Mediating and Moderating Factors in the Pathway from Child Maltreatment to Interpersonal Conflict Management in Young Adulthood

A dissertation presented to

the faculty of

the College of Arts and Sciences of Ohio University

In partial fulfillment

of the requirements for the degree

Doctor of Philosophy

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August 2018

This dissertation titled

Mediating and Moderating Factors in the Pathway from Child Maltreatment to Interpersonal Conflict Management in Young Adulthood

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Abstract

RAY, ANDRA R., Ph.D., August 2018, Psychology

Mediating and Moderating Factors in the Pathway from Child Maltreatment to Interpersonal Conflict Management in Young Adulthood

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Child maltreatment has been found to increase the risk of psychopathology and maladaptive functioning such as relationship problems (e.g., Larsen, Sandberg, Harper, & Bean, 2011) across multiple developmental stages. Considering that not all individuals with histories of maltreatment develop negative outcomes (e.g., Howell & Miller-Graff, 2014), understanding the process by which factors beyond the experience of maltreatment contribute to the development of social difficulties in young adulthood can be critical for the design of prevention and intervention efforts. Social-cognitive theories point to mechanisms such as rejection sensitivity and emotion dysregulation as potential sources of interpersonal vulnerability. Furthermore, theories of normative development indicate that the timing of child maltreatment may determine the magnitude of deleterious effects. This study was an investigation of the developmental psychopathological pathway between child maltreatment and interpersonal conflict management in young adulthood. The mediating roles of both rejection sensitivity and emotion dysregulation were considered, with findings primarily supporting the former mediation. Additionally, the moderating role of age of onset of child maltreatment was examined within the context of the aforementioned mediation models. None of the moderated mediation hypotheses were confirmed. Research and clinical implications, as well as future directions are discussed.

Dedication

To my parents, who taught me that education is the most valuable investment and who raised me in the spirit of perseverance toward the most ambitious goals. To my grandmother, who inspired me to always greet the world with a smile and who entrusted me in carying forward our family's legacy. To my husband, who has never waivered in his unconditional support for my pursuit of my career dreams.

Acknowledgements

I would like to express my utmost gratitude to my advisor, Dr. Steven W. Evans, who has afforded me the pleasure of countless intellectually stimulating conversations and whose mentorship over the years has been instrumental in my professional development. Many thanks to Dr. Nicholas P. Allan for his statistics consultation on this project. Thank you to my dissertation committee members, Drs. Steven W. Evans, Christine A. Gidycz, Brian T. Wymbs, Nicholas P. Allan, and Thomas Vander Ven, for making the time to provide guidance during the dissertation process and for their constructive feedback.

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Chapter 1: Theoretical Background

Child maltreatment is a serious public health concern with important consequences for the lives of children and their functioning as young adults. In the United States, it is estimated that 25% of children experience some form of child maltreatment in their lifetime (Finkelhor, Turner, Ormond, & Hamby, 2013) with 3.4 million reports to Child Protective Services per year and an annual death toll of 2.2 fatalities per 100,000 children (United States Department of Health and Human Services - U.S. DHHS, 2012). Beyond the concurrent impairment resulting from child maltreatment, individuals with such histories have an inherent risk for interpersonal problems during young adulthood (Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998).

Young adults are at an age of particular vulnerability to social impairment because this is a developmental period when dyadic relationships set the foundation for the developmental course of long-term romantic partnerships. The interactional patterns learned and practiced throughout childhood provide the scaffolding for the way in which young adults maintain relationships and resolve interpersonal conflicts (e.g., Cicchetti & Howes, 1991). Although child maltreatment is a risk factor for later social difficulties (e.g., low quality of adult romantic relationships; Larsen, Sandberg, Harper, & Bean, 2011), maltreatment experiences are not associated with negative outcomes in all cases, as a large body of research documents instances in which resilience prevails (e.g., Collishaw, Pickles, Messer, Rutter, Shearer, & Maughan, 2007; Howell & Miller-Graff, 2014).

A transdiagnostic model proposed by Nolen-Hoeksema and Watkins (2011) explains instances of multifinality by highlighting that mediating and moderating factors

are responsible for deleterious pathways from childhood adversity to adult impairment. Cognitive-affective theories, as well as empirical research indicate that variables such as rejection sensitivity, emotion regulation and timing of maltreatment may play a role in the development of distal social impairment. Understanding the mechanisms by which child maltreatment presents as vulnerability to negative outcomes in young adulthood is crucial for guiding both prevention and intervention efforts pertaining to social difficulties.

