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**CHILDHOOD BETRAYAL TRAUMA AND INTIMATE PARTNER
VIOLENCE PERPETRATION AND VICTIMIZATION: THE ROLE OF
ATTACHMENT INSECURITY AND AFFECTIVE INSTABILITY**

Emma Shaughnessy

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**CHILDHOOD BETRAYAL TRAUMA AND INTIMATE PARTNER VIOLENCE
PERPETRATION AND VICTIMIZATION: THE ROLE OF ATTACHMENT
INSECURITY AND AFFECTIVE INSTABILITY**

By

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B.A., Gettysburg College, 2018
M.A., University of South Dakota, 2022

A Dissertation Submitted in Partial Fulfillment of
the Requirements for the Degree of Doctor of Philosophy

Department of Psychology
Clinical Psychology Program
In the Graduate School
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ABSTRACT

The present study examined the joint roles of attachment (anxiety and avoidance) and affective instability in the association between childhood betrayal trauma and intimate partner violence (IPV) perpetration and victimization severity. Two major societal concerns are IPV and childhood maltreatment. Childhood betrayal trauma is a particularly damaging trauma perpetrated by someone the child trusts and depends upon (e.g., parents). Childhood betrayal trauma has been associated with an increased risk of later IPV, both victimization (e.g., Babcock & DePrince, 2013) and perpetration (e.g., Linder & Collins, 2005; Zurbriggen et al., 2010). Childhood betrayal trauma also impairs the development of a secure attachment style (e.g., Swanson & Mallinckrodt, 2001). In independent studies, avoidant attachment has been primarily associated with IPV victimization, while anxious attachment has been associated with both IPV perpetration and victimization. There is very little research on mechanisms between childhood betrayal trauma, attachment, and IPV perpetration and victimization. We hypothesized that attachment insecurity fostered by childhood betrayal trauma would mediate the association between childhood betrayal trauma and IPV victimization and perpetration. Finally, affective instability has been independently associated with attachment anxiety (e.g., Pietromonaco et al., 2006; Abtahi & Kerns, 2017) and is a risk factor for IPV perpetration (e.g., Munro & Sellbom, 2020; Krause-Utz et al., 2021a). We hypothesized that affective instability would both moderate and mediate the association between anxious attachment and IPV perpetration. Consistent with hypotheses, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV victimization, and attachment anxiety partially mediated the association between childhood betrayal trauma and IPV perpetration. However, inconsistent with hypotheses, attachment avoidance did not mediate the association between childhood betrayal trauma and IPV victimization. Additionally, affective instability did not moderate, but did partially mediate, the association between attachment anxiety and IPV perpetration. Lastly, although not expected, affective instability fully mediated the association between attachment avoidance and IPV victimization. This was the first study to examine childhood betrayal trauma, attachment anxiety, attachment avoidance, and affective instability as risk factors for IPV perpetration and IPV victimization.

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“I’m sorry to say so/but, sadly, it’s true/that Bang-ups/and Hang-ups/*can* happen to you.
.../But on you will go/though the weather be foul./On you will go/though your enemies
prowl. .../On and on you will hike./And I know you’ll hike far/and face up to your
problems/whatever they are. .../[Y]ou’re off to Great Places!/Today is your day!/Your
mountain is waiting./So...*get on your way!* .../Oh, the places you’ll go!”

—Dr. Seuss, *Oh, the Places You'll Go!*

It is nearly impossible to distill the essence of my Ph.D. experience into words, and it is nearly impossible to encapsulate into an acknowledgements section how grateful I am for all of the people who have helped me along the way. But I will try my best here. The journey toward a Ph.D. in any field is very challenging. However, there is something about getting a Ph.D. in a field like clinical psychology in particular that often leads graduate students on a road to self-reflection and growth, as they are constantly applying what they learn to their everyday lives and relationships. My Ph.D. years have been the most difficult and also the most transformative years of my life. I have many people to thank for their unwavering professional and personal support.

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Introduction

Intimate partner violence (IPV) is the physical, sexual, or psychological harm inflicted by a current or former romantic partner, and it is a major societal concern (Smith et al., 2017). IPV victimization and perpetration are significant problems that are related to each other and tend to co-occur (Okuda et al., 2015; Whitaker et al., 2007; Williams et al., 2008), pointing to the importance of studying these two outcomes simultaneously. There are several theories regarding the causes and dynamics of IPV perpetration and victimization, including feminist theory (Dobash & Dobash, 1977; Mihalic & Elliott, 1997), theories related to personality (Dutton, 1995; Holtzworth-Munroe & Stuart, 1994), I³ theory (Finkel, 2007), and social learning theory (Bandura, 1971, 1973). Reciprocal or bidirectional IPV, wherein both partners perpetrate and are victims of IPV, is more common than unilateral IPV (in which one partner in a couple is the perpetrator), and 57.5% of all IPV is reciprocal (Langhinrichsen-Rohling et al., 2012). Among dating, cohabitating, and married couples, a mean of 31.63% of couples had female-only physical violence, a mean of 18.13% had male-only physical violence, and a mean of 50.2% had reciprocal physical violence (Stets & Straus, 1989). In a dyadic study of sexual coercion in heterosexual couples, 24.8% of couples had female-only sexual coercion victimization by the male partner, 9.5% had male-only sexual coercion victimization by the female partner, and 20.3% had reciprocal sexual coercion (Brousseau et al., 2011). Studies of IPV have historically focused on either perpetration or victimization. Determining common etiological risk factors and joint mechanisms for perpetration and victimization simultaneously is important.

Interestingly, a history of traumatic upbringing has been associated with both IPV victimization and perpetration (e.g., Linder & Collins, 2005; Kushner, 2022; Zurbriggen et al., 2010; Gobin & Freyd, 2009; Babcock & DePrince, 2013; Li et al., 2019). Childhood

maltreatment is all types of physical, emotional, and sexual abuse; neglect; negligence; and exploitation of individuals under 18 years old (World Health Organization, 2016), and it is a widespread, severe societal concern. Childhood maltreatment is often perpetrated by someone close to the victim (Administration for Children and Families, 2002), and in these situations, it can be considered a high betrayal trauma. Childhood betrayal trauma may likely be a more fruitful area for study than general childhood maltreatment. Betrayal trauma theory postulates that the way a victim attends to information about a traumatic event differs depending on the nature of the relationship between the victim and perpetrator (Goldberg & Freyd, 2006). Trauma is considered high in betrayal when the perpetrator is someone who the victim trusts (Goldberg et al., 2006). Compared to childhood maltreatment perpetrated by someone not close to the victim, childhood betrayal trauma is associated with more deleterious outcomes (Cook et al., 2005; Filipas & Ullman, 2006; Freyd et al., 2005).

Prior research points to an association between childhood betrayal trauma and later IPV perpetration (Linder & Collins, 2005; Kushner, 2022; Zurbriggen et al., 2010; White & Widom, 2003; Li et al., 2020) and IPV victimization (Gobin & Freyd, 2009; Hocking et al., 2016; Babcock & DePrince, 2013; Mackelprang et al., 2014; Li et al., 2019). As suggested by the social learning theory of IPV (Bandura, 1971, 1973), it is possible that individuals who have experienced childhood betrayal trauma learn that violence is acceptable and thus use violence against future intimate partners. High betrayal traumas are also associated with a decreased ability to detect harm in relationships (DePrince, 2005; DePrince et al., 2009; Marx et al., 2005; Marx & Soler-Baillo, 2005; Messman-Moore & Brown, 2006). It is possible that this decreased ability to detect harm stems from childhood betrayal trauma and continues into adulthood to influence perceptions of abusive relationships.

Furthermore, a mechanism such as attachment insecurity, which can be fostered by childhood betrayal trauma, may at least partly explain the association between childhood betrayal trauma and IPV perpetration and victimization. Attachment theory proposes that infants are born with an innate drive to seek proximity to others when faced with threat or danger, and over the course of the first year of life, these others can be selected as attachment figures (e.g., parents, caretakers) (Bowlby, 1982b). Relationships with attachment figures who are available and responsive support the development of a secure attachment style in children (Mikulincer & Shaver, 2011). However, relationships with attachment figures who are unavailable, unresponsive, or abusive may instead result in insecure attachment styles in children (Briere et al., 2017; Finzi et al., 2001). The stability of attachment style from childhood to adulthood is weak (Groh et al., 2014). Bowlby (1973, 1980, 1988) posited that internal working models of oneself and people with whom one forms relationships are formed based on experiences with one's primary attachment figure. He also posited that these internal working models are always evolving and can thus change in response to life experiences, including instability in caregiving and later attachment relationships (e.g., trauma perpetrated by a loved one). Thus, childhood betrayal trauma and IPV victimization can alter attachment styles. It is possible that attachment style may be one mechanism that can explain the association between childhood betrayal trauma and subsequent ways of relating with romantic partners, including IPV perpetration and victimization. Previous research has established an association between childhood betrayal trauma and attachment insecurity, and findings differ regarding the specific type of insecure attachment style that is implicated (Choi & Kangas, 2020; Levendosky et al., 2002; Swanson & Mallinckrodt, 2001; Owen et al., 2012; Godbout et al., 2019).

Research has also demonstrated associations between insecure attachment styles and IPV perpetration (Velotti et al., 2022; Orcutt et al., 2005; Sonkin et al., 2019; Bélanger et al., 2015; Mckeown, 2014; Mauricio et al., 2007; Kesner & McKenry, 1998; Spencer et al., 2020; Dumas et al., 2008). Most research suggests an association between anxious attachment and IPV perpetration (Velotti et al., 2022; Sonkin et al., 2019; Mauricio et al., 2007), while other studies examined both IPV perpetration and victimization (Orcutt et al., 2005; Bélanger et al., 2015; Mckeown, 2014). Limited research suggests an association between avoidant attachment and IPV perpetration (Velotti et al., 2022). Also, limited research has been undertaken on the mechanisms underlying the association between childhood betrayal trauma and IPV victimization (Godbout et al., 2009; Hocking et al., 2016; Levendosky et al., 2002; Smagur et al., 2018). Regarding mechanisms of association, one study supported the mediating role of attachment anxiety and avoidance between early exposure to violence and later IPV perpetration and victimization (Godbout et al., 2009). Namely, experiencing childhood psychological and physical violence by parents predicted greater attachment anxiety, avoidance, and adulthood physical IPV perpetration and victimization, and attachment anxiety and attachment avoidance each also predicted adulthood physical IPV perpetration and victimization (Godbout et al., 2009). Attachment anxiety also partially mediated the association between childhood maltreatment and betrayal trauma re-victimization in adulthood, which may include IPV victimization (Hocking et al., 2016). However, the focus of this study was not on IPV victimization within the context of a romantic relationship, and this study did not include avoidant attachment or IPV perpetration.

Two studies also support the role of attachment as a mediator in the association between childhood maltreatment and IPV perpetration in narrow samples, such as a clinical sample of

men (Brassard, 2014) and adolescents with intellectual disability (Weiss et al., 2011). Neither of these studies looked at betrayal trauma in particular, and only Weiss and colleagues (2011) examined both IPV perpetration and victimization together. The present study aimed to fill these gaps in the literature by investigating childhood betrayal trauma, attachment anxiety and avoidance, and IPV victimization and perpetration together in one model.

Often described as an “emotional roller coaster” to those who experience it, affective instability consists of affects that have their own characteristics, amplitude, and duration; rapid shifting to intense affect; and dysfunctional regulation of emotions (Renaud & Zacchia, 2012). The dimensions of affective instability include valence, high affective intensity, being especially reactive to environmental triggers, rapid changes in affect, and poor affect regulation (Renaud & Zacchia, 2012). Affective instability was selected as a mechanism of interest in the present study because of its important independent associations with attachment insecurity and IPV (to be discussed next).

Research has revealed a positive association between childhood betrayal trauma and emotion dysregulation (Jacoby et al., 2016; Keng et al., 2019; Bennett et al., 2016), as childhood maltreatment, particularly of a repeated nature, interferes with the development of appropriate emotion regulation skills (Burns et al., 2010). Little research has been conducted on affective instability and IPV victimization. Affective instability and emotion dysregulation have mostly been associated with IPV perpetration (e.g., Gratz et al., 2009; McNulty & Hellmuth, 2008; Shorey et al., 2011, 2015; Stuart et al., 2006; Bushman et al., 2001; Jakupcak et al., 2002; Lee et al., 2020; Munro & Sellbom, 2020; Grigorian et al., 2019; Bliton et al., 2016). Also, a few studies have examined associations between IPV perpetration, attachment, and emotion dysregulation (Robinson, 2017; Cheche Hoover & Jackson, 2021; Pollard & Cantos, 2021;

Guzmán-González et al., 2016), with the majority of studies pointing to the role of attachment anxiety. These findings could be expanded to apply to affective instability, and the present study aimed to fill this gap in the literature. In addition, attachment insecurity, particularly attachment anxiety, has been independently linked to poor emotion regulation skills (Cassidy, 1994; Ainsworth et al., 1978; Braungart & Stifter, 1991; Shiller et al., 1986; Pietromonaco et al., 2006; Abtahi & Kerns, 2017). To the author's knowledge, no research has explored mechanisms for affective instability specifically as a moderator or mediator between attachment insecurity and IPV perpetration or victimization. It is possible that affective instability partially explains the association between anxious attachment and IPV perpetration, or can interact with anxious attachment to predict IPV perpetration. The current study aimed to test this proposed association.

The purpose of the present study was three-fold. First, I sought to test if attachment anxiety mediates the association between childhood betrayal trauma and IPV victimization and perpetration. Second, I tested if attachment avoidance mediates the association between childhood betrayal trauma and IPV victimization. Finally, I tested whether affective instability mediates the association between attachment anxiety and IPV perpetration. I also tested if affective instability moderates the association between attachment anxiety and IPV perpetration, such that the association between attachment anxiety and IPV perpetration is stronger at higher levels of affective instability than at lower or mean levels of affective instability. Overall, I hoped that the current study would clarify the differential risk factors for IPV perpetration (attachment anxiety and affective instability) and victimization (attachment anxiety and attachment avoidance). Moreover, this study examined the associations among childhood betrayal trauma, attachment anxiety and avoidance, affective instability, and IPV perpetration and victimization, which have never been examined in one comprehensive model.

The following literature review first addresses the problems of IPV victimization and perpetration, followed by a discussion of theoretical models of IPV. Second, betrayal trauma and childhood maltreatment are addressed. Third, research on childhood betrayal trauma's associations with IPV perpetration and victimization is reviewed. Fourth, attachment theory is discussed, as is the association of attachment with childhood betrayal trauma, IPV perpetration, and IPV victimization. Fifth, affective instability and its associations with childhood betrayal trauma, attachment, and IPV are reviewed. Finally, research regarding the covariates (age and gender) is reviewed.

Literature Review

IPV Victimization and Perpetration

Intimate partner violence (IPV) is the physical, sexual, or psychological harm inflicted by a current or former romantic partner, and it is a major societal concern (Smith et al., 2017). IPV victimization affects approximately one-fourth of adult women and one-seventh of adult men in the U.S. (Smith et al., 2017). IPV victimization is associated with several deleterious consequences, including depression, somatic symptoms (Hines & Malley-Morrison, 2001), self-harm, suicidal behavior (World Health Organization, 2013), PTSD, eating disorders, and physical injury (Stockman et al., 2015).

Interestingly, IPV perpetration and victimization appear to be related. Past-year IPV victimization is a strong predictor of IPV perpetration (Okuda et al., 2015). Studies have yielded varying statistics for the rate of IPV perpetration, and findings are inconsistent as to whether men and women are equally likely to perpetrate IPV (gender symmetry) or whether one gender is much more likely to perpetrate IPV than the other (gender asymmetry) (Chan, 2011). The overall

prevalence of physical IPV perpetration has been estimated at 24.8% (Desmarais et al., 2012b). Reciprocal or bidirectional IPV, wherein both partners perpetrate and are victims of IPV, is more common than unilateral IPV (in which one partner in a couple is the perpetrator), and 57.5% of all IPV is reciprocal (Langhinrichsen-Rohling et al., 2012). In a study of couples aged 18-28, nearly 24% of relationships had some IPV, and half of those had reciprocal IPV (Whitaker et al., 2007). Men were more likely than women to inflict injury (Whitaker et al., 2007). Reciprocal IPV led to a higher injury rate (31.4%) than nonreciprocal IPV (Whitaker et al., 2007). In 70% of non-reciprocally violent relationships, women were the perpetrators of IPV (Whitaker et al., 2007). It has also been revealed that a significant proportion of females seeking help for IPV victimization are also IPV perpetrators (Williams et al., 2008). The prevalence of any IPV perpetration in the past year was 5.7% (4.2% in men and 7% in women) and was significantly more common for females than males (Okuda et al., 2015). Women more often perpetrated less severe types of IPV, and sexual IPV was more often perpetrated by men (Okuda et al., 2015). Yet another study found that more than 1 in 4 women (28.3%) and 1 in 5 men (21.6%) reported perpetrating physical IPV in a relationship (Desmarais et al., 2012b). In a large Australian sample, males in relationships experienced most forms of IPV more often than females did (Ahmadabadi et al., 2017). A study of a large sample in the United States found little variation between men and women in the prevalence, frequency, and severity of IPV (Cho, 2012). In Portugal, total lifetime IPV victimization was 74.6% (72.8% for males, 75.1% for females), lifetime psychological IPV victimization was 68% (67.3% for males, 68.2% for females), lifetime physical IPV victimization was 21.8% (22.4% for males, 21.6% for females), lifetime injury IPV victimization was 4.8% (5.8% for males, 4.5% for females), and lifetime sexual coercion IPV victimization was 28.7% (24% for males, 30.1% for females) (Capinha et al.,

2022). Total lifetime IPV perpetration was 76.1% (75.3% for males, 76.4% for females), lifetime psychological IPV perpetration was 72.1% (68.9% for males, 73.2% for females), lifetime physical IPV perpetration was 21.6% (19.6% for males, 22.2% for females), lifetime injury IPV perpetration was 2.8% (3.8% for males, 2.7% for females), and lifetime sexual coercion IPV perpetration was 19.4% (32.4% for males, 15.7% for females) (Capinha et al., 2022). Based on these findings, both IPV victimization and perpetration are significant societal concerns, and they appear to be related to each other and to also differ across culturally different samples.

Measures of IPV are largely self-report, though they differ in the types of IPV that they assess and whether the respondent is the victim and/or perpetrator. Examples of measures of IPV include the Revised Conflict Tactics Scales (CTS-2) (Straus et al., 1996), which measures physical victimization and perpetration, sexual victimization and perpetration, and psychological victimization and perpetration; the Abusive Behavior Inventory (Shepard & Campbell, 1992), which measures physical victimization and perpetration and psychological victimization and perpetration; the Multidimensional Measure of Emotional Abuse (Murphy & Hoover, 1999; Murphy et al., 1999), which measures psychological victimization and perpetration; and the Psychological Maltreatment of Women Inventory (Tolman, 1989, 1999), which measures psychological victimization. For the current study, the Revised Conflict Tactics Scales Short Form (CTS2S; Straus & Douglas, 2004) was chosen to assess IPV because it assesses both perpetration and victimization and assesses various forms of IPV that are of interest.

