological Aggression	.76		

*(table continues)*

Table 4 (*continued*)

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Anxiety-Related Symptoms		.89	.86
Anger/Irritability	.75		
Anxious Arousal	.76		
Borderline Personality	.77		
Impaired Self-Reference	.89		
Tension Reduction Behavior	.76		
Avoidance-Related Symptoms		.88	.75
Avoidant Personality	.94		
Somatoform	.84		

<sup>a</sup> Factor loading  $\geq .55$  is adequate. <sup>b</sup> Composite reliability and Cronbach's alpha  $\geq .70$  is adequate. <sup>c</sup> Single indicator construct.

Table 5

*Validity of the Revised Measurement Models (PLS Estimation)*

Construct/Indicator	Convergent Validity		Discriminant Validity	
	AVE <sup>a</sup>		Fornell-Larcker <sup>b</sup>	Highest Cross Loadings <sup>c</sup>
Childhood Abuse by Mother <sup>d</sup>			--	
Childhood Abuse by Father	.71		.71 > .39	
Physical abuse				.62 < .91
Sexual abuse				.57 < .77
Mother IPV Perpetration	.66		.66 > .29	
Causing Injury				.28 < .69
Physical Assault				.50 < .86
Psychological Aggression				.57 < .87
Father IPV Perpetration	.71		.71 > .39	
Causing Injury				.36 < .77
Physical Assault				.47 < .86
Psychological Aggression				.64 < .91
Childhood Attachment with Mother	.72		.72 > .37	
Alienation				.44 < .86
Lack of Care				.58 < .96
Lack of Communication				.59 < .94
Lack of Trust				.65 < .97

*(table continues)*

Table 5 (continued)

Construct/Indicator	Convergent validity	Discriminant validity	
	AVE <sup>a</sup>	Fornell-Larcker <sup>b</sup>	Highest Cross Loadings <sup>c</sup>
Childhood Attachment with Father	.79	.79 > .39	
Alienation			.35 < .73
Lack of Care			.56 < .92
Lack of Communication			.56 < .94
Lack of Trust			.67 < .95
Adult Attachment Anxiety	.84	.84 > .26	
Adult Attachment Anxiety Parcel 1			.44 < .93
Adult Attachment Anxiety Parcel 2			.52 < .91
Adult Attachment Anxiety Parcel 3			.44 < .91
Adult Attachment Avoidance	.88	.88 > .26	
Adult Attachment Avoidance Parcel 1			.55 < .94
Adult Attachment Avoidance Parcel 2			.50 < .95
Adult Attachment Avoidance Parcel 3			.44 < .93
Intimate Partner Violence Victimization	.54	.54 > .26	
Control Tactics			.58 < .89
Injury			.51 < .63
Physical Assault			.43 < .62
Psychological Aggression			.30 < .76

(table continues)

Table 5 (continued)

Construct/Indicator	Convergent validity	Discriminant validity	
	AVE <sup>a</sup>	Fornell-Larcker <sup>b</sup>	Highest Cross Loadings <sup>c</sup>
Anxiety-Related Symptoms	.62	.62 > .32	
Anxious Arousal			.42 < .75
Anger/Irritability			.29 < .76
Borderline Personality			.58 < .77
Impaired Self-Reference			.52 < .89
Tension Reduction Behavior			.29 < .76
Avoidance-Related Symptoms	.79	.79 > .32	
Avoidant Personality			.54 < .94
Somatoform			.57 < .84

<sup>a</sup> AVE = Average variance extracted = Average of the individual indicator communalities of the construct = % of the variance of the indicators/manifest variables explained by the Latent Construct. AVE > .50 is adequate. <sup>b</sup> Correlation = highest correlation between the model constructs. AVE > Correlation<sup>2</sup> is adequate. <sup>c</sup> Highest cross loading < loading on own construct is adequate. <sup>d</sup> Single indicator construct.