Child Maltreatment and Social Impairment

Child maltreatment is defined as "any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child" (Leeb, Paulozzi, Melanson, Simon, & Arias, 2008, p. 11). Acts of commission encompass physical, psychological, and sexual abuse, whereas acts of omission refer to neglect, as well as a failure to provide adequate supervision or to protect from violent environments. A report (U.S. DHHS, 2018) based on information available in the National Data Archive on Child Abuse and Neglect (NDACAN) indicates that most perpetrators of child abuse from 2016 had some parenting or caregiving capacity (77.6% parents; 3.6% unmarried partner of the parent; 0.3% foster parents; 0.3% legal guardians), 6.2% were another relative, and 4.1% of perpetrators had multiple relationship roles (e.g., both aunt and legal guardian of the child). Although child maltreatment may occur in the context of relationships outside the family, these instances encompass only 5.5% of child maltreatment reports (U.S. DHHS, 2018) with pepetrators belonging to categories such a friend or neighbor (1%), a daycare provider (0.3%), or another important individual (e.g., foster sibling, nonrelative, household staff, clergy,

individual serving in a professional capacity; 4.2%). Given that most child maltreatment acts are performed by a parent or a caregiver, child maltreatment is perhaps best understood as a "relational psychopathology" occurrence that emerges from a dysfunctional parent/caregiver-child-environment system (Cicchetti & Olsen, 1990). Specifically, the maltreated child learns to view the world through the lens of his/her experience with the perpetrator and/or the exposure to an environment that fosters violence and conflict.

Both social learning theory (Bandura, 1977) and biological predispositions create the premise for child victimization to elicit a risk for subsequent interpersonal dysfunction. Families in which child maltreatment occurs establish a setting in which strategies such as violence and intimidation are modeled as effective pathways to maintaining relationships and resolving conflicts (Cicchetti & Howes, 1991). Consistent with social learning theory, children assimilate these negative behaviors and apply them in their relationships with peers. For example, in a laboratory setting, 9- to 14-year old children with histories of child maltreatment displayed more interpersonal conflict and disagreement with their friends than their peers without a history of abuse (Parker & Herrera, 1996). Similarly, school-aged children who witnessed marital violence and/or who were subjected to severe maternal punishment reported conflictual relationships with their best friends (McCloskey & Stuewig, 2001). Child maltreatment is also viewed as an avenue toward interpersonal vulnerability, which translates into maladaptive interactions and/or violent relationships (e.g., Widom, Czaja, & DuMont, 2015). For example, children from families ridden with conflictual interactions may also have a genetic predisposition toward a difficult temperament style and associated social impairment.

Overall, both parent modeling and biological predispositions may be viewed as risk factors for the development of social difficulties in individuals with histories of child maltreatment.

Results from empirical studies and meta-analyses indicate a link between all types of child maltreatment and negative outcomes. For example, all types of maltreatment (i.e., neglect, physical, psychological, and sexual abuse) measured with the Childhood Trauma Questionnaire (Bernstein & Fink, 1998) yielded moderate correlations with trauma-related symptoms such as anxious arousal, depression, sexual disturbance, dissociation, and anger in a prospective study with adolescents and young adults (van Vugt, Lanctôt, Paquette, Collin-Vézina, & Lemieux, 2014). In relation to social functioning, young adult relationship disturbances such as walking out on a partner, being unfaithful, and getting a divorce were also associated with different types of child maltreatment such as physical abuse and neglect (Colman & Widom, 2004). Furthermore, in a meta-analysis of studies investigating the consequences of child maltreatment, researchers found robust evidence for outcomes such as internalizing disorders, suicide attempts, substance use, and risky sexual behaviors being associated with each of the following types of maltreatment: physical abuse, emotional abuse, and neglect (Norman et al., 2012). This diverse set of outcomes emerging from exposure to similar risk (i.e., child maltreatment) supports the framework of a transdiagnostic model that can be used to better understand the various deleterious pathways to multifinality. What is more, the relationship between child maltreatment and negative social outcomes follows a developmental conduit which manifests as individuals relying on the use of aversive social strategies in a variety of social contexts, from peer to romantic relationships.