Theoretical Models of IPV

There are several theories regarding the causes and dynamics of IPV perpetration and victimization, including feminist theory, theories related to personality, I³ theory, and social learning theory. Feminist theory posits that gender roles in patriarchal societies place men in

positions of power over women (Dobash & Dobash, 1977; Mihalic & Elliott, 1997) and that men perpetrate IPV against women to control and exert their dominance over them (Walker, 1984). Some studies have lent support to this theory, finding that families are at an increased risk of experiencing IPV when husbands have attitudes about traditional gender roles and when there are greater differences between husbands' and wives' acceptance of patriarchal values (Leonard & Senchak, 1996; Smith, 1990). Assaults against wives are more frequent in states with mainly husband-dominant families and women who take on a less traditional gender role (Yllo, 1983; Yllo & Straus, 1984).

There are also theories of IPV perpetration related to personality characteristics. Dutton's (1995) Borderline Personality Organization (BPO) and Assaultiveness theory (Dutton, 1995) is based on attachment theory. It posits that a fearful attachment style and individuals' tendency to experience intense anger when they feel threatened by their partner or believe that the relationship has failed in some way leads to IPV perpetration (Dutton, 1995). Additionally, Holtzworth-Munroe and Stuart's (1994) Developmental Model of Batterer Subtypes posits that three distal variables (i.e., genetic/prenatal factors, early childhood family experiences, peer experiences) influence the development of five more proximal variables associated with IPV perpetration (i.e., attachment to others, impulsivity, social skills, attitudes toward women, violence) and that the combinations of these distal and proximal variables lead to the development of a batterer subtype, which can be Family-Only, Dysphoric/Borderline, or Generally Violent and Antisocial batterers (Holtzworth-Munroe & Stuart, 1994). Research has confirmed these three theorized batterer subtypes and an additional Low-Level Antisocial batterer subtype (Holtzworth-Munroe et al., 2000).

Furthermore, I³ theory (Finkel, 2007) posits that three processes interact to cause IPV: instigation (a behavior or event that triggers an aggressive impulse; e.g., provocation), impellance (dispositional or situational factors that increase a person's tendency to experience such impulses; e.g., dispositional aggressiveness), and inhibition (a person's ability to restrain aggressive impulses; e.g., executive control). For IPV to occur, at least one partner must experience an instigating event and some impellance. These must be strong enough to outweigh any factors that may inhibit IPV perpetration. Several studies have supported this theory (Slotter et al., 2012; Finkel et al., 2012; DeWall et al., 2013). For instance, inhibition (relationship commitment) impeded IPV perpetration when people faced instigation (provocation) (Slotter et al., 2012). Additionally, the effect of instigation (provocation) on impellance (dispositional retaliatory tendencies) was moderated by inhibition (relationship commitment), such that the instigation (provocation) increased the impellance (dispositional retaliatory tendencies) the most among individuals low in inhibition (i.e., lacking in relationship commitment) (Slotter et al., 2012). Impellance (dispositional aggressiveness) also predicted IPV perpetration, particularly among individuals experiencing disinhibition (self-regulatory strength depletion) (Finkel et al., 2012). Furthermore, impellance (dispositional aggressiveness) predicted IPV perpetration, particularly among individuals experiencing both disinhibition (poor executive control or depletion) and instigation (provocation) (Finkel et al., 2012). This theory provides a rich framework to examine the interplay of various risk and protective factors for IPV perpetration.

Lastly, social learning theory (Bandura, 1971, 1973) has been applied to explain IPV perpetration. It has been posited that IPV against partners is learned through modeling during childhood, such as by experiencing or witnessing violence in parental and peer relationships (Bowen, 1978; Mihalic & Elliott, 1997), which results in the tolerance and acceptance of IPV

(Lewis & Fremouw, 2001). Indeed, previous studies have revealed that experiencing or witnessing abuse as a child is associated with future IPV victimization and perpetration (Hotaling & Sugarman, 1986; Kalmuss, 1984; Leonard & Senchak, 1996; Shook et al., 2000; Smagur et al., 2018). Experiences in childhood thus appear to play an important role in later IPV.

Betrayal Trauma

Betrayal trauma theory postulates that the way a victim attends to information about a traumatic event differs depending on the nature of the relationship between the victim and perpetrator (Goldberg & Freyd, 2006). Trauma is considered high in betrayal when the perpetrator is someone who the victim trusts (Goldberg et al., 2006). People use coping mechanisms to deal with betrayal trauma, including abuse. Survivors of traumatic events are less likely to remember events high in betrayal than those low in betrayal, a phenomenon called betrayal blindness that preserves the bond between the victim and the perpetrator (Freyd et al., 2001; Freyd, 1996). Betrayal blindness, or forgetting the trauma, is thought to occur partly due to dissociation, and dissociation has been linked to high betrayal trauma (Platt & Freyd, 2015). For people who depend upon the perpetrator of the trauma (such as children whom their caregivers abuse or those abused by romantic partners), it may be advantageous to forget that the trauma occurred (Freyd et al., 2001; Freyd, 1996).

Childhood maltreatment is all types of physical, emotional, and sexual abuse; neglect; negligence; and exploitation of individuals under 18 years old (World Health Organization, 2016), and it is a widespread, severe societal concern, with one study estimating that 1 in 4 children experience some form of lifetime child abuse or neglect (Centers for Disease Control and Prevention, 2014), and 1 in 7 children have experienced abuse or neglect in the past year (Centers for Disease Control and Prevention, 2019). In 2012, an estimated 686,000 children were

victims of maltreatment in the U.S. (Centers for Disease Control and Prevention, 2014). Childhood maltreatment is often perpetrated by someone close to the victim, and in these situations, it can be considered a high betrayal trauma. Research has revealed that a large majority (85.5%) of child abuse is perpetrated by caregivers (Administration for Children and Families, 2002). Compared to childhood maltreatment committed by someone not close to the victim, childhood betrayal trauma is associated with more deleterious outcomes. Childhood betrayal trauma can lead to significant distress and impairments in the child's behavioral, emotional, and social functioning (Cook et al., 2005; Filipas & Ullman, 2006; Freyd et al., 2005). Experiencing high betrayal traumas has been associated with a number of physical illnesses, anxiety, dissociation, and depression symptoms. In contrast, low betrayal traumas did not predict symptoms (Freyd et al., 2005). Thus, childhood betrayal trauma would likely be a more fruitful area for study than general childhood maltreatment.

Childhood Betrayal Trauma and IPV Perpetration

Prior research points to an association between childhood betrayal trauma and later IPV perpetration. Childhood physical abuse by caregivers before age 6 was associated with physical IPV perpetration and victimization at age 23 among both males and females (Linder & Collins, 2005). Experiencing familial-only perpetrated violence and experiencing both familial and nonfamilial perpetrated violence was associated with violent offending, while experiencing nonfamilial-only perpetrated violence was not related to violent offending (Kushner, 2022). Additionally, the impacts of familial-only and nonfamilial-only perpetrated violence were significantly weaker for males than females (Kushner, 2022). The effects of experiencing violent victimization from familial and nonfamilial perpetrators did not vary across genders (Kushner, 2022). Using the Brief Betrayal Trauma Survey to assess childhood abuse, Zurbriggen and

colleagues (2010) found that childhood emotional abuse predicted adolescent sexual perpetration for women ($r = .19$) and adolescent sexual victimization for men ($r = .49$) (Zurbriggen et al., 2010). Similarly, people who experienced childhood abuse or neglect before age 12 were more likely to perpetrate physical IPV 20 years later than those who did not experience childhood abuse or neglect (White & Widom, 2003). In a meta-analysis on IPV perpetration, childhood physical, psychological, and sexual abuse were positively associated with IPV perpetration. This association was moderated by gender, with the association being stronger for males than females (Li et al., 2020). However, this study did not examine childhood betrayal trauma specifically. Studies thus support a positive association between childhood betrayal trauma and IPV perpetration, with some differential effects depending on gender. As suggested by the social learning theory of IPV (Bandura, 1971, 1973), it is possible that individuals who have experienced childhood betrayal trauma learn that violence is acceptable and thus use violence against future intimate partners. Furthermore, a mechanism such as attachment insecurity, which can be fostered by childhood betrayal trauma, may partially mediate the association between childhood betrayal trauma and IPV perpetration. The present study aimed to explore this mechanism.

Childhood Betrayal Trauma and IPV Victimization

Previous research has also revealed an association between childhood betrayal trauma and later IPV victimization. Childhood betrayal trauma is a risk factor for betrayal trauma in adolescence and adulthood (Gobin & Freyd, 2009; Babcock & DePrince, 2013; Mackelprang et al., 2014). Participants who experienced childhood betrayal trauma were 4.31 times more likely to experience adolescent betrayal trauma and 5.44 times more likely to experience adulthood betrayal trauma (Gobin & Freyd, 2009). Higher betrayal trauma in childhood was related to

ongoing IPV victimization (Babcock & DePrince, 2013). Childhood physical, psychological, and sexual abuse and neglect were all positively associated with IPV victimization in a meta-analysis, although childhood abuse was not conceptualized as betrayal trauma (Li et al., 2019). Findings thus support the notion that childhood betrayal trauma is a risk factor for IPV victimization. High betrayal traumas are associated with impairment in adulthood interpersonal functioning (Cloitre et al., 2002; Cloitre & Rosenberg, 2006; Cloitre et al., 1997; Gobin & Freyd, 2009; Messman-Moore & Coates, 2007), such as a decreased ability to detect harm in relationships (DePrince, 2005; DePrince et al., 2009; Marx et al., 2005; Marx & Soler-Baillo, 2005; Messman-Moore & Brown, 2006). It is possible that this decreased ability to detect harm stems from childhood betrayal trauma and continues into adulthood to influence perceptions of abusive relationships. It is also possible that attachment insecurity mediates the association between childhood betrayal trauma and IPV victimization because insecure attachment styles may impair positive functioning in romantic relationships (McCarthy, 1999). The present study aimed to explore these connections further.

Attachment

Attachment theory proposes that infants are born with an innate drive to seek proximity to others when faced with threat or danger, and over the course of the first year of life, these others can be selected as attachment figures (e.g., parents, caretakers) (Bowlby, 1982b). Relationships with attachment figures who are available and responsive support the development of a secure attachment style in children (Mikulincer & Shaver, 2011). However, there is ample evidence that relationships with attachment figures who are unavailable, unresponsive, or abusive interfere with the development of a secure attachment style and instead result in insecure attachment styles in children (Briere et al., 2017; Finzi et al., 2001). In psychoanalytic theory and

attachment theory, the prototype hypothesis proposes that the relationship between a child and their mother is a prototype for or influence on future romantic relationships (Freud, 1940; Bowlby, 1973; Kondo-Ikemura & Waters, 1995; Posada et al., 1995; Waters et al., 1995). Bowlby (1973, 1980, 1988) posited that internal working models of oneself and the people with whom one forms relationships are based on experiences with one's primary attachment figure. These internal working models are constantly evolving and can thus change in response to life experiences, including later attachment relationships (e.g., trauma perpetrated by a loved one). There are weaker and stronger versions of the prototype hypothesis's assertions. Some variations of the prototype hypothesis posit that people pursue romantic relationships similar to those they had with their parents. Owens and colleagues (1995) found little evidence for the "strong" version of the prototype hypothesis, or the theory that an internal working model based on interactions with a primary attachment figure in childhood provides the basis for understanding all future romantic relationships. It appears that, during early experiences with primary attachment figures, a set of behaviors develops that permits people to recreate aspects of earlier relationships with future romantic partners (Sroufe & Fleeson, 1986; Owens et al., 1995). For example, adults with insecure attachment styles may act in ways that cause conflict and make events in the relationship difficult to understand or predict (Owens et al., 1995).

Attachment styles in adulthood can be conceptualized as having two continuous dimensions: anxiety and avoidance. Attachment anxiety is characterized by a hyperactivation of the attachment system, which involves increased vigilance toward threats to the relationship and proximity-seeking (Mikulincer & Shaver, 2016). Attachment avoidance is characterized by a deactivation of the attachment system, which involves seeking distance from one's partner (Mikulincer & Shaver, 2016). Researchers have identified four attachment styles in adults that

fall along these two dimensions: secure (low anxiety and low avoidance), anxious-preoccupied (high anxiety and low avoidance), dismissive-avoidant (low anxiety and high avoidance), and fearful-avoidant (high anxiety and high avoidance) (Bartholomew & Horowitz, 1991). Adults with a secure attachment style are self-confident and comfortable with intimacy and autonomy in close relationships. Adults with an anxious-preoccupied attachment style depend on others for their sense of self-worth. Adults with a dismissive-avoidant attachment style are self-dependent, are uncomfortable with close relationships, and downplay their need for others. Lastly, adults with a fearful-avoidant attachment style have low self-esteem, depend on others for their sense of self-worth, and are afraid of rejection (Allison et al., 2008; Bartholomew & Horowitz, 1991). Insecure attachment styles are relatively common in the general population. Fifty-six percent of participants identified themselves as secure, 23% were avoidant, and 20% were anxious/ambivalent (Hazan & Shaver, 1987). Additionally, using the Adult Attachment Interview (AAI; George et al., 1985) in an adolescent sample, 52% of participants had a secure-autonomous attachment style, 35% were dismissing, and 13% were preoccupied (Bakermans-Kranenburg & van IJzendoorn, 2009).

There are many methods of assessing attachment style, and they differ depending on their target age group. Two of the most common ways of assessing attachment in adults are the Adult Attachment Interview (AAI; George et al., 1985) (a semi-structured clinical interview asking various questions about family situation and upbringing, relationships with caregivers, etc., which takes a categorical approach to attachment styles) and the Experiences in Close Relationships-Revised (ECR-R; Fraley et al., 2000) Questionnaire (a brief self-report measure asking questions about intimacy, rejection, and abandonment, which takes a dimensional approach to attachment styles).

Childhood Betrayal Trauma and Attachment

Betrayal trauma theory can be explained using attachment theory as a conceptual framework, as childhood betrayal trauma can lend itself to insecure attachment styles. Childhood betrayal trauma and attachment insecurity have been associated in previous studies, though findings differ regarding the type of insecure attachment style involved. Lifetime betrayal trauma victimization was associated with attachment anxiety but not attachment avoidance (Choi & Kangas, 2020). However, this study examined lifetime betrayal trauma rather than childhood betrayal trauma. Child abuse experienced by adolescents was significantly related to greater avoidant attachment among adolescents (Levendosky et al., 2002). However, this study did not specifically examine childhood betrayal trauma. Women who were sexually abused as children by a family member had more adult attachment avoidance than those who were not abused and those who were sexually abused by a nonfamily member (Swanson & Mallinckrodt, 2001). Lastly, childhood betrayal trauma victimization is positively associated with both anxious ($r = .22$) and avoidant ($r = .40$) attachment (Owen et al., 2012). Childhood betrayal trauma was significantly positively correlated with fearful attachment (high anxiety and high avoidance) ($r = .28$), but childhood betrayal trauma was not significantly correlated with preoccupied attachment (high anxiety and low avoidance) or dismissive attachment (low anxiety and high avoidance) (Pearce et al., 2016). High betrayal trauma scores were negatively correlated with secure attachment style ($r = -.30$); however, this study assessed betrayal trauma in general, rather than childhood betrayal trauma specifically (Klest, 2019). Among women, mother-perpetrated childhood maltreatment was not associated with attachment, while father-perpetrated childhood maltreatment was associated with attachment anxiety and avoidance (Godbout et al., 2019). Among men, mother-perpetrated childhood maltreatment was associated with attachment

anxiety, while father-perpetrated childhood maltreatment was associated with attachment avoidance (Godbout et al., 2019). Thus, studies point to a positive association between childhood betrayal trauma and attachment insecurity, but findings are somewhat gender-specific. The association between childhood betrayal trauma and attachment insecurity likely exists because betrayal trauma experiences in childhood can foster attachment insecurity. The current study aimed to clarify these associations by re-examining whether childhood betrayal trauma predicts attachment anxiety, avoidance, or both.

Anxious Attachment: Associations with IPV Perpetration and Victimization

Interestingly, from an attachment theory perspective, IPV perpetration may represent an attempt to meet attachment needs (Park, 2016). Individuals with a greater anxious attachment style crave high emotional and physical proximity to their partners and fear abandonment. Thus, they may try to pursue their desired level of closeness through violence, particularly if they perceive a threat to the relationship or believe that their partner is disengaging from the relationship (Allison et al., 2008; Henderson et al., 2005).

Most research on attachment and IPV perpetration points to an association between anxious attachment and IPV perpetration. In Velotti and colleagues' (2022) meta-analysis, the association between attachment anxiety and IPV perpetration was significant regardless of the type of violence used (Velotti et al., 2022). For generic (when the authors did not specify the type of IPV), psychological, and sexual violence, large associations were found between attachment anxiety and IPV perpetration (Velotti et al., 2022). For physical violence, a moderate association was found between attachment anxiety and IPV perpetration (Velotti et al., 2022). The association between attachment avoidance and generic violence was insignificant (Velotti et al., 2022). However, this meta-analysis did not examine mediation studies (Velotti et al., 2022).

Among nonviolent, perpetrator-only, victim-only, and bi-directionally violent (i.e., those who are both the perpetrator and the victim of IPV) females, bi-directionally violent females had the highest levels of attachment anxiety (Orcutt et al., 2005). Additionally, females high in attachment anxiety and low in attachment avoidance were more likely to perpetrate violence than females high in both anxiety and avoidance (Orcutt et al., 2005). Sonkin and colleagues (2019) studied the psychological domestic violence aspects of derogation and control, jealous-hypervigilance, and threats-control of space in a sample of male and female court-mandated IPV perpetrators (Sonkin et al., 2019). Among the whole sample, attachment anxiety was positively associated with derogation and control and with jealous hypervigilance (Sonkin et al., 2019). Attachment anxiety was positively related to threats of controlling space among only men and with derogation and control and jealous-hypervigilance among only women (Sonkin et al., 2019). Women with an anxious attachment style inflicted more injuries and were less likely to use negotiation during conflict (Bélanger et al., 2015). Female IPV offenders had higher levels of attachment anxiety than attachment avoidance (Mckeown, 2014). In a sample of court-mandated male IPV perpetrators, psychological IPV perpetration was correlated with both anxious and avoidant attachment (though more so with anxious attachment). In contrast, physical IPV perpetration was associated with anxious attachment but not avoidant attachment (Mauricio et al., 2007). Anxious attachment is a strong risk factor for physical teen dating violence perpetration (Emanuels et al., 2022). Individuals with an anxious attachment style were likely to be perpetrators of IPV compared to those without anxious attachment (Magorokosho & Mberira, 2020). In a longitudinal study, attachment anxiety (assessed at the start of the study) positively predicted adolescent IPV perpetration (assessed 10 months after) (Ulloa et al., 2014). Depressive symptoms (assessed 10 months after) partially mediated the association between attachment

anxiety (assessed at the start of the study) and adolescent IPV perpetration (assessed 10 months after) (Ulloa et al., 2014). Thus, research has fairly consistently revealed a positive association between attachment anxiety and IPV perpetration, which may result when individuals with an anxious attachment style try to get their attachment needs met through violence.