Table 6

*Correlations among Latent Variables of the Proposed Model*

Construct	1	2	3	4	5	6	7	8	9	10	11
1. Childhood Abuse by Mother	1.00										
2. Childhood Abuse by Father	.62	1.00									
3. Mother IPV Perpetration	.46	.45	1.00								
4. Father IPV Perpetration	.28	.63	.46	1.00							
5. Childhood Attachment with Mother	.61	.31	.52	.23	1.00						
6. Childhood Attachment with Father	.25	.62	.31	.49	.33	1.00					
7. Adult Attachment Anxiety	.13	.25	.22	.33	.17	.27	1.00				
8. Adult Attachment Avoidance	.26	.38	.22	.22	.21	.25	.29	1.00			
9. Intimate Partner Violence	.34	.22	.24	.20	.39	.17	.51	.44	1.00		
10. Anxiety-Related Symptoms	.04	.16	.23	.29	.14	.28	.42	.12	.16	1.00	
11. Avoidance-Related Symptoms	.15	.38	.21	.40	.09	.35	.42	.51	.24	.57	1.00

Table 7

*R<sup>2</sup> and F Test Values for Endogenous Constructs in the Proposed Model*

Construct	<i>R</i> <sup>2</sup>	<i>F</i> ( <i>df</i> ) <sup>a</sup>	
Childhood Attachment with Mother	.45	14.70*	(3, 55)
Childhood Attachment with Father	.40	12.27*	(3, 55)
Adult Attachment Anxiety	.08	2.50	(2, 56)
Adult Attachment Avoidance	.08	2.40	(2, 56)
Intimate Partner Violence	.35	15.28*	(2, 56)
Anxiety-Related Symptoms	.18	6.19*	(2, 56)
Avoidance-Related Symptoms	.27	10.10*	(2, 56)

<sup>a</sup> *F* distribution values =  $(N - p - 1)(R^2)/p(1 - R^2)$ , *df* = *p*, *N* - *p* - 1, where *N* = Number of cases and *p* = number of predictors. \* *p* < 0.05.

Table 8

*The Explanation of Childhood Attachment with Mother  $R^2$  (.45) in the Proposed Model*

Construct	beta	$t^l$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Abuse by Mother	.47	4.64*	.30	.63	.29 (63.6%)	0.53
Mother IPV Perpetration	.33	3.02*	.15	.51	.17 (39.0%)	0.31
Father IPV Perpetration	-.05	0.46	-.22	.13	-.01 (2.6%)	0.02

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 9

*The Explanation of Childhood Attachment with Father  $R^2$  (.40) in the Proposed Model*

Construct	beta	$t^l$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Abuse by Father	.53	4.78*	.35	.71	.33 (82.3%)	0.55
Father IPV Perpetration	.14	1.04	-.08	.37	.07 (17.1%)	0.11
Mother IPV Perpetration	.01	0.05	-.28	.30	.00 (0.6%)	0.01

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 10

*The Explanation of Adult Attachment Anxiety  $R^2$  (.08) in the Proposed Model*

Construct	beta	$t^1$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Attachment with Mother	.09	0.62	-.15	.34	.02 (20%)	0.02
Childhood Attachment with Father	.24	1.47	-.03	.51	.06 (80%)	0.07

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 11

*The Explanation of Adult Attachment Avoidance  $R^2$  (.08) in the Proposed Model*

Construct	beta	$t^1$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Attachment with Mother	.14	0.84	-.13	.41	.03 (36%)	.03
Childhood Attachment with Father	.20	1.22	-.07	.48	.05 (64%)	.05

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 12

*The Explanation of Intimate Partner Violence Victimization  $R^2$  (.35) in the Proposed Model*

Construct	beta	$t^l$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Adult Attachment Anxiety	.41	3.68*	.23	.60	.21 (59%)	0.32
Adult Attachment Avoidance	.32	3.02*	.15	.50	.14 (41%)	0.22

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 13

*The Explanation of Anxiety-Related Symptoms  $R^2$  (.18) in the Proposed Model*

Construct	beta	$t^l$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Adult Attachment Anxiety	.46	3.09*	.21	.70	.19 (106%)	0.24
Intimate Partner Violence	-.07	0.40	-.38	.23	-0.01 (6%)	0.01

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 14

*The Explanation of Avoidance-Related Symptoms  $R^2$  (.27) in the Proposed Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Adult Attachment Avoidance	.51	3.78*	.29	.73	.26 (99%)	0.36
Intimate Partner Violence	.02	0.09	-.26	.29	.00 (1%)	0.01