Beginning in adolescence, romantic relationships of maltreated youth may present a variety of interpersonal challenges. Compared to their peers with no maltreatment experience, 15-year old adolescents exposed to maltreatment before the age of 12 reported higher levels of hostility, interpersonal sensitivity, and coercive communication with a dating partner, as well as problems with closeness and trust in intimate relationships (Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998). Importantly, these problems manifested as victimization and perpetration in the same individual, indicating that child maltreatment entails a risk for being on both the receiving and the delivery end of abuse in relationships. Furthermore, the interpersonal challenges from adolescence may escalate in severity and have repercussions in young adulthood. Child maltreatment predicts distal outcomes such as instability and dissolution of relationships, as evidenced by high rates of infidelity, separation, and divorce (Colman & Widom, 2004) and has been linked with precursors of these terminal relationship outcomes. For example, young adult correlates of child maltreatment entail low dyadic adjustment in adult relationships (Godbout, Sabourin, & Lussier, 2006), marital dissatisfaction (Perry, DiLillo, & Peugh, 2007), and fear of intimacy (Repic, 2007). Additionally, childhood experiences of psychological maltreatment are related to intimate partner violence perpetration and victimization in young adult relationships (Crawford & Wright, 2007; Zurbriggen, Gobin, & Freyd, 2010). Although, as described above, interpersonal difficulties may appear as coercive communication, hostile interactions, and violent behavior, a common denominator across these experiences pertains to the management of interpersonal conflict. Indeed, conflict management is important for the success of romantic relationships, as evidenced by the consistent inclusion of conflict resolution strategies in

multiple treatment approaches (e.g., cognitive behavioral, Gottman method, solution focused, and affective-reconstructive) for couples therapy (see Gurman, 2008 for details). Conflict management in interpersonal relationships could serve as a proxy for adaptive social functioning and the potential for the formation and maintenance of stable romantic relationships. Despite established connections between child maltreatment and interpersonal conflict management difficulties in young adulthood, an empirical question that remains unanswered pertains to the mechanism by which such a link exists.

From Child Maltreatment to Maladaptive Social Behaviors: Mediating Mechanisms

An explanation proposed by social-cognitive theorists regarding the appearance of deleterious outcomes in the aftermath of negative life events is the emergence of cognitive distortions or biases. For example, in response to adversity, a person may construct negative appraisals about the self as being vulnerable to victimization, others being insincere and unreliable, and the world being an unsafe place (Ehlers & Clark, 2000). Child maltreatment, in particular, is viewed as contributory to the development of similar negative cognitions, which emerge from a need of the child to both understand the causes of and develop strategies to prevent maltreatment from reoccurring (Gibb, 2002). A specific mechanism believed to be involved in the formation of cognitive distortions is rejection sensitivity.

Downey and Feldman (1996) explained that rejection sensitivity is acquired when children are faced with negative responses (e.g., rejection, maltreatment) from key individuals in their life (e.g., parents), which makes them become hypervigilant to any signs of threat, no matter how small or ambiguous these may be. Indeed, Erozkan (2015) found that retrospective reports of physical abuse, emotional abuse, sexual abuse,

physical neglect, and emotional neglect assessed via the Childhood Trauma Questionnaire (Bernstein & Fink, 1998) yielded medium correlations with rejection sensitivity scores on the Rejection Sensitivity Questionnaire (Downey & Feldman, 1996).

Conceptually, it could be argued that rejection sensitivity is similar to the construct of hostile attribution bias (HAB; Dodge, 1980), which involves a negative response to a neutral or ambiguous behavior of another person believed to have a hostile intent. Although both rejection sensitivity and hostile attribution bias are precursor cognitive mechanisms to maladaptive interpersonal behaviors such as aggression (e.g., Downey, Lebolt, Rincon, & Freitas, 1998; Crick & Dodge, 1994), the former may exist even in the absence of a confrontation with another person's behavior. This means that a rejection sensitive individual is not only prone to misinterpret social cues as negatively directed toward him/her (as is the case with HAB), but he/she also uses prior negative interpersonal experiences such as harsh discipline, exposure to family violence, emotional neglect, conditional love by a parent and others (e.g., Downey, Bonica, & Rincon, 1999; Feldman & Downey, 1994) as a basis for anticipatory anxiety related to the potential for threats from the environment. Pietrzak, Downey, and Ayduk (2005) refer to this as a "better safe than sorry" strategy, which is activated by a working defensive motivation system (DMS) that underlies efforts to gain acceptance and avoid rejection at all costs.