From a theoretical perspective, attachment anxiety may lend itself to vulnerability to IPV victimization due to individuals' fear of abandonment and separation. The loss of even an abusive relationship is considered unbearable (Velotti et al., 2018; Henderson et al., 1997). Anxiously attached individuals also tend to have low self-esteem (Mikulincer & Shaver, 2005), which may lead them to underestimate their ability to separate from an abusive partner (Velotti et al., 2018).

Some research points to the role of attachment anxiety in predicting IPV victimization. In a prospective study, attachment was assessed at the start of the study, and IPV was assessed 6 months later (Sandberg et al., 2019). Attachment anxiety was positively associated with physical IPV victimization, controlling for prior interpersonal trauma (Sandberg et al., 2019). However, attachment avoidance was unrelated to IPV victimization (Sandberg et al., 2019). Compared to women who had experienced IPV in one relationship, women who experienced IPV in multiple relationships had higher attachment anxiety (Ørke et al., 2021). Attachment anxiety (but not attachment avoidance) had significant positive associations with IPV perpetration and victimization (Barbaro et al., 2019). IPV victimization in college dating relationships was associated with an anxious attachment style (McClure & Parmenter, 2017). An anxious attachment style predicted females being victims of marital violence and of men not being victims (Bond & Bond, 2004). In a longitudinal study, attachment anxiety (assessed at the start of the study) was positively associated with psychological IPV perpetration and victimization

one year later (Kanemasa et al., 2022). Thus, research has revealed a notable association between attachment anxiety and IPV victimization, which may be due to anxiously attached individuals' fears of abandonment and separation.

Avoidant Attachment: Associations with IPV Perpetration and Victimization

Contrary to people with an anxious attachment style, individuals with an avoidant attachment style crave autonomy and independence. They are uncomfortable with closeness in relationships, so they may use violence to distance themselves from or push away their partner when they feel they are being approached too closely (Allison et al., 2008).

Limited research has pointed to an association between avoidant attachment and IPV perpetration. A moderate effect size was found for studies on sexual violence perpetration, pointing to an association with attachment avoidance (Velotti et al., 2022). Avoidant attachment is a significant risk factor for teen dating violence perpetration (Emanuel et al., 2022). Thus, there is not much research supporting a link between attachment avoidance and IPV perpetration.

According to attachment theory, individuals with an avoidant attachment style often believe that showing their vulnerabilities to others is unbearable because they expect that their request for help will be rejected by other people (Velotti et al., 2018). Lack of social support may thus be a problem for avoidantly attached individuals (Davis et al., 2002), which makes it difficult to leave an abusive relationship.

Research points to the role of attachment avoidance in predicting IPV victimization. For instance, compared to women who hadn't experienced IPV, women who had experienced IPV in either one or numerous relationships had higher attachment avoidance (Ørke et al., 2021). In a prospective study, attachment and anger were assessed at the start of the study, and IPV was assessed two months later (Kuijpers et al., 2012). Anger moderated the association between

avoidant attachment and physical and psychological IPV revictimization (Kuijpers et al., 2012). Specifically, the association between avoidant attachment and severity of physical and psychological IPV revictimization was stronger at high and mean levels of anger (Kuijpers et al., 2012). Men with an avoidant attachment style had higher physical IPV victimization and more use of negotiation during conflict (Bélanger et al., 2015). Avoidant attachment style significantly predicted victimization and perpetration among females. Thus, research suggests a link between attachment avoidance and IPV victimization, perhaps due to avoidantly attached individuals' fears that their requests for help will be rejected.

Anxious and Avoidant Attachment: Associations with IPV Perpetration and Victimization

Furthermore, some research has found an association between both anxious and avoidant attachment and IPV perpetration. In a longitudinal study, men and women with greater prenatal attachment anxiety, as well as men with greater prenatal attachment avoidance, were less satisfied with their relationships at 1 year postpartum (Gou & Woodin, 2017). Subsequently, participants who were less satisfied perpetrated psychological IPV more frequently at 2 years postpartum (Gou & Woodin, 2017). For IPV perpetrated by males toward female partners, the violent males were more likely to have a lower secure attachment style and a greater fearful attachment style (high anxiety and high avoidance) (Kesner & McKenry, 1998). In a meta-analysis of studies that used a variety of attachment measures, anxious, avoidant, and disorganized (high anxiety and high avoidance) attachment were all associated with physical IPV perpetration and victimization (Spencer et al., 2020). In contrast, secure attachment was negatively associated with IPV perpetration and victimization (Spencer et al., 2020). The “mispairing” of an anxious female partner with an avoidant male partner was associated with violence by both male and female partners (Doumas et al., 2008). When controlling for partner

violence, the association between attachment and violence was only significant for males (Doumas et al., 2008). There thus appears to be a positive association between attachment insecurity and IPV perpetration, with some mixed findings regarding whether attachment anxiety and/or attachment avoidance is involved, though more studies seem to point to attachment anxiety. From a theoretical stance, it appears that the goal of IPV perpetration differs depending on the insecure attachment style, and IPV perpetration serves to meet attachment needs.

Research has also pointed to attachment anxiety and avoidance as predictors of IPV victimization. Women who experienced IPV have higher levels of attachment insecurity (both anxious and avoidant) toward their mothers and their romantic partners than women who have not experienced IPV (Ponti & Tani, 2019). Anxious and avoidant attachment styles were associated with sexual and psychological IPV victimization (Bonache et al., 2019). Insecure adult attachment styles are also risk factors for IPV victimization by multiple romantic partners (Alexander, 2009; Doumas et al., 2008; Kuijpers et al., 2012). Anxious and avoidant attachment styles predicted sexual and psychological IPV victimization (Bonache et al., 2016). Attachment insecurity thus appears to be a risk factor for IPV victimization, and both anxious and avoidant attachment are involved in this association, which is in line with theories suggesting that both of these insecure attachment styles confer certain vulnerabilities to being a victim of IPV. The present study aimed to investigate a mechanism for both attachment styles in the association between childhood betrayal trauma and IPV (victimization and perpetration).

Childhood Betrayal Trauma, Attachment, and IPV Perpetration and Victimization

Very little research has been conducted on childhood betrayal trauma, attachment, and IPV perpetration together. In a sample of adolescents with borderline (IQ of 70-85) to mild (IQ of 50-70) intellectual disability and with average IQ, who had experienced childhood

maltreatment, IQ moderated the association between avoidant attachment style and dating violence victimization, and between avoidant attachment style and dating violence perpetration (Weiss et al., 2011). However, this study examined general childhood maltreatment, not childhood betrayal trauma. In a mediation study, childhood sexual abuse directly predicted attachment anxiety, which in turn directly predicted psychological aggression perpetration and physical aggression perpetration (Brassard, 2014). Attachment anxiety also predicted psychological aggression perpetration and physical aggression perpetration indirectly through trait anger (Brassard, 2014). Attachment avoidance indirectly predicted psychological aggression perpetration and physical aggression perpetration through trait anger (Brassard, 2014). However, this study assessed general childhood sexual abuse perpetrated by anyone, not childhood betrayal trauma specifically (Brassard, 2014). Childhood betrayal trauma may lend itself to the development of attachment insecurity, and individuals with insecure attachment styles may use violence to get their attachment needs met. Given this very limited past research, further research is needed on the associations among childhood betrayal trauma, attachment insecurity, and IPV perpetration.

Limited research has also been conducted on childhood betrayal trauma, attachment, and IPV victimization together. In one study, insecure attachment and depressive symptoms sequentially mediated the association between childhood maltreatment and IPV victimization (Kong, 2018). This study assessed childhood betrayal trauma because questions asked about family members or other adults in the household (Kong, 2018). Early exposure to violence by parents (specifically, experiencing childhood psychological violence by parents and experiencing childhood physical violence by parents) predicted attachment anxiety, avoidance, and adulthood physical IPV, with attachment anxiety and avoidance serving as partial mediators between early

exposure to violence by parents and adulthood physical IPV (Godbout et al., 2009). Attachment anxiety ($r = .21$) and attachment avoidance ($r = .15$) each also predicted adulthood physical IPV, which was a continuous variable (Godbout et al., 2009). However, this study did not specifically examine the mediating role of attachment in the association between childhood betrayal trauma and later IPV. Attachment anxiety partially mediated the association between childhood maltreatment and adulthood betrayal trauma, which can include IPV victimization (Hocking et al., 2016). However, this study did not treat childhood maltreatment as a betrayal trauma. Also, it did not include avoidant attachment and did not look specifically at IPV victimization and perpetration, but rather at betrayal trauma re-victimization in general. Childhood betrayal trauma may lend itself to the development of attachment insecurity, which in turn may confer vulnerability to being a victim of IPV. There are thus associations among childhood betrayal trauma, attachment insecurity, and IPV victimization. However, most studies have examined general childhood maltreatment rather than childhood betrayal trauma because the nature of the relationship between the victim and the perpetrator is either not close or unspecified. Attachment anxiety and avoidance may mediate the association between childhood betrayal trauma and IPV victimization. The present study aimed to innovatively investigate childhood betrayal trauma, attachment anxiety and avoidance, and IPV perpetration and victimization together in one model.

Affective Instability

Affective instability is a symptom observed in borderline personality disorder, bipolar disorder, depressive disorders, PTSD, premenstrual dysphoric disorder, eating disorders, alcohol use disorder, seizures, and brain lesions (Renaud & Zacchia, 2012). Often described as an “emotional roller coaster” to those who experience it, affective instability consists of affects that each have their own characteristics, amplitude, and duration; rapid shifting to intense affect; and

dysfunctional regulation of emotions (Renaud & Zacchia, 2012). The dimensions of affective instability include valence, high affective intensity, being especially reactive to environmental triggers, rapid changes in affect, and poor affect regulation (Renaud & Zacchia, 2012). Mood instability predicts interpersonal problems (Bowen et al., 2017). Affective instability was selected as a mechanism of interest in the present study because of its important independent associations with attachment insecurity and IPV (to be discussed next). It is possible that affective instability could act as a mediator or moderator in the association between anxious attachment and IPV perpetration.

Childhood Betrayal Trauma and Affective Instability

Research has revealed a positive association between childhood betrayal trauma and emotion dysregulation. Childhood maltreatment, particularly of a repeated nature, interferes with the development of appropriate emotion regulation skills (Burns et al., 2010). Adolescents with a history of betrayal trauma reported more difficulties with emotion regulation than adolescents exposed only to nonbetrayal trauma (Jacoby et al., 2016). Among adolescent girls and boys, betrayal trauma predicted difficulties in emotion regulation (Keng et al., 2019; Bennett et al., 2016), specifically lack of emotional awareness, lack of emotional clarity, difficulty controlling behavior, difficulty with goal-directed behavior, nonacceptance of emotions, and limited access to emotion regulation strategies (Bennett et al., 2016). Victims of childhood maltreatment have greater affective lability than those who have not experienced any victimization (Crow et al., 2014; Kim-Spoon et al., 2012); however, these studies did not specifically examine childhood betrayal trauma. Childhood maltreatment has been positively associated with affective lability (Almeida et al., 2023) and emotion dysregulation (Yuan et al., 2023; Gruhn & Compas, 2020); however, these studies did not specifically examine childhood betrayal trauma. Based on these

findings, it is reasonable to believe that childhood betrayal trauma will also be associated with the related construct of affective instability, and the present study aimed to explore this relationship.

Attachment and Affective Instability

Research has revealed an important connection between attachment insecurity and emotion dysregulation and the tendency toward negative affect. Interactions between a caregiver and child are closely related to the child's (and future adult's) emotion regulation (Mosquera et al., 2014; Brenning & Braet, 2013). Different attachment patterns may be associated with various emotion regulation problems (Mosquera et al., 2014; Brenning & Braet, 2013; Spangler & Grossmann, 1993; Mikulincer & Shaver, 2007). Children with a secure attachment style learn effective emotion regulation strategies within the relationship with the caregiver and can use these strategies outside of the relationship (Brumariu, 2015). Since people with an anxious attachment style are afraid of abandonment and rejection and are highly sensitive to threats to their relationships, conflict and distress in relationships threaten their sense of security and increase their fears. To try to regulate their emotional distress, they often use hyperactivating or heightening maladaptive emotion regulation strategies (e.g., distress, increased vigilance, repeated protest, clinging, controlling, reassurance-seeking) – which paradoxically perpetuate their attachment related distress – to gain attention from others and to ensure that others will be available (Brenning & Braet, 2013; Pietromonaco et al., 2006). These emotion regulation strategies may leave their partners feeling criticized or overwhelmed (Brennan et al., 1998; Mikulincer & Shaver, 2008; Mikulincer et al., 2003). Since people with an avoidant attachment style have learned that attachment leads to rejection and negative feelings, they are uncomfortable being vulnerable, do not expect that their distress can be eased by others, avoid

proximity-seeking, and are highly sensitive to threats to their independence, and conflict and distress in relationships threaten their sense of independence. To try to regulate their emotional distress, they often use deactivating or suppressing maladaptive emotion regulation strategies (e.g., detachment, self-reliance, suppressing their worries, downplaying the importance of conflicts) – which paradoxically perpetuate their attachment-related distress – to get rid of negative emotions (Brenning & Braet, 2013; Pietromonaco et al., 2006). These emotion regulation strategies may leave their partners feeling rejected or unloved (Brennan et al., 1998; Mikulincer & Florian, 1998; Mikulincer & Shaver, 2008; Mikulincer et al., 2003). People with an anxious attachment style have high emotional awareness. Still, they have trouble identifying emotions and managing impulses, while people with an avoidant attachment style lack emotional awareness and react less to their emotions (Stevens, 2014). Additionally, anxious attachment predicted emotion dysregulation among both women and men, while avoidant attachment predicted emotion dysregulation among only women (though to a lesser extent than attachment anxiety).

Insecure/ambivalent (high anxiety, low avoidance) infants displayed a high level of negative emotionality in the Strange Situation (Cassidy, 1994; Ainsworth et al., 1978; Braungart & Stifter, 1991; Shiller et al., 1986). In contrast, insecure/avoidant infants have been found to mask their negative emotions while interacting with their caregiver, perhaps to convey to the caregiver that the infant will not seek care and to avoid risking further rejection from the caregiver (Cassidy, 1994; Bowlby, 1980; Main, 1981; Malatesta et al., 1989; Spangler & Grossmann, 1993; Dozier & Kohak, 1992; Grossmann et al., 1986; Lutkenhaus et al., 1985; Malatesta et al., 1989). Anxious-ambivalent (high anxiety, low avoidance) individuals are more emotionally reactive (Pietromonaco et al., 2006), tending to have more intense emotions (e.g.,

Collins & Read, 1990; Pietromonaco & Feldman Barrett, 1997), greater shifts in emotions (Hazan & Shaver, 1987), and more emotional expression (Bartholomew & Horowitz, 1991). However, avoidant individuals report little emotionality (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Hazan & Shaver, 1987; Pietromonaco & Carnelley, 1994; Pietromonaco & Feldman Barrett, 1997). Most research thus seems to point to anxious attachment as being more strongly linked to affective instability than avoidant attachment, and the current study aimed to explore this potential association.

In a sample of 9- to 11-year-old children, more avoidant children had less of a rise in negative affect after a stressor task (i.e., showed less reactivity of negative affect) (Abtahi & Kerns, 2017). Attachment ambivalence predicted more negative affect after the stressor task, suggesting that ambivalent children heightened the expression of emotion (Abtahi & Kerns, 2017). Ambivalent children also showed less suppression of high-frequency heart rate variability (HF-HRV) in response to stress (Abtahi & Kerns, 2017). Trait negative affect and impulsivity fully mediated the association between attachment anxiety (but not attachment avoidance) and BPD features (Scott et al., 2009). The association between a perceived partner's agreeable behavior and a participant's negative affect was stronger for participants who were higher in attachment anxiety and weaker for participants higher in attachment avoidance (Sadikaj, 2011).

Some, but far less, research has pointed to a link between negative affect and attachment avoidance: mentalizing (the ability to understand others' and one's mental states) moderated the association between attachment avoidance (but not attachment anxiety) and the negative affectivity personality domain (Cooper et al., 2021). Thus, most studies point to anxious attachment in particular as being linked to the tendency toward negative affect. Because attachment insecurity, particularly attachment anxiety, has been linked to poor emotion

regulation skills and the tendency toward negative affect, it is reasonable to believe that attachment anxiety may also be associated with affective instability. It is also possible that attachment insecurity and affective instability interact to predict IPV outcomes. The present study aimed to fill this gap in the literature by examining these under-researched connections.

Affective Instability and IPV Perpetration

Most research has revealed an association between emotion dysregulation and IPV perpetration, rather than IPV victimization. Previous studies have shown a positive association between IPV perpetration and emotion dysregulation (Gratz et al., 2009; McNulty & Hellmuth, 2008; Shorey et al., 2011, 2015; Stuart et al., 2006). IPV perpetration may be a maladaptive strategy that some people use to try to regulate their emotions (e.g., Bushman et al., 2001; Jakupcak et al., 2002). Variability in negative affect was positively associated with IPV perpetrated by husbands who had wives who also reported perpetrating IPV, suggesting that the ability to regulate negative emotions may help partners avoid IPV, particularly when faced with a partner's IPV perpetration (McNulty & Hellmuth, 2008). Greater emotional dysregulation of either partner was associated with a greater risk of physical and sexual IPV perpetration and a greater chance of psychological IPV perpetration when only the perpetrator was dysregulated (Lee et al., 2020). Moreover, when men were in relationships with regulated women, their dysregulation was not associated with their IPV perpetration. Still, when men were with dysregulated women, their dysregulation was related to their IPV perpetration (Lee et al., 2020). Overall (for males and females), emotional lability was positively correlated with severity and frequency of psychological aggression perpetration; lifetime, past-year, and frequency of physical assault perpetration; lifetime and frequency of sexual coercion perpetration; lifetime, past-year, and frequency of injury perpetration; and minor, severe, frequency of, and variability

of all IPV perpetration (Munro & Sellbom, 2020). In a sample of women arrested for IPV and court-ordered to batterer intervention programs, the Difficulties in Emotion Regulation Scale's (DERS; Gratz & Roemer, 2004) impulse control difficulties domain was associated with physical IPV perpetration (Grigorian et al., 2019). Among women, physical IPV perpetration was positively related to the DERS subscales of impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity (Bliton et al., 2016). Among women, psychological IPV perpetration was positively associated with the DERS subscales of impulse control difficulties, difficulties in goal-directed behavior, lack of emotional clarity, and limited access to emotion regulation strategies (Bliton et al., 2016). Among men, psychological IPV perpetration was positively associated with the DERS subscales of impulse control difficulties and lack of emotional clarity (Bliton et al., 2016). Given this past research on the association between emotion dysregulation and IPV perpetration, which may exist because individuals may use violence as a maladaptive emotion regulation strategy, it is reasonable to believe that affective instability will also be associated with IPV perpetration, and the present study aimed to examine this proposed association.