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 15

*Predictive Relevance of the Proposed Model Using Blindfolding Procedure*

Construct	CV <sup>a</sup> - Communality	CV <sup>a</sup> - Redundancy <sup>b</sup>	$q^{2c}$
Child Abuse by Mother <sup>de</sup>	1.00	--	--
Child Abuse by Father <sup>d</sup>	.71	.	--
Mother IPV Perpetration <sup>d</sup>	.65	.	--
Father IPV Perpetration <sup>d</sup>	.71	.	--
Childhood Attachment with Mother	.88	.39	.64
Childhood Attachment with Father	.79	.31	.45
Adult Attachment Anxiety	.84	.07	.08
Adult Attachment Avoidance	.88	.07	.08
Intimate Partner Violence	.54	.12	.14
Anxiety-Related Symptoms	.62	.08	.09
Avoidance-Related Symptoms	.79	.20	.25
Average	.74	.18	.25

<sup>a</sup> CV = Cross Validated. <sup>b</sup> Omission Distance = 11. <sup>c</sup>  $q^2$  values of .02, .15, or .35 represent a small, medium, or large predictive relevance. <sup>d</sup> Exogenous variable.

<sup>e</sup> Construct defined by only one indicator

Table 16

*Goodness of Fit (GoF) Calculation for the Proposed Model*

Construct	$R^2$	$\sum$ indicator communalities
Child Abuse by Mother <sup>ab</sup>	--	1.0
Child Abuse by Father <sup>a</sup>	--	1.42
Mother IPV Perpetration	--	1.97
Father IPV Perpetration	--	2.13
Childhood Attachment with Mother	.45	3.51
Childhood Attachment with Father	.40	3.16
Adult Attachment Anxiety	.08	2.53
Adult Attachment Avoidance	.08	2.65
Intimate Partner Violence Victimization	.35	2.14
Anxiety-Related Symptoms	.18	3.11
Avoidance-Related Symptoms	.27	1.59
Average	.26	.73 <sup>c</sup>
GoF Index [ $\sqrt{(\text{Average communalities} \times \text{Average } R^2)}$ ]	$\sqrt{(.73 \times .26)} = 0.44$	

<sup>a</sup> Exogenous variable. <sup>b</sup> Construct defined by only one indicator. <sup>c</sup> Average = sum of all communalities (not including communalities of constructs with one indicator) divided by total number of indicators (not including the indicators for single indicator constructs; 33).

Table 17

*Reliability of the Reflective Measurement Models for Reduced Model*

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Childhood Abuse by Father		.83	.60
Physical abuse	.91		
Sexual abuse	.77		
Childhood Attachment with Father		.94	.91
Lack of Trust	.94		
Lack of Communication	.94		
Lack of Care	.92		
Alienation	.74		
Adult Attachment Anxiety		.94	.91
Attachment Anxiety Parcel 1	.93		
Attachment Anxiety Parcel 2	.91		
Attachment Anxiety Parcel 3	.91		
Adult Attachment Avoidance		.96	.93
Attachment Avoidance Parcel 1	.94		
Attachment Avoidance Parcel 2	.95		
Attachment Avoidance Parcel 3	.93		
Intimate Partner Violence Victimization		.83	.79
Physical Assault	.67		
Injury	.67		
Psychological Aggression	.78		
Control Tactics	.85		

*(table continues)*

Table 17 (continued)

Construct/Indicator	Reliability of the Indicator	Internal Consistency	
	Factor Loadings <sup>a</sup>	Composite Reliability <sup>b</sup>	Cronbach's Alpha <sup>b</sup>
Anxiety-Related Symptoms		.89	.86
Anxious Arousal	.77		
Anger/Irritability	.75		
Impaired Self-Reference	.89		
Tension Reduction Behavior	.75		
Borderline Personality	.78		
Avoidance-Related Symptoms		.88	.75
Somatoform	.84		
Avoidant Personality	.94		

<sup>a</sup> Factor loading  $\geq .55$  is adequate. <sup>b</sup> Composite reliability and Cronbach's alpha  $\geq .70$  is adequate.

Table 18

*Validity of the Reflective Measurement Models of the Reduced Model*

Construct/Indicator	Convergent validity	Discriminant Validity	
	AVE <sup>a</sup>	Fornell-Larcker <sup>b</sup>	Highest Cross Loadings <sup>c</sup>
Childhood Abuse by Father	.71	.71 > .39	
Physical abuse			.62 < .91
Sexual abuse			.40 < .77
Childhood Attachment with Father	.79	.79 > .39	
Lack of Trust			.67 < .94
Lack of Communication			.56 < .94
Lack of Care			.56 < .92
Alienation			.36 < .74
Adult Attachment Anxiety	.84	.84 > .24	
Adult Attachment Anxiety Parcel 1			.44 < .93
Adult Attachment Anxiety Parcel 2			.50 < .91
Adult Attachment Anxiety Parcel 3			.42 < .91
Adult Attachment Avoidance	.88	.88 > .26	
Adult Attachment Avoidance Parcel 1			.55 < .94
Adult Attachment Avoidance Parcel 2			.50 < .95
Adult Attachment Avoidance Parcel 3			.43 < .93
Intimate Partner Violence Victimization	.56	.56 > .24	
Physical Assault			.15 < .67
Injury			.22 < .67
Psychological Aggression			.28 < .78
Control Tactics			.58 < .85

*(table continues)*

Table 18 (*continued*)

Construct/Indicator	Convergent validity	Discriminant validity	
	AVE <sup>a</sup>	Fornell-Larcker <sup>b</sup>	Highest Cross Loadings <sup>c</sup>
Anxiety-Related Symptoms	.62	.62 > .32	
Anxious Arousal			.42 < .77
Anger/Irritability			.29 < .75
Impaired Self-Reference			.52 < .89
Tension Reduction Behavior			.29 < .75
Borderline Personality			.58 < .78
Avoidance-Related Symptoms	.79	.79 > .32	
Somatoform			.58 < .84
Avoidant Personality			.54 < .94

<sup>a</sup> AVE = Average variance extracted = Average of the individual indicator communalities of the construct = % of the variance of the indicators/manifest variables explained by the Latent Construct. AVE > .50 is adequate. <sup>b</sup> Correlation = highest correlation between the model constructs. AVE > Correlation<sup>2</sup> is adequate. <sup>c</sup> Highest cross loading < loading on own construct is adequate.

Table 19

*Latent Variable Correlations of the Reduced Model*

Construct	1	2	3	4	5	6	7
1. Childhood Abuse by Father	1.00						
2. Childhood Attachment with Father	.62	1.00					
3. Adult Attachment Anxiety	.25	.27	1.00				
4. Adult Attachment Avoidance	.38	.25	.29	1.00			
5. Intimate Partner Violence Victimization	.22	.17	.49	.43	1.00		
6. Anxiety-Related Symptoms	.17	.28	.42	.13	.16	1.00	
7. Avoidance-Related Symptoms	.38	.35	.42	.51	.22	.57	1.00

Table 20

*R<sup>2</sup> and F Tests Values for Endogenous Constructs of the Reduced Model*

Construct	R <sup>2</sup>	F (df) <sup>a</sup>
Childhood Attachment with Father	.39	36.60* (1, 57)
Adult Attachment Anxiety	.08	4.29* (1, 57)
Adult Attachment Avoidance	.06	3.64 (1, 57)
Intimate Partner Violence Victimization	.33	13.79* (2, 56)
Anxiety Related Symptoms	.18	12.51* (1, 57)
Avoidance Related Symptoms	.26	20.03* (1, 57)

<sup>a</sup> F distribution values =  $(N - p - 1)(R^2)/p(1 - R^2)$ ,  $df = p, N - p - 1$ , where  $N$  = Number of cases and  $p$  = number of predictors. \*  $p < 0.05$ .

Table 21

*The Explanation of Childhood Attachment with Father  $R^2$  (.39) in the Reduced Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Abuse by Father	.62	9.88*	.52	.73	.39 (100%)	0.64

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 22

*The Explanation of Adult Attachment Anxiety  $R^2$  (0.08) for the Reduced Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Attachment with Father	.27	1.91*	.04	.51	.08 (100%)	0.09

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 23

*The Explanation of Adult Attachment Avoidance  $R^2$  (0.06) for the Reduced Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Childhood Attachment with Father	.25	1.80*	.02	.48	.06 (100%)	0.07

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 24

*The Explanation Intimate Partner Violence Victimization  $R^2$  (.33) in the Reduced Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Adult Attachment Anxiety	.39	3.03*	.18	.61	.19 (58%)	0.28
Adult Attachment Avoidance	.32	3.04*	.15	.49	.14 (42%)	0.21

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 25

*The Explanation of Anxiety-Related Symptoms  $R^2$  (.18) in the Reduced Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Adult Attachment Anxiety	.42	4.93*	.28	.57	.18 (100%)	0.22

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 26

*The Explanation of Avoidance-Related Symptoms  $R^2$  (0.23) for the Reduced Model*

Construct	beta	$t^I$	95% CI <sup>a</sup>		Contribution to $R^2$ (% Variance)	Effect Size <sup>b</sup> $f^2$
			LL	UL		
Adult Attachment Avoidance	.51	5.84*	.37	.66	.23 (100%)	0.30

<sup>a</sup>  $t$  values and confidence intervals were calculated through bootstrapping procedure with a resampling of 500.