Several studies have pointed to affective instability or emotion dysregulation as a moderator or mediator in the association between various variables and IPV. Emotion dysregulation (though not affective instability specifically) has been found to serve as a moderator between a given variable and IPV perpetration (Bomar, 2017; Conzemius et al., 2021; Shorey et al., 2015). Firstly, in a sample of men arrested for domestic violence and court-ordered to batterer intervention programs, emotion regulation moderated the association between exposure to inter-parental family-of-origin violence and psychological IPV perpetration (Bomar, 2017). Specifically, exposure to inter-parental family-of-origin violence was positively

associated with psychological IPV perpetration in men who reported low, but not high, levels of emotion regulation (Bomar, 2017). Additionally, emotion dysregulation moderated the association between traditional gender role beliefs and psychological IPV perpetration (Conzemius et al., 2021). Specifically, traditional gender role beliefs were positively associated with psychological IPV perpetration among participants with average and high emotion dysregulation, but not low emotion dysregulation (Conzemius et al., 2021). Lastly, emotion regulation difficulties moderated the association between proximal negative affect and the probability of physical IPV perpetration (Shorey et al., 2015). Specifically, proximal negative affect was associated with an increased likelihood of physical IPV perpetration when emotion regulation difficulties were high but not low (Shorey et al., 2015). Thus, research has revealed that emotion dysregulation serves as a moderator in the association between a given variable and IPV perpetration. Given this past research, the present study aimed to determine if affective instability, a construct related to emotion dysregulation, moderates the association between attachment anxiety and IPV perpetration.

Additionally, emotion dysregulation (and, in one study, affective instability (Krause-Utz et al., 2021a)) has been found to mediate the association between a given variable and IPV perpetration (and, in one study, IPV victimization (Lee, 2021)). Borderline personality features (affective instability and negative relationships) partially mediated the association between childhood maltreatment severity and IPV perpetration (Krause-Utz et al., 2021a). There was no association with affective instability for IPV victimization (Krause-Utz et al., 2021a). Anger misappraisal and emotion dysregulation partially mediated the association between trauma cognitions and overall IPV perpetration (Marshall et al., 2011). Additionally, anger misappraisal and emotion dysregulation partially mediated the association between trauma cognitions and

psychological IPV perpetration (Marshall et al., 2011). Adaptive emotion regulation strategies (acceptance, reappraisal, refocus on planning, and mindfulness) partially mediated the association between family-of-origin violence and IPV perpetration (Orozco-Vargas et al., 2021). Additionally, maladaptive emotion regulation strategies (rumination, difficulties controlling impulsive behaviors, and limited access to regulation) partially mediated the association between family-of-origin violence and IPV perpetration (Orozco-Vargas et al., 2021). Among men, emotion dysregulation fully mediated the association between childhood maltreatment and the frequency of IPV perpetration (Gratz et al., 2009). Lastly, emotion dysregulation partially mediated the association between childhood emotional abuse and IPV perpetration (Lee, 2021). Emotion dysregulation also partially mediated the association between childhood emotional abuse and IPV victimization (Lee, 2021). Thus, emotion dysregulation and affective instability have been found to mediate the association between a given variable and IPV perpetration. Given these findings, the present study aimed to extend the research literature by testing affective instability as a mediator between attachment anxiety and IPV perpetration.

Affective Instability and IPV Victimization

Limited research has revealed an association between emotion regulation or negative affect and IPV victimization. In a study of 17- to 22-year-olds over seven consecutive days, participants who experienced high psychological IPV victimization (compared to low psychological IPV victimization) were more interpersonally sensitive (i.e., had greater affective reactions to day-to-day interpersonal hassles) (Gallaty & Zimmer-Gembeck, 2008). In a sample of women, participants who reported higher levels of psychological IPV victimization had lower negative mood regulation expectancies (NMRE) (i.e., lower confidence that their attempts to regulate negative moods will be successful) (Shepherd-McMullen et al., 2015). NMRE

moderated the association between psychological IPV victimization and avoidant coping (Shepherd-McMullen et al., 2015). Maladaptive cognitive emotion regulation partially mediated the association between childhood sexual abuse and adult sexual IPV victimization (Krause-Utz et al., 2021). One study found that IPV victimization causes mood lability rather than the reverse (Bogat et al., 2020). Given that limited research supports a link between emotion dysregulation or negative affect and IPV victimization, and because more research supports a link between affective instability or emotion dysregulation and IPV perpetration, only the latter association was tested in the present study.

Attachment Anxiety, Affective Instability, and IPV Perpetration

There have been a few studies examining attachment, emotion dysregulation, and IPV perpetration together, with most studies pointing to the role of attachment anxiety. Firstly, there were significant positive associations between attachment insecurity (both anxious and avoidant), the emotion regulation strategy of expressive suppression, and IPV perpetration (Robinson, 2017). Furthermore, expressive suppression partially mediated the association between anxious attachment (but not avoidant attachment) and IPV perpetration (Robinson, 2017). Additionally, anxious attachment predicted both emotion dysregulation and psychological IPV perpetration among males, but this was not the case for avoidant attachment (Cheche Hoover & Jackson, 2021). Anxious attachment in females predicted both emotion dysregulation and psychological IPV perpetration (Cheche Hoover & Jackson, 2021). Female avoidant attachment also predicted female emotion dysregulation, but not female psychological IPV perpetration (Cheche Hoover & Jackson, 2021). Furthermore, attachment anxiety, the DERS Impulse subscale, and an interaction between attachment avoidance and partner's attachment anxiety were associated with self-reported, but not partner-reported, male IPV perpetration

(Pollard & Cantos, 2021). For females, attachment anxiety was associated with female IPV perpetration (self-reported and partner-reported), and the DERS Impulse subscale was related to self-reported female IPV perpetration (Pollard & Cantos, 2021). Lastly, emotion regulation difficulties mediated the association between attachment insecurity (both anxious and avoidant) and physical IPV perpetration among both males and females (Guzmán-González et al., 2016). Thus, there appears to be an association among attachment insecurity (mainly attachment anxiety), emotion dysregulation, and IPV perpetration. These findings could be expanded to apply to affective instability specifically, and the present study aimed to fill this gap in the literature.

Attachment, Affective Instability, and IPV Victimization

There has been very little research conducted on attachment, emotion dysregulation, and IPV victimization together, and these studies do not specifically focus on affective instability. Emotion regulation fully mediated the associations between attachment avoidance and NSSI (nonsuicidal self-injury), attachment anxiety and NSSI, IPV victimization and NSSI, and IPV perpetration and NSSI (Silva et al., 2017). Peer attachment positively predicted self-efficacy to express positive affect, which in turn negatively predicted peer victimization (Samper-García et al., 2021). Additionally, father attachment positively predicted self-efficacy in regulating negative affect, negatively predicting peer victimization (Samper-García et al., 2021). However, these findings do not involve attachment toward one's romantic partner or IPV victimization. Due to the lack of precedent, we did not make a priori directional hypotheses regarding affective instability and IPV victimization, but only IPV perpetration. However, if there are any significant effects of affective instability and IPV victimization, these will be detected.

Covariates: Age and Gender

Age served as a covariate in the present research. IPV is more common among people in certain age groups: IPV victimization occurs most often among 18- to 24-year-olds (8.7 out of 1,000 people are affected), 25- to 34-year-olds (7.3 per 1,000), and 35- to 49-year-olds (4.7 per 1,000) (Truman & Morgan, 2014). Older individuals have had more life experiences and thus more opportunities to be in romantic relationships and to potentially experience IPV. For example, in the U.S., the median age at first marriage is 29.8 for men and 28 for women (U.S. Census Bureau, 2019), and the median age at first divorce is 41.2 for men and 39.7 for women (Anderson, 2016). Older individuals have also had more time elapse since instances of childhood betrayal trauma and since the formation of their attachment style. Age-related differences in attitudes toward IPV have also been found, though the results differ between studies. Some studies have found that the tolerance of IPV against women is greater among young people than among older populations (Lawoko, 2008; Rani & Bonu, 2009; Rani et al., 2004). Another study found that tolerance of IPV increases with age (Neves & Almeida, 2020). When explicitly measuring attitudes toward IPV against women, there was lower tolerance among middle-aged adults and young adults, and higher tolerance among adolescents and older adults (Sánchez-Prada et al., 2020). However, when implicitly measuring attitudes, tolerance of IPV against women decreased with age (Sánchez-Prada et al., 2020). Given that age is associated with these variables, it needed to be controlled for in the present study.

Gender was also used as a covariate in the present study for various reasons. IPV victimization affects significantly more women than men (Smith et al., 2017). Research has been quite inconsistent regarding gender differences in IPV perpetration (Chan, 2011), and most IPV appears to be reciprocal (Langhinrichsen-Rohling et al., 2012). Gender differences have also been found in the types of IPV perpetrated against partners (Whitaker et al., 2007; Okuda et al.,

2015; Capinha et al., 2022). The 12-month prevalence of any IPV perpetration was 5.7% (4.2% in men and 7% in women) and was significantly more common for females than males (Okuda et al., 2015). In a study of IPV in Portugal, total lifetime IPV perpetration was 76.1% (75.3% for males, 76.4% for females). Childhood maltreatment is more prevalent for girls than boys (U.S. Department of Health and Human Services, 2012). Finally, gender differences in attachment have also been found, although the specific nature of these differences is inconsistent across studies. Men may exhibit more significant adulthood attachment avoidance than women (Del Giudice, 2011; Scharfe, 2017). Women report greater adulthood attachment anxiety (Del Giudice, 2011) or greater adulthood preoccupied attachment (Scharfe, 2017). Moreover, in a sample of undergraduate students in Turkey, males reported greater adulthood attachment security than females, while females reported a greater fearful adulthood attachment style than males (Karairmak & Duran, 2008). Lastly, in a sample of university students in Thailand, men reported greater adulthood attachment anxiety and avoidance than women (Wongpakaran et al., 2012). Given that gender differences have been found in these variables in the present study, it is reasonable to assume that gender could influence the results. Thus, it was controlled for.

Study Overview and Hypotheses

Past research findings have revealed independent associations between childhood betrayal trauma and two important interpersonal outcomes, IPV perpetration and victimization. Research has also demonstrated connections between childhood betrayal trauma and attachment insecurity; attachment insecurity and IPV perpetration and victimization; childhood betrayal trauma, attachment, and IPV perpetration and victimization; childhood betrayal trauma and affective instability; attachment insecurity and affective instability; affective instability and IPV perpetration and victimization; and attachment insecurity, affective instability, and IPV

victimization and perpetration. Existing studies have several limitations, and, most importantly, there is a paucity of studies exploring potential mechanisms of associations between childhood betrayal trauma and IPV. For instance, the mediating role of two attachment types in the association between childhood betrayal trauma and IPV is not known. Currently, the joint role of affective instability and attachment in the association between childhood betrayal trauma and IPV is unknown. In addition, findings are inconsistent as to whether anxious or avoidant attachment is implicated in the association with childhood betrayal trauma and IPV. Most research points to the role of anxious (vs. avoidant) attachment in connection with IPV perpetration, as there is limited research supporting an association between avoidant attachment and IPV perpetration. Regarding IPV perpetration and victimization, studies have generally been conducted on either one or the other. In addition, most research has been conducted on general childhood maltreatment rather than childhood betrayal trauma specifically. Likewise, most studies on attachment and IPV have focused not on affective instability, but rather on emotion dysregulation in general. It is possible that emotion dysregulation is a facet of affective instability that is most relevant to IPV (especially to IPV perpetration). The current study aimed to fill these gaps in the literature by proposing a comprehensive path model of the interrelations among childhood betrayal trauma, attachment anxiety and avoidance, affective instability, and IPV perpetration and victimization. The following hypotheses were put forth:

1. Attachment anxiety will partially mediate the association between childhood betrayal trauma and IPV victimization severity.
2. Attachment avoidance will partially mediate the association between childhood betrayal trauma and IPV victimization severity.

3. Attachment anxiety will partially mediate the association between childhood betrayal trauma and IPV perpetration severity.
4. Affective instability will partially mediate the association between attachment anxiety and IPV perpetration severity.
5. Affective instability will moderate the association between attachment anxiety and IPV perpetration severity, such that at higher levels of affective instability, the association between anxious attachment and IPV perpetration severity will be stronger than at mean or lower levels of the moderator.
6. All of the above effects are hypothesized to occur over and above the effects of age and gender, which served as covariates.

Method

Participants

This study used archival data and included variables selected by Dr. Raluca Simons as part of a larger study. Participants were recruited from December 2020 through February 2021 through Amazon Mechanical Turk (MTurk), an online data collection system, in an attempt to obtain a high degree of representativeness in the sample, as MTurk has been found to yield samples that have a high degree of representativeness and demographic diversity (Rand, 2012; Berinsky et al., 2012; Casler et al., 2013; Goodman et al., 2012; Huff & Tingley, 2015; Ipeirotis, 2010; Paolacci et al., 2010; Ross et al., 2010). Online data collection is valid (Gosling et al., 2004), and data obtained on MTurk has been found to be reliable (Buhrmester et al., 2011; Shapiro et al., 2013; Wymbs & Dawson, 2015). Inattention among participants is no more of a concern for studies conducted on MTurk compared to those conducted with other common

samples, though stringent exclusion criteria increase statistical power (Thomas & Clifford, 2017). Many scientific results from clinical (Shapiro et al., 2013), social (Horton et al., 2011; Rand et al., 2012; Summerville & Chartier, 2013), and cognitive psychology research (Casler et al., 2013; Crump et al., 2013) have been replicated on MTurk (Thomas & Clifford, 2017; Mullinix et al., 2015; Coppock, 2018).

Eligible participants were 349 men and women (57.18% men, 42.82% women) who were 20 through 65 years old. Eligible participants must have been 18-65 years old and been in a serious romantic relationship for at least 6 months (not including any time spent “on a break” or broken up) in which their current romantic partner had abused them in the past year during the time that they had been in a relationship. Six months was used as the threshold because length of current romantic relationship was not statistically controlled for, but it was important to control for it methodologically by having it as an eligibility criterion. IPV victimization in the past year by one’s romantic partner was assessed because this time frame was indicated in the instructions of the Revised Conflict Tactics Scales Short Form (CTS2S; Straus & Douglas, 2004).

Forty-six participants (12.99%) had never been married; 17 participants (4.80%) were engaged; 273 participants (77.12%) were married; 8 participants (2.26%) were in a civil union; 1 participant (0.28%) was separated; 9 participants (2.54%) were divorced; and no participants (0%) were widowed. Two hundred thirty-five participants (61.04%) were in a domestic partnership (i.e., lived with their partner). The mean relationship length among participants was 81.59 months ($SD = 101.35$), or 6.80 years. In terms of race, 71.55% of participants identified as White; 18.97% of participants identified as Black or African American; 5.17% of participants identified as Asian; 1.44% of participants identified as Hispanic, Latino, or Spanish; 0.57% of participants identified as American Indian, Native American, or Alaska Native; and 2.30% of

participants identified as multiracial. Regarding ethnicity, 281 participants (80.52%) identified as not of Hispanic, Latino, or Spanish origin, and 68 participants (19.48%) identified as of Hispanic, Latino, or Spanish origin. The mean number of years of education among participants was 15.60 ($SD = 5.46$). The mean number of children with their partner among participants was 1.40 ($SD = 1.30$). Forty-two participants (11.73%) were pregnant and/or in the process of adopting a child or children together with their partner; 216 participants (60.34%) were raising a child or children together with their partner; and 100 participants (27.93%) selected neither of these options. Participants endorsed having a mean of 2.44 previous abusive romantic partners not including their current partner ($SD = 6.59$). Lastly, 58.87% of participants endorsed experiencing some degree of childhood betrayal trauma, 80.72% of participants endorsed perpetrating IPV to some degree on the CTS2S, and 83.13% of participants endorsed being a victim of IPV to some degree on the CTS2S. A total of 939 participants were screened (this number does not include any repeated attempts that any participants made to take the screen).

Procedure

All participation and measures were completed online through MTurk. It was expected that participating in the study would take about 45 minutes. Participants who signed the consent form were then asked screening questions to determine their eligibility to participate in the full study. Based on their responses to the screening items, participants who were not eligible to participate in the study were redirected to a page that thanked them for their time. Eligible participants were redirected to the rest of the study items. Five attention check items created by Meade and Craig (2012) (e.g., “I have been to every country in the world,” “Respond with ‘strongly agree’ for this item”) were inserted at approximately equal intervals across the full survey. To increase the likelihood that participants responded honestly and did not simply

endorse screening items based on what they thought the study was examining, six distractor items that were not relevant to the purpose of the study were included in the screen. Some examples of these distractor items were “Have you experienced any delusions or hallucinations in the past month?” and “Are you allergic to any type of food?”. Half of the eligible participants were randomly directed to Form A of the full survey, and the other half were randomly directed to Form B of the full survey. The measures on the full survey were counterbalanced because they were in different orders in Form A and B. Participants who were not eligible to participate in the full study based on their responses to the screening items were not compensated. Eligible participants who completed the full study were paid \$2. Upon completion of the study, participants were thanked for their participation. Participants in the full survey were given a list of intimate partner violence resources to use if they so chose.

Measures

Screening Measures

Demographics and Background Information. Participants were asked to indicate their age, gender, marital status, relationship status, and length of their current romantic relationship (not including any time spent “on a break” or broken up) (Appendix B). Options were: less than 1 month, 1-2 months, 3-5 months, 6-8 months, 9-11 months, 12 months, and more than 12 months. Only participants who responded that they had been in their current relationship for at least 6 months on the screen were eligible for the full study.

Intimate Partner Violence Victimization. Participants were screened for intimate partner violence victimization by their current romantic partner using the Extended–Hurt, Insulted, Threaten, Scream tool (E-HITS; Chan et al., 2010) (Appendix B). The E-HITS is a 5-item self-report measure that assesses the frequency of IPV victimization. The measure’s

instructions prompt respondents to indicate how often their partner did each of five behaviors in the past 12 months (Iverson et al., 2015). For the present study, participants were asked to indicate on a 5-point Likert scale how often each behavior occurred, with 0 indicating “never,” 1 indicating “rarely,” 2 indicating “sometimes,” 3 indicating “fairly often,” and 4 indicating “frequently” (Iverson et al., 2015). An overall E-HITS score is calculated by adding scores on all items together (Iverson et al., 2015). Higher scores indicate a greater frequency of abuse (Chan et al., 2010). In a sample of female patients in the emergency departments of hospitals in Hong Kong, the internal consistency of the E-HITS was $\alpha = .90$, and the two-week test-retest reliability of the E-HITS was $r = .71$ for IPV survivors (Chan et al., 2010). A participant met the inclusion criterion of current IPV victimization if the participant responded other than “never” on any of the items. In the current study, $\alpha = 0.93$ for the E-HITS.