<sup>b</sup> Effect Size:  $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$ ; values of 0.02, 0.15, and 0.35 reflect small, medium, or large effect size.

\*  $p < .05$ , one-tailed.

Table 27

*Predictive Relevance of the Reduced Model Using Blindfolding Procedure*

Construct	CV <sup>a</sup> - Communality	CV <sup>a</sup> Redundancy <sup>b</sup>	$q^{2c}$
Child Abuse by Father <sup>d</sup>	.71	--	--
Childhood Attachment with Father	.79	.30	.43
Adult Attachment Anxiety	.84	.63	1.70
Adult Attachment Avoidance	.88	.06	.06
Intimate Partner Violence Victimization	.56	.13	.15
Anxiety-Related Symptoms	.62	.08	.09
Avoidance-Related Symptoms	.79	.19	.23
Average	.74	.23	

<sup>a</sup>CV = Cross Validated. <sup>b</sup>Omission Distance = 11. <sup>c</sup> $q^2$  values of .02, .15, or .35 represent a small, medium, or large predictive relevance. <sup>d</sup> Exogenous variable.

Table 28

*Goodness of Fit (GoF) Calculation for the Reduced Model*

Construct	$R^2$	$\sum$ indicator communalities
Child Abuse by Father <sup>a</sup>	--	1.42
Childhood Attachment with Father	.39	3.16
Adult Attachment Anxiety	.08	2.52
Adult Attachment Avoidance	.06	2.64
Intimate Partner Violence Victimization	.33	2.20
Anxiety-Related Symptoms	.18	3.10
Avoidance-Related Symptoms	.26	1.58
Average <sup>b</sup>	.22	0.72 <sup>b</sup>
GoF Index [ $\sqrt{(\text{Average communalities} \times \text{Average } R^2)}$ ]	$\sqrt{(0.72 \times .22)} = 0.40$	

<sup>a</sup> Exogenous variable. <sup>b</sup> Average = sum of all communalities (not including communalities of constructs with one indicator) divided by total number of indicators (not including the indicators for single indicator constructs; 23).

APPENDIX A

DEMOGRAPHIC INFORMATION AND HISTORY FORM

DEMOGRAPHIC INFORMATION AND HISTORY FORM

ID # \_\_\_\_\_

1. Your age today: \_\_\_\_\_
2. Is English your first language? (1)  Yes (2)  No (please specify: \_\_\_\_\_)
3. How would you describe your ethnic-racial background?  
(1)  Asian American (2)  Black/African American (3)  White/(Caucasian)  
(4)  Hispanic (5)  Middle Eastern/Arab (6)  Native American Indian  
(7)  Biracial (specify: \_\_\_\_\_) (8)  Other (specify: \_\_\_\_\_)
4. Which category best describes your current marital status?  
(1)  never married (2)  married / partnered (3)  separated  
(4)  divorced (5)  widowed (6)  other  
(explain \_\_\_\_\_)
5. Which category best describes your current relationship status?  
(1)  single, not dating (2)  single, dating casually (3)  single, but dating seriously  
(4)  living together/engaged (5)  married / partnered (6)  separated  
(7)  other (please explain \_\_\_\_\_)
6. How long have you been in your current relationship?  
(1)  N/A (Not in a relationship) (2)  3 months or less (3)  3- 9 months (4)  about 1 year  
(5)  about 2 years (6)  3-4 years (7)  5 years or more
7. If you are NOT currently in a relationship, how long since your last serious (i.e., dating exclusively for 6 months or more) relationship?  
(1)  N/A (I'm in a relationship) (2)  3 months or less (3)  3- 9 months (4)  about 1 year  
(5)  about 2 years (6)  3-4 years (7)  5 years or more
8. If you are NOT currently in a relationship, how long were you with/dating that person?  
(1)  N/A (I'm in a relationship) (2)  3 months or less (3)  3- 9 months (4)  about 1 year  
(5)  about 2 years (6)  3-4 years (7)  5 years or more
9. What is the highest degree you've earned or the last grade in school you completed?  
(1)  8<sup>th</sup> grade (2)  9<sup>th</sup> grade (3)  10<sup>th</sup> grade (4)  11<sup>th</sup> grade (5)  12<sup>th</sup> grade (H.S. diploma or GED) (6)  Some College (no degree) (7)  technical/trade school diploma  
(8)  community college degree  
(9)  university degree, specify \_\_\_\_\_  
(10)  advanced degree, specify \_\_\_\_\_  
(11)  other, please specify \_\_\_\_\_
10. Are you currently a student? (1)  Yes, part-time (2)  Yes, full-time (3)  No
11. Are you currently employed? (1)  Yes, part-time (2)  Yes, full-time (3)  No  
*If yes, what is your job?* \_\_\_\_\_

12. What is your approximate yearly household income before taxes? (include any child support received; do not include public assistance [e.g., welfare or food stamps])? \$ \_\_\_\_\_, \_\_\_\_\_. 00

13. How long have you been attending services at the current agency?

- (1)  3 months or less      (2)  3-9 months      (3)  about 1 year      (4)  2 years  
 (5)  3+ years

14. If you are/were attending therapy services (individual or group) at the current agency, how long have you attended these therapy services?

- (1)  3 months or less      (2)  3-9 months      (3)  about 1 year      (4)  2 years  
 (5)  3+ years      (6)  I am not attending therapy

15. Which of the following are reasons you are seeking services at the current agency?

- |                                                                                  |                          |                          |
|----------------------------------------------------------------------------------|--------------------------|--------------------------|
|                                                                                  | (1) <b><u>YES</u></b>    | (2) <b><u>NO</u></b>     |
| a. You were a victim of domestic violence                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| b. You were a perpetrator of domestic violence                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| c. You were referred by Child Protective Services (CPS) for parenting classes    | <input type="checkbox"/> | <input type="checkbox"/> |
| d. You were sexually assaulted                                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>If "yes," please check <u>all</u> who sexually assaulted you:</i>             | (1) <b><u>YES</u></b>    | (2) <b><u>NO</u></b>     |
| (1) Romantic partner                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Acquaintance (someone you know who was not a romantic partner)               | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Stranger                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Other (please specify relation): _____                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| e. You were abused in childhood                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>If "yes," please check <u>all</u> types you experienced:</i>                  | (1) <b><u>YES</u></b>    | (2) <b><u>NO</u></b>     |
| (1) Physical Child Abuse                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Sexual Child Abuse                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Emotional Child Abuse                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Physical Child Neglect (e.g., not enough food/clothing/housing/ supervision) | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Emotional Child Neglect (e.g., not enough attention to your emotional needs) | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>If "yes," please check <u>all</u> who abused you in childhood:</i>            | (1) <b><u>YES</u></b>    | (2) <b><u>NO</u></b>     |
| (6) Mother/female guardian                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Father/male guardian                                                         | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Sibling                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| (9) Stranger                                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| (10) Other family member (please specify relation): _____                        | <input type="checkbox"/> | <input type="checkbox"/> |
| (11) Other (please specify relation): _____                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Someone close to you was abused or assaulted                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>If "yes," please specify their relationship to you:</i>                       | (1) <b><u>YES</u></b>    | (2) <b><u>NO</u></b>     |
| (1) Romantic partner                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Child                                                                        | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Other (please specify relation): _____                                       | <input type="checkbox"/> | <input type="checkbox"/> |

16. Have you received any of the following services at the current agency?

- (1) Individual therapy      (1) **YES**      (2) **NO**

- (2) Group therapy
- (3) Shelter
- (4) Legal Advocacy Support
- (5) Parenting classes
- (6) Violence intervention & prevention for perpetrators (VIPPP)

17. Have you experienced an event that involved actual or threatened death, serious injury, or sexual assault and/or rape?

- (1)  Yes (2)  No (3)  I'm not sure

18. Have you witnessed an event that involved actual or threatened death, serious injury, or sexual assault and/or rape?

- (1)  Yes (2)  No (3)  I'm not sure

19. Have you had to deal with the kind of trauma described in #'s 17 and 18 (even though you did not witness it yourself?)