Measures for the Full Study

Demographics and Background Information. Participants were asked to indicate their partner’s gender; their ethnicity; race; years of education; length of their relationship; whether they were expecting to have or currently had and/or were raising a child or children with their partner; number of children; whether their partner had ever threatened, attempted, or committed suicide or homicide in the context of the relationship; and number of previous abusive romantic partners (Appendix C).

Childhood Betrayal Trauma. The Brief Betrayal Trauma Survey is a 12-item self-report measure of traumatic events and to what degree they involved someone close to the participant (Goldberg & Freyd, 2006) (Appendix D). Items on the scale are of different degrees of potential betrayal trauma: none, low (e.g., “Been in a major earthquake, fire, flood, hurricane, or tornado that resulted in significant loss of personal property, serious injury to yourself or a significant

other, or the fear of your own death”), medium (e.g., “You were deliberately attacked by someone with whom you were not close”), and high (e.g., “You were made to have some form of sexual contact, such as touching or penetration, by someone with whom you were very close (such as a parent or lover)”). Participants were asked to indicate whether they had experienced any of these events before age 18, or at age 18 or older (Goldberg & Freyd, 2006). For each age range, participants were asked to select the frequency of the event: “never,” “one or two times,” or “more than that.” Cronbach’s alpha was .83 for High Betrayal and .79 for Low Betrayal (Goldberg & Freyd, 2006; Hocking et al., 2016). In the current study, this measure was scored by creating an overall childhood betrayal trauma score that consists of the items on the scale that involve more betrayal (5 items; e.g., “Witnessed someone with whom you were very close deliberately attack another family member so severely as to result in marks, bruises, blood, broken bones, or broken teeth,” “You were made to have some form of sexual contact, such as touching or penetration, by someone with whom you were very close (such as a parent or lover)”). The response option “one or two times” was coded as 1, and the response option “more than that” was coded as 2. For the current study, only data from when participants were under age 18 was examined. In the current study, $\alpha = 0.78$ for childhood betrayal trauma using the BBTS.

Attachment Insecurity. The level of adulthood attachment insecurity was assessed using the Experiences in Close Relationships-Revised (ECR-R) Questionnaire (Fraley et al., 2000), a self-report measure consisting of 36 items rated on a 7-point Likert scale from 1 (“strongly disagree”) to 7 (“strongly agree”) (Appendix E). The measure’s instructions prompt respondents to respond based on “how they generally experience emotionally intimate relationships” (Fraley et al., 2000). The measure includes an 18-item attachment anxiety subscale (e.g., “I worry that

romantic partners won't care about me as much as I care about them") and an 18-item attachment avoidance subscale (e.g., "I prefer not to show a partner how I feel deep down"). Each participant's subscale score was obtained by averaging the items in that subscale. Higher scores indicate higher attachment insecurity. Cronbach's alphas for anxious and avoidant attachment subscales are .93 and .94, respectively (Sibley et al., 2005). In the current study, $\alpha = 0.96$ for the attachment anxiety subscale of the ECR-R, and $\alpha = 0.89$ for the attachment avoidance subscale of the ECR-R.

Affective Instability. Affective instability was measured using the affective instability subscale of the Borderline features (BOR) scale of the Personality Assessment Inventory (PAI; Morey, 2007) (items highlighted in Appendix F). The subscale has 6 items, which are rated on a scale from 1 ("Not true at all, False") to 4 ("Very True"), with higher scores representing greater affective instability. Examples of items include "My mood can shift quite suddenly" and "I've had times when I was so mad I couldn't do enough to express all my anger." A subscale score is obtained by summing the scores on the items. Solhan and colleagues (2009) found that the subscale's internal consistency was $\alpha = .70$. Morey (1991) found the whole BOR scale to have an average internal consistency of $\alpha = .88$ (Morey, 1991). In the current study, $\alpha = 0.58$ for the affective instability subscale of the BOR scale of the PAI.

Intimate Partner Violence Perpetration and Victimization. More detailed information on eligible participants' intimate partner violence perpetration and victimization in their relationship with their current romantic partner was assessed using the Revised Conflict Tactics Scales Short Form (CTS2S; Straus & Douglas, 2004) (Appendix G). The CTS2S is a 20-item self-report scale that assesses IPV victimization and perpetration for a given situation or action. The CTS2S's instructions prompt respondents to indicate the frequency with which each item

occurred in the past year. The scale consists of five subscales, measuring the frequency of physical assault (2 items, e.g., “I pushed, shoved, or slapped my partner”/“My partner pushed, shoved, or slapped me”); psychological aggression (2 items, e.g., “I insulted or swore or shouted or yelled at my partner”/“My partner insulted or swore or shouted or yelled at me”); sexual coercion (2 items, e.g., “I insisted on sex when my partner did not want to or insisted on sex without a condom (but did not use physical force)”/“My partner insisted on sex when I did not want to or insisted on sex without a condom (but did not use physical force)”); negotiation (2 items, e.g., “I showed respect for, or showed that I cared about my partner’s feelings about an issue we disagreed on”/“My partner showed respect for, or showed that he or she cared about my feelings about an issue we disagreed on”); and injury (2 items, e.g., “I had a sprain, bruise, or small cut, or felt pain the next day because of a fight with my partner”/“My partner had a sprain, bruise, or small cut or felt pain the next day because of a fight with me”). Participants were asked to indicate on an 8-point Likert scale how many times each item occurred in the past year: 1 indicates “Once in the past year,” 2 is “Twice in the past year,” 3 is “3-5 times in the past year,” 4 is “6-10 times in the past year,” 5 is “11-20 times in the past year,” 6 is “More than 20 times in the past year,” 7 is “Not in the past year, but it did happen before,” and 0 is “This has never happened”. Higher scores indicate a greater frequency of abuse. Scores are calculated by summing the midpoints of the selected ratings on the scale for each item. Specifically, the midpoint is 0 for a rating of 0 on the scale, 1 for a rating of 1, 2 for a rating of 2, 4 for a rating of 3 (“3-5 times”), 8 for a rating of 4 (“6-10 times”), 15 for a rating of 5 (“11-20 times”), and 25 for a rating of 6 (“More than 20 times”). A rating of 7 is scored as 0 because scores for the past year are being assessed. When compared to the full Revised Conflict Tactics Scales (CTS2; Straus et al., 1996), partial correlations of the CTS2S, when controlling for SES, social desirability, and

gender, were: $r = .88-.89$ for Negotiation; $r = .69-.72$ for Physical Assault; $r = .94$ for Injury; $r = .65-.67$ for Sexual Coercion; and $r = .69-.77$ for Psychological Aggression (Straus & Douglas, 2004). In the current study, $\alpha = 0.86$ for IPV perpetration on the CTS2S, and $\alpha = 0.83$ for IPV victimization on the CTS2S.

Power Analysis

Several recommendations have been offered regarding calculating minimum sample size with adequate power for path models or other structural equation models. Greater degrees of freedom (df) require a larger sample size, but the sample size should exceed the number of observed variables (MacCallum et al., 1996; Weston & Gore, 2006). Minimum sample size can be calculated with the $N:q$ rule when a maximum likelihood method is used (Jackson, 2003). Specifically, the ratio of the number of cases per parameter should be at least 10 or 20 to 1 (Kline, 2011, 1998). Since the hypothesized model has 46 parameters, a total of 460 or 920 participants is needed. However, Weston and Gore (2006) recommend using 200 as a minimum sample size for any structural equation model if no problems with the data are expected, such as missing data or non-normal distributions (Weston & Gore, 2006). In order to determine the number of participants that would be needed for the present study in order to obtain adequate power, the guidelines of Fritz & MacKinnon (2007) were used. The sizes of the α and β paths were examined in the mediation models tested in the most relevant studies to the present study: Godbout et al. (2009); Hocking et al. (2016); Brassard (2014); Robinson (2017); and Guzmán-González et al. (2016). The sizes of the α and β paths in these studies were examined in order to estimate what the sizes of the α and β paths in the present study would be, and thus what sample size would be needed to test each mediation with adequate power. The childhood betrayal trauma to IPV victimization via attachment avoidance mediation was estimated to require 462

participants, the childhood betrayal trauma to IPV victimization via attachment anxiety mediation was estimated to require 368 participants, the childhood betrayal trauma to IPV perpetration via attachment anxiety mediation was estimated to require 148 participants, and the attachment anxiety to IPV perpetration via affective instability mediation was estimated to require 118 participants. The mean of these estimated sample sizes is 274. Thus, it was determined that 274 participants was the minimum sample size needed for the present study. The dataset used in the current study was collected as part of a larger study, for which the sample size was 349, enough to test the various mediations in the model.

Results

Data Handling and Preparation

Preliminary analyses were conducted to yield the ranges and distributions of variables and to determine whether the assumptions of structural equation modeling were met using Stata 16 (StataCorp, 2019), based on the recommendations of Tabachnick and Fidell (2007) and Kline (2011).

Participants' screen survey data was matched to their Form A/B data by using their MTurk ID, IP address on Qualtrics, and date they took the survey. Participants who completed the screen survey more than once were dropped from the dataset. Unexpectedly, 147 participants' data could not be matched due to missing or inconsistent MTurk IDs and/or IP coordinates between their screen and full survey. Three hundred ninety-three participants' screen data could be matched to their Form A/B data.

To create the variable for the interaction between attachment anxiety and affective instability in predicting IPV perpetration, first attachment anxiety and affective instability were

each centered at the mean, then the interaction variable was created in Stata. Whenever the response option “Do not wish to respond” was selected, it was coded as missing data in the dataset. Gender was a categorical variable, coded as 0 for women and 1 for men. No participants in the final analysis sample identified as a gender other than a man or woman.

One participant responded to the question asking for their number of years of education with a range of numeric values; their response was thus changed in the dataset to the mean of that range, so that number of years of education could be examined as a numeric variable. Also, one participant provided a nonsense response when asked about the length of their relationship in months; their response was thus changed in the dataset to a missing value. Another participant e-mailed the student researcher to give a correction to their response to the item asking how many months they had been in their current relationship, stating that they had accidentally provided the relationship length in years rather than months. Thus, their response was adjusted accordingly in the dataset to be the relationship length in months. These changes were made so that length of relationship in months could be examined as a numeric variable. Additionally, when asked about number of previous abusive partners, a participant responded “N/A,” and another participant responded “none;” these participants’ responses were thus changed to 0. These changes were made so that number of previous abusive partners could be examined as a numeric variable. Lastly, one participant e-mailed the student researcher to give corrections to items they had responded incorrectly to, when asked if their abusive romantic partner had threatened, attempted, or completed homicidal or suicidal behaviors. The participant stated that they responded “do not wish to respond” for all of these items, but they meant to respond “no” to all of these items. Their responses were thus adjusted accordingly in the dataset.

To determine the normality of variable distributions, we examined skew, kurtosis, stem-and-leaf plots, histograms with normal curves, two-way histograms, and kernel density graphs. Univariate normality was assessed for each variable. To detect univariate outliers and influential cases, we examined stem-and-leaf plots, histograms with normal curves, kernel density estimations, and box plots. Each variable was also examined for univariate outliers using Tabachnick and Fidell's (2007) guideline of a z-score of ≥ 3.29 (or a likelihood of $p < .001$). To detect multivariate outliers and influential cases, we examined added variable plot, residual-versus-fitted plot, leverage-versus-squared-residual plot, Q-Q plot of residuals, Cook's distance, DFITS, and DFBETA. Six participants were not included in analyses due to being univariate and/or multivariate outliers, and 5 participants were not included in analyses due to only providing their age and gender but having missing values as scores on all of the other variables in the model. Attention check items were also examined as a metric of participants' inattention while completing the study. Participants who answered 3 or more attention check items incorrectly were examined for suspicious response patterns on measures. The amount of time that participants took to complete the screen survey and Form A or B was also examined, and participants' data was not included in analyses if their response time was too short. For the purposes of the present study, response times that were too short were defined as taking less than 17 seconds to complete the 17-item screen or taking less than 319 seconds to complete the 319-item Form A/B. No participants took less than 17 seconds to complete the screen survey, but 33 participants took less than 319 seconds to complete Form A/B. Thus, these 33 participants who completed the full survey were excluded from the analyses. Data from a total of 44 participants was thus not included in analyses due to being outliers and/or providing poor-quality data.

The E-HITS score distribution was non-normal and positively skewed, with most participants endorsing little IPV victimization; it was also bimodal (with two distinct modes in different parts of the distribution). Age was normally distributed. The childhood betrayal trauma score distribution was non-normal and positively skewed, with most participants endorsing little childhood betrayal trauma. The attachment anxiety score distribution was non-normal and bimodal. The attachment avoidance score distribution was normally distributed, except that it was bimodal. The affective instability score distribution was normally distributed, except that it was bimodal. The IPV perpetration score distribution was non-normal and positively skewed, with most participants endorsing little IPV perpetration. The IPV victimization score distribution was non-normal and positively skewed, with most participants endorsing little IPV victimization. The final analysis sample was 349.

Descriptive and Bivariate Statistics

Preliminary descriptive analyses were conducted using Stata 16 (StataCorp, 2019). Correlation analyses also examined the relations among the variables of interest (Table 2).

IPV Victimization

IPV victimization exhibited a strong positive correlation with IPV perpetration, a weak negative correlation with age, a moderate positive correlation with childhood betrayal trauma, a moderate positive correlation with attachment anxiety, a weak positive correlation with attachment avoidance, and a moderate positive correlation with affective instability.

IPV Perpetration

IPV perpetration exhibited a strong positive correlation with IPV victimization, a weak negative correlation with age, a moderate positive correlation with childhood betrayal trauma, a

moderate positive correlation with attachment anxiety, a weak positive correlation with attachment avoidance, and a moderate positive correlation with affective instability.

Age

Age exhibited a weak negative correlation with IPV victimization and a weak negative correlation with IPV perpetration.

Gender

The analysis sample consisted of 57.18% men and 42.82% women. No significant correlations with gender were found.

Childhood Betrayal Trauma

Childhood betrayal trauma exhibited a moderate positive correlation with IPV victimization, a moderate positive correlation with IPV perpetration, a moderate positive correlation with attachment anxiety, a weak positive correlation with attachment avoidance, and a moderate positive correlation with affective instability.

Attachment Anxiety

Attachment anxiety exhibited a moderate positive correlation with IPV victimization, a moderate positive correlation with IPV perpetration, a moderate positive correlation with childhood betrayal trauma, a moderate positive correlation with attachment avoidance, and a strong positive correlation with affective instability.

Attachment Avoidance

Attachment avoidance exhibited a weak positive correlation with IPV victimization, a weak positive correlation with IPV perpetration, a weak positive correlation with childhood betrayal trauma, a moderate positive correlation with attachment anxiety, and a moderate positive correlation with affective instability.

Affective Instability

Affective instability exhibited a moderate positive correlation with IPV victimization, a moderate positive correlation with IPV perpetration, a moderate positive correlation with childhood betrayal trauma, a strong positive correlation with attachment anxiety, and a moderate positive correlation with attachment avoidance.

Path Model

The hypothesized path model is shown in Figure 1. In addition to the paths shown, age and gender were allowed to covary with the exogenous variables and had paths to all endogenous variables. The path model fit was estimated in Mplus 8.3 (Muthén & Muthén, 2017) using maximum likelihood robust estimation first, then bias-corrected bootstrapping to estimate the significance of indirect effects. The model's fit was examined using the guidelines of Hu and Bentler (1999). For fit-indices, a cutoff value of .95 is considered acceptable for CFI and TLI, a cutoff value near .06 for RMSEA (with 90% confidence intervals between 0 and .10) is acceptable, and a cutoff value of SRMR < .08 is a good fit. Modification indices were examined to determine whether additional paths should be added to the model. R^2 values for the endogenous variables were obtained along with standardized coefficients as effect size measures. The significance of the indirect effects was obtained using bias-corrected bootstrapped confidence intervals (MacKinnon et al., 2004).

The initial model (Model 1) did not adequately fit the data [$\chi^2 (1, N = 349) = 66.28, p < .0001$; CFI = .92, RMSEA = .170 90% CI [.134 - .208]. Following the estimation of this model, modification indices were examined, and an additional correlation was added (attachment anxiety x affective instability with attachment avoidance; Model 2). After this path was freed, the model's fit was improved, though not to the desired extent (Model 2), [$\chi^2 (1, N = 349) = 27.79, p$

< .0001; CFI = .97, RMSEA = .114 90% CI [.075 - .157]. Following the estimation of this model, modification indices were examined, and an additional direct path was added (attachment avoidance to affective instability; Model 3). After this path was freed, the model's fit was improved, though still not to the desired extent (Model 3), [χ^2 (1, N = 349) = 7.40, p = .12; CFI = 1.00, RMSEA = .049 90% CI [.000 - .104]. Following the estimation of this model, modification indices were examined, and an additional direct path was added (affective instability to IPV victimization; Model 4). After this path was freed, the model's fit was improved (Model 4), [χ^2 (1, N = 349) = 0.94, p = .81; CFI = 1.00, RMSEA = .000 90% CI [.000 - .055]. Following the estimation of this model, the attachment anxiety x affective instability on IPV perpetration interaction was removed from the model for parsimony (Model 5), because the interaction was not significant (b = -0.02, p = .595). After this interaction was removed, the model's fit was substantially improved (Model 5), [χ^2 (1, N = 349) = 0.81, p = .67; CFI = 1.00, RMSEA = .000 90% CI [.000 - .081], which was an excellent fit to the data. The final model is presented in Figure 2.

Direct Effects

In the final model, IPV victimization was regressed on childhood betrayal trauma, attachment anxiety, attachment avoidance, affective instability, age, and gender. Consistent with hypotheses, childhood betrayal trauma, attachment anxiety, and affective instability positively predicted IPV victimization, while younger age predicted IPV victimization. Consistent with hypotheses, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV victimization. Although not expected, affective instability fully mediated the association between attachment avoidance and IPV victimization. However, contrary to the

hypotheses, attachment avoidance did not mediate the association between childhood betrayal trauma and IPV victimization.

IPV perpetration was regressed on childhood betrayal trauma, attachment anxiety, affective instability, age, and gender. Consistent with hypotheses, childhood betrayal trauma, attachment anxiety, and affective instability positively predicted IPV perpetration, while younger age predicted IPV perpetration. Attachment anxiety partially mediated the association between childhood betrayal trauma and IPV perpetration, and affective instability partially mediated the association between attachment anxiety and IPV perpetration. Contrary to hypotheses, the attachment anxiety x affective instability interaction on IPV perpetration was not significant. Specifically, affective instability did not moderate the association between attachment anxiety and IPV perpetration.

Consistent with hypotheses, attachment anxiety and attachment avoidance positively predicted affective instability; childhood betrayal trauma positively predicted attachment avoidance; and childhood betrayal trauma positively predicted attachment anxiety.