- (1)  Yes (2)  No

20. If you answered "No" to questions 17, 18, and 19: Do you believe you have experienced some other kind of traumatic event?

- (1)  Yes (2)  No If yes, please specify:

---

21. If you answered, "yes" to #17, 18, or 19, please check all that apply:

Did you feel any of the following after the event?

- a. intense fear (1)  Yes (2)  No
- b. helplessness (1)  Yes (2)  No
- c. horror (1)  Yes (2)  No
- d. terror (1)  Yes (2)  No
- e. rejection exclusion (1)  Yes (2)  No
- f. rage (1)  Yes (2)  No
- g. numbness or nothingness (1)  Yes (2)  No
- h. N/A- I have not experienced a traumatic event (1)  Yes

22. If you experienced or witnessed a traumatic event (as described in #'s 17 or 18 above) and felt any of the feelings listed in #21 above, please list all the age(s) or time period(s) in your life when that happened (for example: "During High School" OR "between ages 6-10 and also ages 24-26" OR "age 15 and during my last marriage (ages 36-42)")

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23. As best as you can, can you estimate how many of these type events you have encountered over the course of your life? \_\_\_\_\_

24. Have you ever been diagnosed with any of the following:

	(1) <u>Yes</u>	(2) <u>No</u>	<u>No, but I suspect I have the disorder</u>	(4) <u>I don't know</u>
a. Attention-Deficit/Hyperactivity Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Post Traumatic Stress Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Panic Disorder or Panic Attacks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Obsessive-Compulsive Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Substance Abuse or Dependence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Intermittent Explosive Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Generalized Anxiety Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Major Depressive Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Dysthymic Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Bipolar Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Schizophrenia or related disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Mental Retardation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Personality Disorder (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Phobia (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Dissociative Disorder (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Eating Disorder (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Learning Disability (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r. Other (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. If you answered "yes" to any disorder in Question #22, are you currently taking medication(s) for the disorders?

- (1)  Yes (specify \_\_\_\_\_)      (2)  No      (3)  N/A (no disorder)

-----Family Background-----

26. Have your biological parents or biological siblings ever been diagnosed with any of the following:

	(1) <u>Yes</u>	(2) <u>No</u>	(3) <u>No, but I suspect they have the disorder</u>	(4) <u>I don't know</u>
a. Attention-Deficit/Hyperactivity Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Post Traumatic Stress Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Panic Disorder or Panic Attacks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Obsessive-Compulsive Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Substance Abuse or Dependence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Intermittent Explosive Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Generalized Anxiety Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Major Depressive Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Dysthymic Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Bipolar Disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Schizophrenia or related disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Mental Retardation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Personality Disorder (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Phobia (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Dissociative Disorder (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Eating Disorder (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Learning Disability (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r. Other (specify _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27a. If you answered, "Yes" or " No, but I suspect they have the disorder" to any part of #24, please list which relatives were diagnosed with which of the disorders (or which relatives you suspect have certain disorders)

(Example: 1. Aunt, Bipolar Disorder 2. I suspect mother to have Generalized Anxiety Disorder)

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28. Have any of your biological parents or biological siblings:

(1)Yes (2)No

- a. Been admitted into a psychiatric hospital  
(sometimes referred to as "having a nervous breakdown")?
- b. Attempted suicide
- c. Died because of suicide

APPENDIX B  
PARENTAL BONDING INSTRUMENT

### PBI Mother Form

*This questionnaire lists various attitudes and behaviors of parents. As you remember your MOTHER in your first 16 years, please place a tick in the most appropriate box next to each question.*

	Very Like	Moderately Like	Moderately Unlike	Very Unlike
1. Spoke to me in a warm and friendly voice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did not help me as much as I needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Let me do those things I liked doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Seemed emotionally cold to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Appeared to understand my problems and worries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was affectionate to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Liked me to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did not want me to grow up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Tried to control everything I did	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Invaded my privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Enjoyed talking things over with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently smiled at me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tended to baby me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Did not seem to understand what I needed or wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Let me decide things for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Made me feel I wasn't wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Could make me feel better when I was upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Did not talk with me very much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Tried to make me feel dependent on her/him	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Felt I could not look after myself unless she/he was around	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Gave me as much freedom as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Let me go out as often as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was overprotective of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Did not praise me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Let me dress in any way I pleased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### PBI Father Form