See Figure 2 for an illustration of the final structural equation model including standardized path estimates (i.e., direct effects) and variance accounted for in each variable (i.e., R^2).

Indirect Effects

The indirect effects were calculated as the cross-product of coefficients. Significance of the indirect effects was determined via bias-corrected bootstrapped confidence intervals. For the current study, 10,000 samples were drawn from the sample and effects were estimated from each sample. There was a significant indirect effect of childhood betrayal trauma to IPV perpetration via attachment anxiety. Additional significant indirect effects of childhood betrayal trauma to

IPV perpetration via attachment anxiety and affective instability, as well as via attachment avoidance and affective instability, were found. Furthermore, there was a significant indirect effect of childhood betrayal trauma to IPV victimization via attachment anxiety. Additional significant indirect effects of childhood betrayal trauma to IPV victimization via attachment anxiety and affective instability, as well as via attachment avoidance and affective instability, were found. Standardized coefficients for indirect paths are presented in Table 5, and unstandardized coefficients for indirect paths are presented in Table 6.

Thus, the results partially supported the hypothesized model of childhood betrayal trauma, IPV perpetration, and IPV victimization. Specifically, consistent with hypotheses, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV victimization. Although unexpected, affective instability fully mediated the association between attachment avoidance and IPV victimization. Consistent with hypotheses, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV perpetration, and affective instability partially mediated the association between attachment anxiety and IPV perpetration. However, contrary to the hypotheses, attachment avoidance did not mediate the association between childhood betrayal trauma and IPV victimization. Also, contrary to hypotheses, the attachment anxiety x affective instability interaction on IPV perpetration was not significant. Specifically, affective instability did not moderate the association between attachment anxiety and IPV perpetration. Standardized coefficients for direct paths are presented in Table 3, and unstandardized coefficients for direct paths are presented in Table 4.

Alternative Model

An alternative path model was also tested, with attachment anxiety switching places with IPV perpetration in the model, and attachment avoidance switching places with IPV victimization in the model, such that IPV perpetration and victimization were mediators, and attachment anxiety and avoidance were outcomes. For parsimony, the interaction was not included in this alternative model. This initial alternative path model is shown in Figure 3.

The initial model (Model 1) did not adequately fit the data [$\chi^2 (1, N = 349) = 65.19, p < .0001$; CFI = .91, RMSEA = .209 90% CI [.166 - .256]. Following the estimation of this model, modification indices were examined, and an additional direct path was added (from affective instability to attachment avoidance; Model 2). After this path was freed, the model's fit was improved, though not to the desired extent (Model 2), [$\chi^2 (1, N = 349) = 19.22, p < .001$; CFI = .98, RMSEA = .124 90% CI [.075 - .180]. Following the estimation of this model, modification indices were examined, and an additional direct path was added (from IPV victimization to affective instability; Model 3). After this path was freed, the model's fit was improved, though not to the desired extent (Model 3), [$\chi^2 (1, N = 349) = 7.43, p < .05$; CFI = .99, RMSEA = .088 90% CI [.027 - .160]. Following the estimation of this model, modification indices were examined, and an additional direct path was added (from childhood betrayal trauma to affective instability; Model 4). After this path was freed, the model's fit was substantially improved (Model 4), [$\chi^2 (1, N = 349) = 0.72, p = .40$; CFI = 1.00, RMSEA = .000 90% CI [.000 - .133], which was an excellent fit to the data. The final alternative model is presented in Figure 4.

Comparing the Final Hypothesized Model and the Final Alternative Model

The fit-indices of the final hypothesized model (in which attachment anxiety and avoidance were mediators, and IPV perpetration and victimization were outcomes) and the final

alternative model (in which IPV perpetration and victimization were mediators, and attachment anxiety and avoidance were outcomes) were compared using the guidelines of Hu and Bentler (1999). For both models, χ^2 was nonsignificant, CFI and TLI were above the cutoff value of .95, and SRMR was less than the cutoff value of .08. Additionally, for both models, RMSEA = .000. However, only the final hypothesized model met the guideline of the 90% confidence intervals between 0 and .10 for RMSEA, while the final alternative model did not. Thus, the final hypothesized model was deemed to be a better fit to the data than the final alternative model. Therefore, based on the data collected in the current study, it is more accurate to have attachment anxiety and avoidance as mediators and to have IPV perpetration and victimization as outcomes.

Discussion

The present research aimed to determine the associations among childhood betrayal trauma, attachment anxiety and avoidance, affective instability, and IPV perpetration and victimization. A path model was hypothesized in which, controlling for age and gender, attachment anxiety partially mediates the association between childhood betrayal trauma and IPV victimization; attachment avoidance partially mediates the association between childhood betrayal trauma and IPV victimization; attachment anxiety partially mediates the association between childhood betrayal trauma and IPV perpetration; and affective instability partially mediates the association between attachment anxiety and IPV perpetration. An interaction was also hypothesized in which affective instability moderates the association between attachment anxiety and IPV perpetration, such that at higher levels of affective instability, the association between anxious attachment and IPV perpetration would be stronger than at mean or lower levels of the moderator. The results partially supported the hypothesized model. Specifically, consistent

with hypotheses, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV victimization. Although unexpected, affective instability fully mediated the association between attachment avoidance and IPV victimization. Consistent with hypotheses, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV perpetration, and affective instability partially mediated the association between attachment anxiety and IPV perpetration. However, contrary to the hypotheses, attachment avoidance did not mediate the association between childhood betrayal trauma and IPV victimization. Also, contrary to hypotheses, the attachment anxiety x affective instability interaction on IPV perpetration was not significant. Specifically, affective instability did not moderate the association between attachment anxiety and IPV perpetration. These results will be discussed in turn.

Indirect Effects to IPV Victimization

The indirect path from childhood betrayal trauma to IPV victimization via *attachment anxiety* was significant over and above age and gender, as was the direct path from childhood betrayal trauma to IPV victimization. This result indicates that attachment anxiety partially mediated the association between childhood betrayal trauma and IPV victimization, suggesting that attachment anxiety serves as a key mechanism in experiencing IPV victimization after experiencing childhood betrayal trauma. It is possible that childhood betrayal trauma fosters an anxious attachment style, which lends itself to vulnerability to being a victim of IPV due to individuals' fear of abandonment and separation, even with an abusive partner (Velotti et al., 2018; Henderson et al., 1997).

The indirect path from childhood betrayal trauma to IPV victimization via *attachment anxiety and affective instability* was also significant over and above age and gender, as was the

direct path from childhood betrayal trauma to IPV victimization. This result indicates that attachment anxiety and affective instability partially mediated the association between childhood betrayal trauma and IPV victimization, suggesting that both attachment anxiety and affective instability are key mechanisms in experiencing IPV victimization after experiencing childhood betrayal trauma. It is possible that childhood betrayal trauma lends itself to an anxious attachment style, which in turn may result in higher affective instability in the form of hyperactivating or heightening emotion regulation strategies (e.g., distress, increased vigilance, repeated protest, clinging, controlling, reassurance-seeking) (Brenning & Braet, 2013; Pietromonaco et al., 2006; Brennan et al., 1998; Mikulincer & Shaver, 2008; Mikulincer et al., 2003), and this affective instability may foster increased vulnerability to becoming a victim of IPV (Gallaty & Zimmer-Gembeck, 2008; Shepherd-McMullen et al., 2015; Krause-Utz et al., 2021). Perhaps an abusive partner would react negatively to an anxiously attached partner's clingy attachment behaviors and unstable affects and would respond with abuse.

The indirect path from childhood betrayal trauma to IPV victimization via *attachment avoidance and affective instability* was also significant over and above age and gender, as was the direct path from childhood betrayal trauma to IPV victimization. This result indicates that attachment avoidance and affective instability partially mediated the association between childhood betrayal trauma and IPV victimization, suggesting that both attachment avoidance and affective instability serve as key mechanisms in experiencing IPV victimization after experiencing childhood betrayal trauma. It is possible that childhood betrayal trauma fosters an avoidant attachment style, which in turn may result in higher affective instability in the form of deactivating or suppressing emotion regulation strategies (e.g., detachment, self-reliance, suppressing their worries, downplaying the importance of conflicts) (Brenning & Braet, 2013;

Pietromonaco et al., 2006; Brennan et al., 1998; Mikulincer & Florian, 1998; Mikulincer & Shaver, 2008; Mikulincer et al., 2003), and this affective instability may foster increased vulnerability to becoming a victim of IPV (Gallaty & Zimmer-Gembeck, 2008; Krause-Utz et al., 2021). Perhaps an abusive partner who relies on violence would react negatively to an avoidantly attached partner's distancing attachment behaviors and unstable affects and would respond with abuse.

Notably, the association between childhood betrayal trauma and IPV victimization remained significant over and above the other variables in the model, indicating that there are variables aside from attachment and affective instability that account for the outcome. This points to the widespread deleterious effects of childhood betrayal trauma that put people at risk for IPV victimization, beyond the risk that attachment styles and affective instability account for.

Indirect Effects to IPV Perpetration

The indirect path from childhood betrayal trauma to IPV perpetration via *attachment anxiety* was significant over and above age and gender, as was the direct path from childhood betrayal trauma to IPV perpetration. Namely, attachment anxiety partially mediated the association between childhood betrayal trauma and IPV perpetration, suggesting that attachment anxiety is a key mechanism in being a perpetrator of IPV after experiencing childhood betrayal trauma. It is possible that childhood betrayal trauma fosters an anxious attachment style, which may lend itself to using violence to pursue a desired level of closeness (Park, 2016; Allison et al., 2008; Henderson et al., 2005).

The indirect path from childhood betrayal trauma to IPV perpetration *via attachment anxiety and affective instability* was significant over and above age and gender, as was the direct path from childhood betrayal trauma to IPV perpetration. This result indicates that attachment

anxiety and affective instability partially mediated the association between childhood betrayal trauma and IPV perpetration, suggesting that both attachment anxiety and affective instability play key roles in becoming a perpetrator of IPV after experiencing childhood betrayal trauma. It is possible that childhood betrayal trauma fosters an anxious attachment style, which in turn may result in higher affective instability in the form of hyperactivating or heightening emotion regulation strategies (Brenning & Braet, 2013; Pietromonaco et al., 2006; Brennan et al., 1998; Mikulincer & Shaver, 2008; Mikulincer et al., 2003), and this affective instability may result in violence toward a partner (Robinson, 2017; Cheche Hoover & Jackson, 2021; Pollard & Cantos, 2021; Guzmán-González et al., 2016).

The indirect path from childhood betrayal trauma to IPV perpetration *via attachment avoidance and affective instability* was significant over and above age and gender, as was the direct path from childhood betrayal trauma to IPV perpetration. This result indicates that attachment avoidance and affective instability partially mediated the association between childhood betrayal trauma and IPV perpetration, suggesting that both attachment avoidance and affective instability serve important roles in becoming a perpetrator of IPV after experiencing childhood betrayal trauma. It is possible that childhood betrayal trauma fosters an avoidant attachment style, which in turn may result in higher affective instability in the form of deactivating or suppressing emotion regulation strategies (Brenning & Braet, 2013; Pietromonaco et al., 2006; Brennan et al., 1998; Mikulincer & Florian, 1998; Mikulincer & Shaver, 2008; Mikulincer et al., 2003), and this affective instability may result in violence toward a partner (Gratz et al., 2009; McNulty & Hellmuth, 2008; Shorey et al., 2011, 2015; Stuart et al., 2006; Bushman et al., 2001; Jakupcak et al., 2002; Lee et al., 2020; Munro & Sellbom, 2020; Gratz & Roemer, 2004; Grigorian et al., 2019; Bliton et al., 2016).

Notably, the association between childhood betrayal trauma and IPV perpetration remained significant over and above the other variables in the model, indicating that there are variables aside from attachment and affective instability that account for the outcome. This finding points to the widespread deleterious effects of childhood betrayal trauma that put people at risk for IPV perpetration, beyond the risk that attachment styles and affective instability account for.

Interestingly, attachment anxiety had significant direct paths to both IPV perpetration and victimization. However, attachment avoidance had a significant indirect path to IPV perpetration via affective instability only. These results suggest that attachment anxiety is more strongly predictive of IPV perpetration and victimization than is attachment avoidance. In order for avoidantly attached individuals to perpetrate IPV, they may need to be experiencing affective instability.

Strengths and Limitations

There are several strengths of the present study. This was the first study to examine childhood betrayal trauma, attachment anxiety and avoidance, and affective instability as risk factors for IPV perpetration and victimization in a single model. In the path model, any relationships that were significant were significant after controlling for the other variables in the model and the covariates. We also methodologically controlled for the length of romantic relationship by requiring participants to have been in their relationship for at least 6 months. We also required participants to currently be in a romantic relationship in which they were experiencing IPV victimization, making participants more likely to remember the IPV than if they were asked about a prior abusive relationship.

There are several limitations and points to note about this study. Participants completed the study through MTurk, and all questions and measures were self-reports, which left room for participants to not be completely honest or to not pay attention to their responses. Causal inferences also cannot be made because the study's design was non-experimental. Furthermore, it is relevant to note that data for this study was collected from December 2020 through February 2021, during the COVID-19 pandemic. During the pandemic, increased IPV was noted as a concern due to quarantine (Leslie & Wilson, 2020; Piquero et al., 2021; Gosangi, 2021; Boserup et al., 2020; Peitzmeier et al., 2021). Additionally, attachment anxiety is to some extent a measure of anxiety and thus emotion dysregulation, so there may be a shared method variance between attachment anxiety and affective instability.

Future Directions

Notably, the association between childhood betrayal trauma and IPV perpetration and victimization remained significant over and above the other variables in the model, indicating that there are variables aside from attachment and affective instability that account for the outcome. This finding points to the widespread deleterious effects of childhood betrayal trauma that put people at risk for IPV perpetration and victimization, beyond the risk that attachment styles and affective instability account for. Other variables that may be at play in the association between childhood betrayal trauma and IPV include trauma-related disorders, dissociation, emotion dysregulation, and sexual risk-taking behaviors (Fereidooni et al., 2023); stay-leave decision-making factors (i.e., poor social support, social embarrassment, financial problems) (Selvey et al., 2021); borderline personality disorder features (Krause-Utz et al., 2021); and alcohol use, depression, and aggression (Fedina et al., 2022). These potential explanations of the childhood betrayal trauma to IPV perpetration and victimization link merit further exploration.

Research has revealed that attachment style might not be stable over a lifetime (Owens et al., 1995; Bowlby 1973, 1980, 1988). The current study only assessed for current adulthood attachment style and did not also assess for attachment between the participants and their primary attachment figures during childhood. However, attachment anxiety in adulthood was still moderately associated with childhood betrayal trauma. These connections could be explored in future research. This study also did not control for IPV's severity, which could have influenced the results. This possibility could be explored in future research.

Additionally, in future research, childhood betrayal trauma, attachment anxiety and avoidance, and affective instability could be examined as potential predictors of IPV re-perpetration and revictimization in the context of multiple relationships. It would also be valuable to determine the strength and direction of the associations among variables for individuals who have experienced various types of childhood betrayal trauma (e.g., physical abuse, emotional abuse, sexual abuse) and various types of IPV perpetration and/or IPV victimization (i.e., physical assault and injury, psychological aggression, sexual coercion). Moreover, future research may choose to compare the results when separating less severe forms of psychological IPV (e.g., insulting one's partner) from physical IPV. Dyadic data from couples on each partner's experience of childhood betrayal trauma, attachment anxiety and avoidance, affective instability, and IPV perpetration and victimization would be particularly useful in order to demystify the causes of IPV. In particular, it is possible that IPV perpetration may result in response to a partner's attachment style and/or affective instability, as well as the perpetrator's own attachment style and/or affective instability; this dynamic interplay would be valuable to examine. Further study in this area is greatly needed in order to understand the complex mechanisms at play in a high-risk IPV sample.

Conclusions and Clinical Implications

The present research is valuable because it adds to the existing research literature by drawing connections among childhood betrayal trauma, attachment anxiety and avoidance, affective instability, and IPV perpetration and victimization. The study also has implications for understanding common and differential risk factors for IPV perpetration versus IPV victimization. Namely, common risk factors of IPV perpetration and victimization were found to be childhood betrayal trauma, attachment anxiety, and affective instability. However, attachment avoidance indirectly predicted IPV perpetration through affective instability, while attachment avoidance did not predict IPV victimization at all. Thus, in preventing and treating IPV perpetration, attachment avoidance may be a particularly useful risk factor to target. Additionally, in preventing and treating both IPV perpetration and victimization, attachment avoidance and affective instability would be beneficial to focus on. In particular, emotionally focused couples therapy and emotion regulation skills from dialectical behavior therapy (DBT) skills training could be useful treatment modalities to help with these problems.

Moreover, there is a dynamic interplay between adulthood attachment styles and IPV. While certain insecure attachment styles are risk factors for IPV victimization and perpetration, IPV victimization also lends itself to the formation of an insecure attachment style, as attachment styles evolve in response to experiences in relationships. Thus, clinical interventions should not only focus on ameliorating attachment and affective instability, but also on helping IPV victims leave their abusive relationships and process how their abusive partners may have negatively impacted their approach to relationships overall.

Table 1.*Descriptive Statistics*

Variable	<i>N</i>	<i>M (SD)</i>	Range	Skewness	Kurtosis
Age	349	38.81 (10.17)	20-65	0.68	2.66
Gender	348	-	199 (M), 149 (F)	-	-
Childhood betrayal trauma	248	1.85 (2.11)	0-8	1.04	3.28
Attachment anxiety	325	3.29 (1.66)	0.17-6.33	-0.23	1.81
Attachment avoidance	325	3.14 (1.06)	1-6.28	-0.27	2.94
Affective instability	333	11.50 (3.54)	3-20	-0.42	2.45
IPV Perpetration	332	35.40 (43.65)	0-190	1.14	3.19
IPV Victimization	332	34.76 (42.03)	0-190	1.24	3.60

Note. *N*'s differ due to missing data. Gender is coded Women = 0 and Men = 1.

Table 2.