*This questionnaire lists various attitudes and behaviors of parents. As you remember your FATHER in your first 16 years, please place a tick in the most appropriate box next to each question.*

	Very Like	Moderately Like	Moderately Unlike	Very Unlike
1. Spoke to me in a warm and friendly voice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did not help me as much as I needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Let me do those things I liked doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Seemed emotionally cold to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Appeared to understand my problems and worries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was affectionate to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Liked me to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did not want me to grow up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Tried to control everything I did	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Invaded my privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Enjoyed talking things over with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently smiled at me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tended to baby me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Did not seem to understand what I needed or wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Let me decide things for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Made me feel I wasn't wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Could make me feel better when I was upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Did not talk with me very much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Tried to make me feel dependent on her/him	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Felt I could not look after myself unless she/he was around	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Gave me as much freedom as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Let me go out as often as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was overprotective of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Did not praise me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Let me dress in any way I pleased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C

EXPERIENCE IN CLOSE RELATIONSHIPS—REVISED

### ECR-R

*The statements below concern how you feel in emotionally intimate relationships. We are interested in how you experience(d) your current or most recent serious (exclusively dating for 6 months or more) romantic relationship. Respond to each statement by circling a number to indicate how much you agree or disagree with the statement.*

	Strongly Disagree	-	-	-	-	-	Strongly Agree
1. I feel comfortable depending on romantic partners.	1	2	3	4	5	6	7
2. My desire to be very close sometimes scares people away.	1	2	3	4	5	6	7
3. I talk things over with my partner.	1	2	3	4	5	6	7
4. I find it relatively easy to get close to my partner.	1	2	3	4	5	6	7
5. I worry a lot about my relationships.	1	2	3	4	5	6	7
6. I often worry that my partner doesn't really love me.	1	2	3	4	5	6	7
7. I do not often worry about being abandoned.	1	2	3	4	5	6	7
8. It helps to turn to my romantic partner in times of need.	1	2	3	4	5	6	7
9. I'm afraid that I will lose my partner's love.	1	2	3	4	5	6	7
10. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.	1	2	3	4	5	6	7
11. When my partner is out of sight, I worry that he or she might become interested in someone else.	1	2	3	4	5	6	7
12. Sometimes romantic partners change their feelings about me for no apparent reason.	1	2	3	4	5	6	7
13. I don't feel comfortable opening up to romantic partners.	1	2	3	4	5	6	7
14. I am nervous when partners get too close to me.	1	2	3	4	5	6	7
15. I often worry that my partner will not want to stay with me.	1	2	3	4	5	6	7
16. I rarely worry about my partner leaving me.	1	2	3	4	5	6	7
17. I find that my partner(s) don't want to get as close as I would like.	1	2	3	4	5	6	7
18. I find it easy to depend on romantic partners.	1	2	3	4	5	6	7
19. My partner only seems to notice me when I'm angry.	1	2	3	4	5	6	7
20. I often wish that my partner's feelings for me were as strong as my feelings for him or her.	1	2	3	4	5	6	7
21. I find it difficult to allow myself to depend on romantic partners.	1	2	3	4	5	6	7
22. I get uncomfortable when a romantic partner wants to be very close.	1	2	3	4	5	6	7
23. My romantic partner makes me doubt myself.	1	2	3	4	5	6	7
24. I tell my partner just about everything.	1	2	3	4	5	6	7
25. It's not difficult for me to get close to my partner.	1	2	3	4	5	6	7
26. I feel comfortable sharing my private thoughts and feelings with my partner.	1	2	3	4	5	6	7
27. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.	1	2	3	4	5	6	7
28. I prefer not to show a partner how I feel deep down.	1	2	3	4	5	6	7
29. My partner really understands me and my needs.	1	2	3	4	5	6	7
30. I prefer not to be too close to romantic partners.	1	2	3	4	5	6	7
31. It makes me mad that I don't get the affection and support I need from my partner.	1	2	3	4	5	6	7
32. I am very comfortable being close to romantic partners.	1	2	3	4	5	6	7
33. I worry that romantic partners won't care about me as much as I care about them.	1	2	3	4	5	6	7
34. I worry that I won't measure up to other people.	1	2	3	4	5	6	7
35. I usually discuss my problems and concerns with my partner.	1	2	3	4	5	6	7
36. It's easy for me to be affectionate with my partner.	1	2	3	4	5	6	7

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