Correlation Matrix of All Study Variables

	1	2	3	4	5	6	7	8
1. IPV Victimization	-							
2. IPV Perpetration	0.83***	-						
3. Age	-0.13*	-0.13*	-					
4. Gender	0.04	0.05	-0.11	-				
5. Childhood betrayal trauma	0.43***	0.46***	-0.06	-0.04	-			
6. Attachment anxiety	0.41***	0.41***	0.03	0.01	0.44***	-		
7. Attachment avoidance	0.28***	0.26***	-0.05	-0.03	0.25***	0.41***	-	
8. Affective instability	0.36***	0.35***	-0.07	-0.04	0.30***	0.63***	0.44***	-

Note. Gender coded 0 (women) and 1 (men). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3.*Standardized Coefficients and Standard Errors of Direct Effects (N = 349)*

Variable/Path	Std. Coef.	Std. Error	<i>p</i>
<i>IPV Victimization</i>			
Affective instability	0.15**	0.06	0.01
Attachment avoidance	0.03	0.02	0.16
Attachment anxiety	0.18**	0.07	0.01
Childhood betrayal trauma	0.30***	0.08	< 0.001
Age	-0.11*	0.05	0.02
Gender	0.04	0.05	0.39
<i>R</i> ²	0.28***	0.05	< 0.001
<i>IPV Perpetration</i>			
Affective instability	0.12*	0.05	0.02
Attachment anxiety	0.20**	0.06	< 0.01
Childhood betrayal trauma	0.34***	0.07	< 0.001
Age	-0.11*	0.05	0.02
Gender	0.05	0.05	0.33
<i>R</i> ²	0.30***	0.04	< 0.001
<i>Affective Instability</i>			
Attachment avoidance	0.21***	0.05	< 0.001
Attachment anxiety	0.54***	0.04	< 0.001
Age	-0.07	0.04	0.09
Gender	-0.05	0.04	0.25
<i>R</i> ²	0.44***	0.04	< 0.001
<i>Attachment Avoidance</i>			
Childhood betrayal trauma	0.25***	0.05	< 0.001
Age	-0.04	0.05	0.41
Gender	-0.02	0.06	0.71
<i>R</i> ²	0.07*	0.03	0.01
<i>Attachment Anxiety</i>			
Childhood betrayal trauma	0.42***	0.06	< 0.001
Age	0.05	0.05	0.38
Gender	0.03	0.05	0.59
<i>R</i> ²	0.17***	0.05	< 0.001

Note. * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001

Table 4.*Unstandardized Coefficients and Standard Errors of Direct Effects (N = 349)*

Variable/Path	Unstd. Coef.	Std. Error	<i>p</i>
<i>IPV Victimization</i>			
Affective instability	0.18**	0.07	0.01
Attachment avoidance	0.13	0.09	0.17
Attachment anxiety	0.46**	0.17	0.01
Childhood betrayal trauma	0.60***	0.16	< 0.001
Age	-0.45*	0.19	0.02
Gender	0.35	0.41	0.39
<i>R</i> ²	0.28***	0.05	< 0.001
<i>IPV Perpetration</i>			
Affective instability	0.15*	0.07	0.02
Attachment anxiety	0.52**	0.17	< 0.01
Childhood betrayal trauma	0.69***	0.15	< 0.001
Age	-0.46*	0.19	0.02
Gender	0.42	0.43	0.31
<i>R</i> ²	0.30***	0.04	< 0.001
<i>Affective Instability</i>			
Attachment avoidance	0.70***	0.17	< 0.001
Attachment anxiety	1.17***	0.10	< 0.001
Age	-0.25	0.15	0.09
Gender	-0.35	0.31	0.25
<i>R</i> ²	0.44***	0.04	< 0.001
<i>Attachment Avoidance</i>			
Childhood betrayal trauma	0.13***	0.03	< 0.001
Age	-0.05	0.06	0.41
Gender	-0.04	0.12	0.71
<i>R</i> ²	0.07*	0.03	0.01
<i>Attachment Anxiety</i>			
Childhood betrayal trauma	0.32***	0.05	< 0.001
Age	0.08	0.09	0.38
Gender	0.09	0.17	0.59
<i>R</i> ²	0.17***	0.05	< 0.001

Note. * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001

Table 5.*Standardized Indirect and Total Effects with Bias-Corrected Bootstrapped Confidence Intervals*

Pathway	<i>b</i> [95% CI]
BBTSchild → ECRanxiety → affinst → CTS2Sperp	0.028 [0.005, 0.059]
BBTSchild → ECRanxiety → affinst → CTS2Svictim	0.033 [0.010, 0.066]
BBTSchild → ECRanxiety → CTS2Sperp	0.082 [0.032, 0.143]
BBTSchild → ECRanxiety → CTS2Svictim	0.076 [0.026, 0.139]
BBTSchild → ECRavoidance → affinst → CTS2Sperp	0.006 [0.001, 0.016]
BBTSchild → ECRavoidance → affinst → CTS2Svictim	0.008 [0.002, 0.018]
BBTSchild → ECRavoidance → CTS2Svictim	0.008 [-0.002, 0.022]
Total effects, BBTSchild → CTS2Sperp	0.452 [0.345, 0.552]
Total effects, BBTSchild → CTS2Svictim	0.425 [0.305, 0.544]

Note. BBTSchild = childhood betrayal trauma. ECRanxiety = attachment anxiety. ECRavoidance = attachment avoidance. affinst = affective instability. CTS2Sperp = IPV perpetration. CTS2Svictim = IPV victimization.

Table 6.

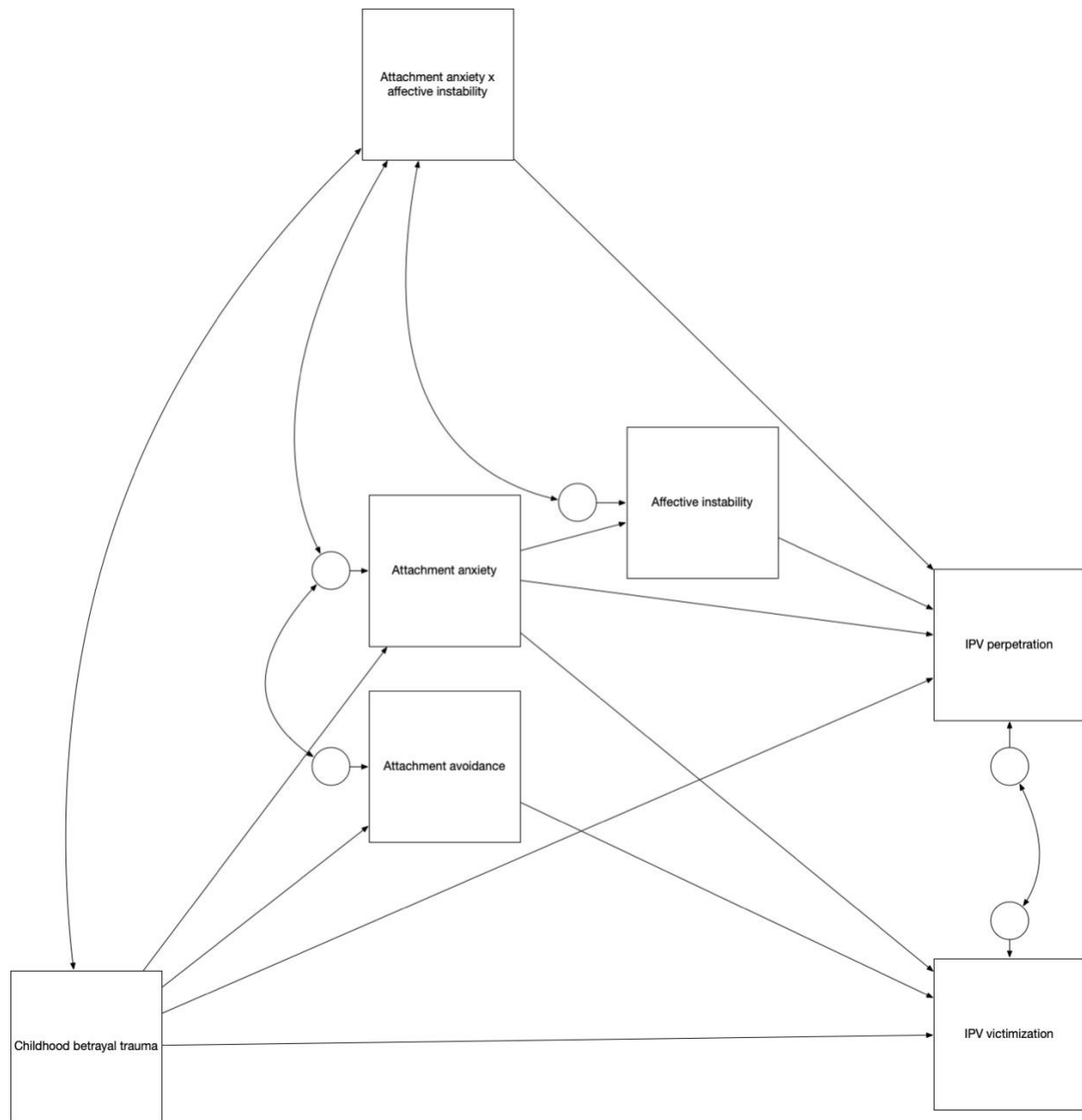
Unstandardized Indirect and Total Effects with Bias-Corrected Bootstrapped Confidence Intervals

Pathway	<i>b</i> [95% CI]
BBTSchild → ECRanxiety → affinst → CTS2Sperp	0.057 [0.011, 0.122]
BBTSchild → ECRanxiety → affinst → CTS2Svictim	0.066 [0.021, 0.130]
BBTSchild → ECRanxiety → CTS2Sperp	0.169 [0.066, 0.293]
BBTSchild → ECRanxiety → CTS2Svictim	0.150 [0.048, 0.278]
BBTSchild → ECRavoidance → affinst → CTS2Sperp	0.013 [0.003, 0.033]
BBTSchild → ECRavoidance → affinst → CTS2Svictim	0.015 [0.004, 0.035]
BBTSchild → ECRavoidance → CTS2Svictim	0.016 [-0.003, 0.044]
Total effects, BBTSchild → CTS2Sperp	0.932 [0.700, 1.185]
Total effects, BBTSchild → CTS2Svictim	0.843 [0.601, 1.109]

Note. BBTSchild = childhood betrayal trauma. ECRanxiety = attachment anxiety. ECRavoidance = attachment avoidance. affinst = affective instability. CTS2Sperp = IPV perpetration. CTS2Svictim = IPV victimization.

Figure 1.

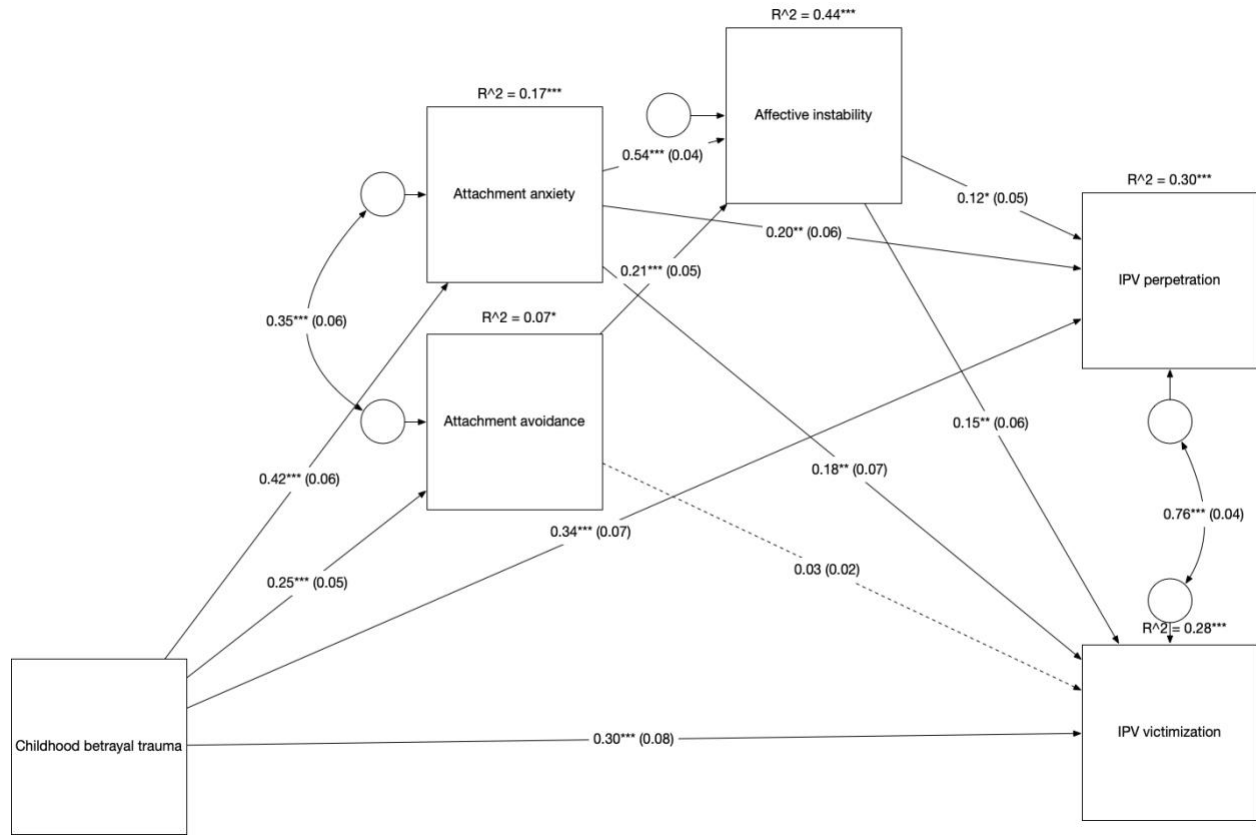
Originally Hypothesized Path Model



Note: Age and gender are included in the model, but they are omitted from the figure for clarity.

Figure 2.

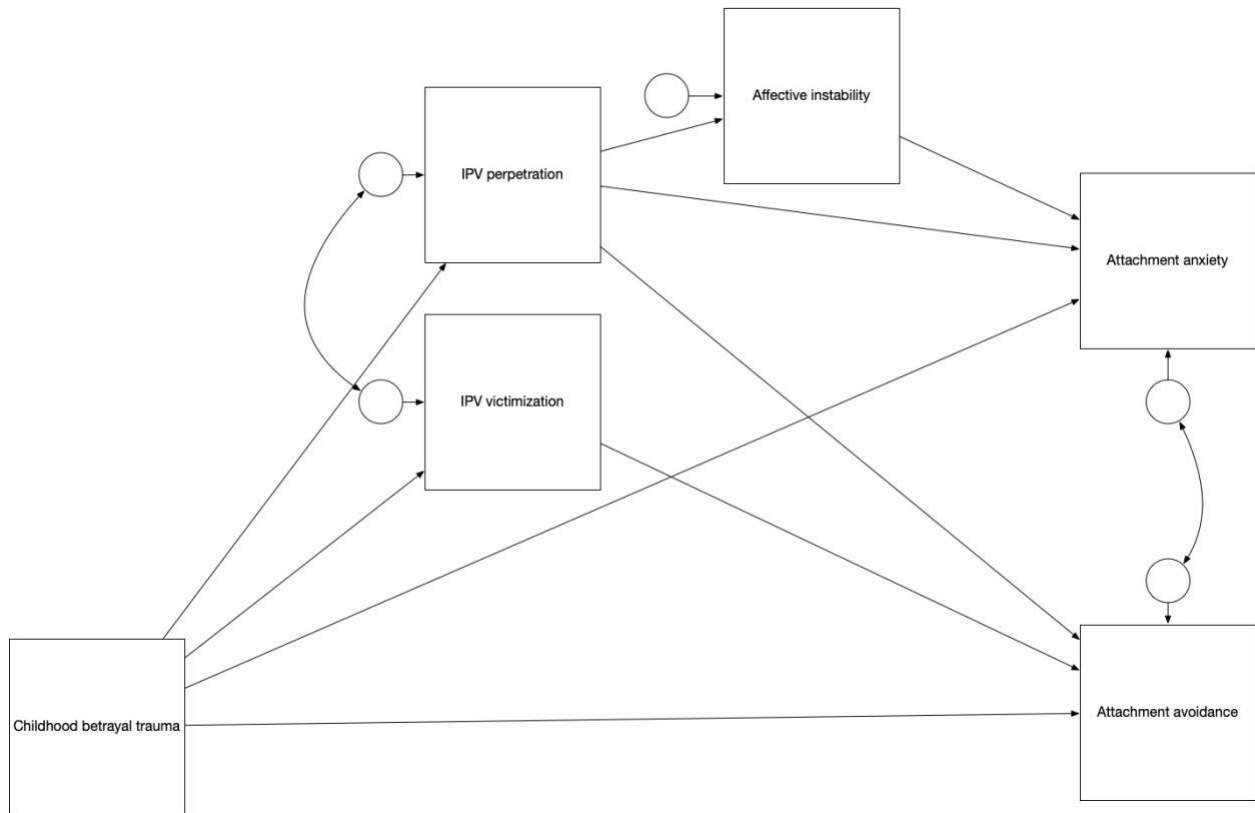
Final Path Model



Note. All parameters are standardized and followed by their standard errors (in parentheses). Age and gender were included as covariates with paths to all endogenous variables, but are omitted from the figure for clarity. The attachment anxiety x affective instability on IPV perpetration interaction was removed from the model for parsimony. * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 3.

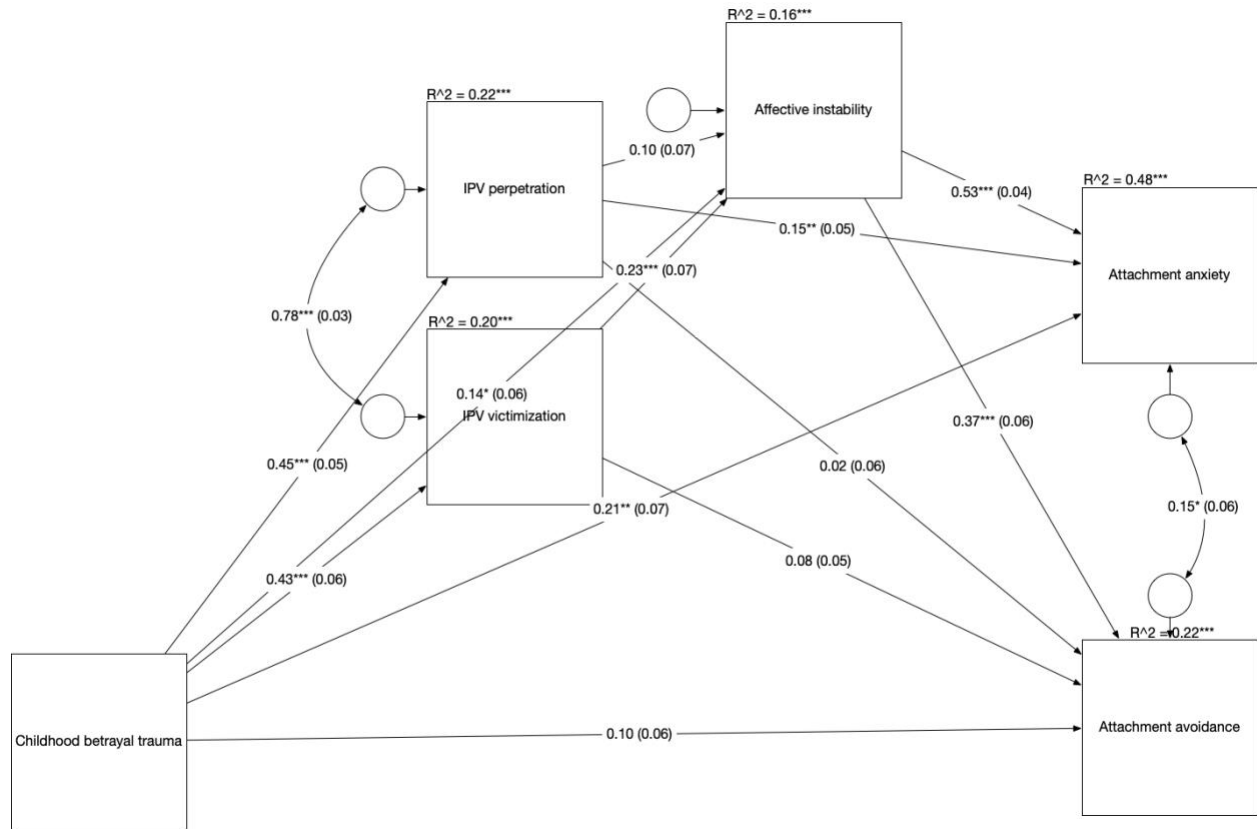
Initial Alternative Path Model



Note. Age and gender are included in the model, but they are omitted from the figure for clarity.

Figure 4.

Final Alternative Path Model



Note. All parameters are standardized and followed by their standard errors (in parentheses). Age and gender were included as covariates with paths to all endogenous variables, but are omitted from the figure for clarity. * $p < .05$, ** $p < .01$, *** $p < .001$.

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Appendix A: Consent Form
UNIVERSITY OF SOUTH DAKOTA
Institutional Review Board
Informed Consent Statement

Title of Project: Personal Life Experiences and Relationships

Principle Investigator: Raluca Simons, Ph.D., South Dakota Union Building, University of South Dakota, Vermillion, SD 57069

(605) 658-3710 Raluca.Simons@usd.edu

Other Investigator: Emma Shaughnessy, B.A., South Dakota Union Building, University of South Dakota, Vermillion, SD 57069

(605) 658-3710 Emma.Shaughnessy@coyotes.usd.edu

Invitation to Be Part of a Research Study:

You are invited to participate in this research study. Please take this study in a place where you can focus well and where it is unlikely that anyone will interrupt you. Also please take time to read this entire form and ask questions before deciding whether or not to take part in this research study.

Purpose of This Study:

The purpose of this research study is to learn more about the associations among childhood experiences, experiences in relationships, and mental health.

Procedures to Be Followed:

We are asking individuals from ages 18 through 65 to participate. Participants must currently be in a romantic relationship that has lasted at least 6 months. Participants must read and agree to this consent form before starting this online survey. Participation in this study involves answering demographic questions and completing questionnaires that ask about negative childhood experiences, negative experiences in relationships, and mental health. For the most

part the questions are multiple-choice questions, questions that ask participants to rate their answers on a scale, rank order questions, drag-and-drop questions, etc.

Risks:

There are no risks in participating in this research beyond those experienced in everyday life. It is possible that answering some questions about negative childhood experiences, negative experiences in intimate partner relationships, and mental health may cause some discomfort and/or anxiety. Since this study asks some questions about sensitive information, you may wish to keep your answers private from others. Otherwise, you may experience a risk to privacy. Thus, please take this study in a private place and delete the relevant internet browsing history after completion of the study. In the event that you feel you need to talk to a professional about any concerns you might have, we encourage you to visit these links, which offer a variety of resources: <https://www.mentalhealth.gov/get-help>, <https://www.nimh.nih.gov/health/find-help/index.shtml>, <https://locator.apa.org>, and <https://www.psychologytoday.com/us/therapists>. If you need to speak to someone immediately, please contact the National Suicide Prevention Lifeline at 1-800-273-8255. You may also text “HOME” to 741741 for free, 24/7 support.

Benefits:

You may not benefit personally from participating in this research project. However, by participating in this research, you may be helping to deepen our understanding of the associations among negative childhood experiences, negative experiences in relationships, and mental health. The results of this study may help us better understand the factors that can help improve interventions to reduce life problems.

Duration:

It will take approximately 50 minutes to complete this survey.

Statement of Confidentiality:

The study does not ask for any information that would identify who the responses belong to. Therefore, your responses are recorded anonymously. If this research is published, no information that would identify you will be included, and only group data will be published. All

survey responses that we receive will be treated confidentially and stored on a secure server. However, given that the survey can be completed from any computer (e.g., personal, work, school), we are unable to guarantee the security of the computer on which you choose to enter your responses. As a participant in our study, we want you to be aware that certain “key logging” software programs exist that can be used to track or capture data that you enter and/or websites that you visit.

Right to Ask Questions:

The researchers conducting this study are Emma Shaughnessy, B.A. and Raluca Simons, Ph.D. You may ask any questions that you have now. If you later have questions, concerns, or complaints about the research, please contact Raluca Simons, Ph.D. or Emma Shaughnessy, B.A. at Raluca.Simons@usd.edu or at Emma.Shaughnessy@coyotes.usd.edu.

If you have questions regarding your rights as a research subject, you may contact the University of South Dakota- Office of Human Subjects Protection at 605-658-3743 or at humansubjects@usd.edu, or you may submit the anonymous feedback form at <https://www.usd.edu/research/feedback>. You may also contact the Office of Human Subjects Protection with problems, complaints, or concerns about the research. Please contact the Office of Human Subjects Protection if you cannot reach research staff, or if you wish to talk with someone who is an informed individual who is independent of the research team. General information about being a research subject can be found on the Office of Human Subjects Protection website section “Human Subjects Protection”: <https://www.usd.edu/research/human-subjects-protection>.

Compensation:

Participants will each receive \$2 as compensation for their efforts on MTurk.

Voluntary Participation:

You do not have to participate in this research study. You can stop your participation at any time. You may refuse to participate or choose to discontinue participation at any time without losing any benefits to which you are otherwise entitled. You do not have to answer any questions that

you do not want to answer.

In order to consent to participate in this research study, you must be 18 years of age or older.

Completion and return of the survey imply that you have read the information in this form and consent to participate in this research. Please keep this form for your records or for future reference.

Do you wish to participate in this study?

- Yes
- No

Appendix B: Screen

What is your age (in years)? Please only enter whole numbers.

Please enter the Amazon Mechanical Turk (MTurk) user ID that you would like to be compensated through, if you are eligible to participate in the full study.

What is your gender?

- Woman
- Man
- Non-binary, genderqueer, agender, and/or genderless
- Other
- Do not wish to respond

Please indicate your current marital status. (Select all that apply.)

- Never married
- Engaged
- Married
- In a civil union
- Separated
- Divorced
- Widowed
- Do not wish to respond

Please indicate your current romantic relationship status. (Select all that apply.)

- Not in a relationship.
- In a casual relationship (I date other people as well).
- In a serious relationship (I do not date other people).

- In a domestic partnership (I live with my current partner).
- Currently on a break from my relationship with my partner.
- Currently broken up with my partner.
- Do not wish to respond

What is the length of time spent in your CURRENT romantic relationship (not including any time spent on a break or broken up)?

- Less than 1 month
- 1-2 months
- 3-5 months
- 6-8 months
- 9-11 months
- 12 months
- More than 12 months
- Do not wish to respond

Have you experienced any delusions or hallucinations in the past month?

- Yes
- No
- Do not wish to respond

Are you allergic to any type of food?

- Yes

- No
- Do not wish to respond

Have you ever been the victim of a robbery?

- Yes
- No
- Do not wish to respond

Please select how often your **current romantic partner** did each of these things in the past 12 months during the time that you have been in a relationship with this partner.

	0. Never	1. Rarely	2. Sometimes	3. Often	4. Frequently	5. Do not wish to respond
EHITS1.) Has your partner ever physically hurt you <u>in the past 12 months?</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EHITS2.) Has your partner ever insulted you <u>in the past 12 months?</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EHITS3.) Has your partner ever threatened to harm you <u>in the past 12 months?</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EHITS4.) Has your partner ever screamed or cursed at you <u>in the past 12 months?</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

EHITS5.) Has your partner ever forced you to have sexual activities <u>in the past 12 months</u> ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Have you ever been sex-trafficked?

- Yes
- No
- Do not wish to respond

Have you ever sex-trafficked another person?

- Yes
- No
- Do not wish to respond

Would you describe your relationships with your parents/childhood caretakers as good?

- Yes
- No
- Do not wish to respond

Appendix C: Demographics and Background Information

What is your current romantic partner's gender?

- Woman
- Man
- Non-binary, genderqueer, agender, and/or genderless
- Other
- Do not wish to respond

Are you of Hispanic, Latino, or Spanish origin?

- Yes
- No
- Do not wish to respond

What is your race?

- White
- Black or African American
- Asian
- Hispanic, Latino, or Spanish
- American Indian, Native American, or Alaska Native
- Native Hawaiian or other Pacific Islander
- Multiracial
- Other
- Do not wish to respond

How many years of education have you completed? (Start by counting completing 1st grade as 1 year. E.g., graduated from high school = 12 years.) Please enter only whole numbers.

—

How many children do you have? Please enter only whole numbers.

—

What is the length of time spent in your CURRENT romantic relationship (not including any time spent on a break or broken up)? Please specify length of relationship in MONTHS. Please enter only whole numbers.

—

Select all that apply regarding your current romantic relationship:

- My current romantic partner and I are pregnant and/or in the process of adopting a child or children together.
- My current romantic partner and I have and/or are raising a child or children together.
- None of the above options
- Do not wish to respond

Appendix D: Brief Betrayal Trauma Survey

Personal Experiences

We hope that you trust us to keep your responses in complete confidence and privacy; this is the reason that we ask you not to include your name on any of our questionnaires. Nonetheless, if you feel uncomfortable answering any of the more intimate questions in this section, just skip them, and go on to the next section. **For each item below, please mark one response in the columns labeled "Before Age 18" AND one response in the columns labeled "Age 18 or Older."**

Have each of the following events happened to you, and if so, how often?

For each item below, please mark one response in the columns labeled "Before Age 18" AND one response in the columns labeled "Age 18 or Older."

	BEFORE AGE 18			AGE 18 or OLDER			Do not wish to respond
	Before Age 18: Never	Before Age 18: One or Two Times	Before Age 18: More Than That	Age 18 or Older: Never	Age 18 or Older: One or Two Times	Age 18 or Older: More Than That	
BBTS1.) Been in a major earthquake, fire, flood, hurricane, or tornado that resulted in significant loss of personal property, serious injury to yourself or a significant other, the death of a significant other, or the fear of your own death.							
BBTS2.) Been in a major automobile, boat, motorcycle, plane, train, or industrial accident that resulted in similar consequences.							
BBTS3.) Witnessed someone with whom <u>you were very close</u> (such as a parent, brother or sister, caretaker, or intimate partner) committing suicide, being killed, or being injured by another person so severely as to result in marks, bruises,							

burns, blood, or broken bones. This might include a close friend in combat.							
BBTS4.) Witnessed someone with whom you were <u>not</u> so close undergoing a similar kind of traumatic event.							
BBTS5.) Witnessed someone with whom <u>you were very close</u> deliberately attack another family member so severely as to result in marks, bruises, blood, broken bones, or broken teeth.							
BBTS6.) You were deliberately attacked that severely by someone with whom <u>you were very close</u> .							
BBTS7.) You were deliberately attacked that severely by someone with whom you were <u>not</u> close.							
BBTS8.) You were made to have some form of sexual contact, such as touching or penetration, by someone with whom <u>you were very close</u> (such as a parent or lover).							
BBTS9.) You were made to have such sexual contact by someone with whom you were <u>not</u> close.							
BBTS10.) You were emotionally or psychologically mistreated over a significant period of time by someone with whom <u>you were very close</u> (such as a parent or lover).							
BBTS11.) Experienced the death of one of your own children.							

BBTS12.) Experienced a seriously traumatic event not already covered in any of these questions.							
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Appendix E: Experiences in Close Relationships-Revised (ECR-R) Questionnaire

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you *generally* experience relationships, not just in what is happening in a current relationship. Respond to each statement by clicking a circle to indicate how much you agree or disagree with the statement.

- Choose 1 if you **STRONGLY DISAGREE**
- Choose 2 if you **DISAGREE**
- Choose 3 if you **SLIGHTLY DISAGREE**
- Choose 4 if you **NEITHER AGREE NOR DISAGREE**
- Choose 5 if you **SLIGHTLY AGREE**
- Choose 6 if you **AGREE**
- Choose 7 if you **STRONGLY AGREE**

	1	2	3	4	5	6	7	Do not wish to respond
1. I'm afraid that I will lose my partner's love.								
2. I often worry that my partner will not want to stay with me.								
3. I often worry that my partner doesn't really love me.								
4. I worry that romantic partners won't care about me as much as I care about them.								
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.								
6. I worry a lot about my relationships.								
7. When my partner is out of sight, I worry that he or she might become interested in someone else.								
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.								
9. I rarely worry about my partner leaving me.								
10. My romantic partner makes me doubt myself.								
11. I do not often worry about being abandoned.								
12. I find that my partner(s) don't want to get as close as I would like.								
13. Sometimes romantic partners change their feelings about me for no apparent reason.								
14. My desire to be very close sometimes scares people away.								
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.								
16. It makes me mad that I don't get the affection and support I need from my partner.								
17. I worry that I won't measure up to other people.								
18. My partner only seems to notice me when I'm angry.								
19. I prefer not to show a partner how I feel deep down.								

20. I feel comfortable sharing my private thoughts and feelings with my partner.									
21. I find it difficult to allow myself to depend on romantic partners.									
22. I am very comfortable being close to romantic partners.									
23. I don't feel comfortable opening up to romantic partners.									
24. I prefer not to be too close to romantic partners.									
25. I get uncomfortable when a romantic partner wants to be very close.									
26. I find it relatively easy to get close to my partner.									
27. It's not difficult for me to get close to my partner.									
28. I usually discuss my problems and concerns with my partner.									
29. It helps to turn to my romantic partner in times of need.									
30. I tell my partner just about everything.									
31. I talk things over with my partner.									
32. I am nervous when partners get too close to me.									
33. I feel comfortable depending on romantic partners.									
34. I find it easy to depend on romantic partners.									
35. It's easy for me to be affectionate with my partner.									
36. My partner really understands me and my needs.									

Appendix F: Borderline Features (BOR) scale of the Personality Assessment Inventory (PAI) (Affective Instability items are highlighted)

	1. Not true at all, False	2. Slightly True	3. Mainly True	4. Very True	5. Do not wish to respond
BOR1.) My mood can shift quite suddenly.					
BOR2.) My attitude about myself changes a lot.					
BOR3.) My relationships have been stormy.					
BOR4.) My moods get quite intense.					
BOR5.) Sometimes I feel terribly empty inside.					
BOR6.) I want to let certain people know how much they've hurt me.					
BOR7.) My mood is very steady.					
BOR8.) I worry a lot about other people leaving me.					
BOR9.) People once close to me have let me down.					
BOR10.) I have little control over my anger.					
BOR11.) I often wonder what I should do with my life.					
BOR12.) I rarely feel very lonely.					
BOR13.) I sometimes do things so impulsively that I get into trouble.					

BOR14.) I've always been a pretty happy person.					
BOR15.) I can't handle separation from those close to me very well.					
BOR16.) I've made some real mistakes in the people I've picked as friends.					
BOR17.) When I'm upset, I typically do something to hurt myself.					
BOR18.) I've had times when I was so mad I couldn't do enough to express all my anger.					
BOR19.) I don't get bored very easily.					
BOR20.) Once someone is my friend, we stay friends.					
BOR21.) I'm too impulsive for my own good.					
BOR22.) I spend money too easily.					
BOR23.) I'm a reckless person.					
BOR24.) I'm careful about how I spend my money.					

Appendix G: Revised Conflict Tactics Scales Short Form (CTS2S) and Other Questions

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COUPLE CONFLICTS

No matter how well a couple gets along, there are times when they disagree, get annoyed with the other person, want different things from each other, or just have spats or fights because they are in a bad mood, are tired or for some other reason. Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences. Please mark how many times you did each of these things in the past year, and how many times your partner did them in the past year. If you or your partner did not do one of these things in the past year, but it happened before that, mark a "7" for that question. If it never happened, mark a "0".

In the past year, how often did this happen?

- | | |
|---------------------------------|--|
| 1 = Once in the past year | 5 = 11-20 times in the past year |
| 2 = Twice in the past year | 6 = >20 times in the past year |
| 3 = 3-5 times in the past year | 7 = Not in the past year, but it did happen before |
| 4 = 6-10 times in the past year | 0 = This has never happened |

1. I explained my side or suggested a compromise for a disagreement with my partner.	1 2 3 4 5 6 7 0	Do not wish to respond
2. <i>My partner explained his or her side or suggested a compromise for a disagreement with me.</i>	1 2 3 4 5 6 7 0	
3. I insulted or swore or shouted or yelled at my partner.	1 2 3 4 5 6 7 0	
4. <i>My partner insulted or swore or shouted or yelled at me.</i>	1 2 3 4 5 6 7 0	
5. I had a sprain, bruise, or small cut, or felt pain the next day because of a fight with my partner.	1 2 3 4 5 6 7 0	
6. <i>My partner had a sprain, bruise, or small cut or felt pain the next day because of a fight with me.</i>	1 2 3 4 5 6 7 0	
7. I showed respect for, or showed that I cared about my partner's feelings about an issue we disagreed on.	1 2 3 4 5 6 7 0	
8. <i>My partner showed respect for, or showed that he or she cared about my feelings about an issue we disagreed on.</i>	1 2 3 4 5 6 7 0	
9. I pushed, shoved, or slapped my partner.	1 2 3 4 5 6 7 0	
10. <i>My partner pushed, shoved, or slapped me.</i>	1 2 3 4 5 6 7 0	

11. I punched or kicked or beat-up my partner.	1 2 3 4 5 6 7 0	
12. <i>My partner punched or kicked or beat-me-up.</i>	1 2 3 4 5 6 7 0	
13. I destroyed something belonging to my partner or threatened to hit my partner.	1 2 3 4 5 6 7 0	
14. <i>My partner destroyed something belonging to me or threatened to hit me.</i>	1 2 3 4 5 6 7 0	
15. I went to see a doctor (M.D.) or needed to see a doctor because of a fight with my partner.	1 2 3 4 5 6 7 0	
16. <i>My partner went to see a doctor (M.D.) or needed to see a doctor because of a fight with me.</i>	1 2 3 4 5 6 7 0	
17. I used force (like hitting, holding down, or using a weapon) to make my partner have sex.	1 2 3 4 5 6 7 0	
18. <i>My partner used force (like hitting, holding down, or using a weapon) to make me have sex.</i>	1 2 3 4 5 6 7 0	
19. I insisted on sex when my partner did not want to or insisted on sex without a condom (but did not use physical force).	1 2 3 4 5 6 7 0	
20. <i>My partner insisted on sex when I did not want to or insisted on sex without a condom (but did not use physical force).</i>	1 2 3 4 5 6 7 0	

Not counting your current romantic partner, how many other romantic partners did any of the negative things to you that are listed above on this questionnaire while you were together? Please type only numbers.

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