The DMS is believed to yield a flight or fight response in situations in which rejection is a possibility (e.g., asking someone to go on a date; negotiating individual needs in a couple), as well as in interpersonal contexts in which the individual experiences perceived rejection (e.g., romantic partner expressing disagreement). Within

this context, rejection sensitivity may act as a force that drives maladaptive behaviors in social situations.

Behavioral manifestations of rejection sensitivity may present as either perpetration or victimization, both of which have the potential to compromise the individual's social functioning. With regard to perpetration, individuals high in rejection sensitivity are believed to respond to perceived threats of rejection with maladaptive strategies for managing interpersonal conflicts such as hostility, aggression, coercion, and violence directed toward real or potential romantic partners. For example, women with high rejection sensitivity were more likely than those with low rejection sensitivity to report conflictual and hostile interactions with a romantic partner the day after they recorded rejection expectations in their diary (Downey, Irwin, Ramsay, & Ayduk, 2004). Rejection sensitivity was also found to predict dating violence in intimacy-seeking college men (Downey, Feldman, & Ayduk, 2000), as well as predict physical aggression and nonphysical hostility (e.g., ignoring the partner, making mean comments, doing something to elicit jealousy) during romantic conflicts of adolescent girls (Purdie & Downey, 2000).

With regard to victimization, individuals high in rejection sensitivity may display a passive approach to interpersonal conflict management, characterized by withdrawal, avoidance, or submission. For example, in an effort to preserve their romantic relationships and minimize conflict, adolescent girls with high rejection sensitivity reported a willingness to engage in sexual intimacy despite not feeling ready for this, to tolerate emotional, physical, or sexual abuse from their romantic partner, or to engage in delinquent behavior (e.g., shoplifting, substance use, skipping school) at the suggestion of

their boyfriends (e.g., Downey, Bonica, & Rincon, 1999; Purdie & Downey, 2000; Young & Furman, 2008). Moreover, in a daily-diary study of dating couples, individuals with high rejection sensitivity used self-silencing (i.e., actively avoiding confronting their partner about differences of opinion) and prioritized the needs of their partner over their own needs in order to prevent or minimize conflicts (Ayduk, May, Downey, & Higgins, 2003).

Whether in the form of perpetration or victimization, the common denominator across the aforementioned behavioral manifestations of rejection sensitivity is a maladaptive approach to managing interpersonal difficulties such as conflictual interactions with a romantic partner. Although it is unclear why some people become aggressors and others emerge as victims in response to threats of rejection, the aforementioned maladaptive behaviors often confirm their expectation of rejection (e.g., Downey, Freitas, Michaelis, & Khouri, 1998) and ultimately reinforce the vicious cycle of maltreatment – rejection sensitivity – impaired conflict management.

Rejection sensitivity is not the only mechanism that may explain deleterious outcomes in the aftermath of child maltreatment. Alternative views to social-cognitive theories point toward mechanisms such as emotion dysregulation as the likely mediator between child maltreatment and subsequent social impairment. As it pertains to adult populations, Gratz and Romer (2004) conceptualized emotion regulation difficulties as an umbrella term for deficits in the following domains: "(a) awareness and understanding of emotions; (b) acceptance of emotions; (c) the ability to engage in goal-directed behavior, and refrain from impulsive behavior, when experiencing negative emotions; and (d) access to emotion regulation strategies perceived as effective." Emotion dysregulation in

children and adolescents has been largely viewed as an inability to appropriately modulate the physiological, experiential and behavioral expressions of emotion (Bunford, Evans, & Wymbs, 2015) and is believed to be a product of both environmental factors such as parenting practices and biological aspects such as the child's temperament (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Beyond genetic predispositions for irritability and impulsivity, emotion dysregulation is conceptualized within the framework of social learning theory. In a review of family context factors affecting emotion regulation, Morris and colleagues (2007) provided several reasons that support the directional relationship between child maltreatment and emotion dysregulation. They explained that parents who use punitive strategies in response to children's emotional expression contribute to an increased emotional arousal in their children and foster strategies such as avoidance of emotional displays or maladaptive expression of sadness or anger in their children. Children use their parents as a social referencing system such that they look to their parents' reactions and behaviors to infer cues about how they should respond, think or feel about emotionally charged situations. Moreover, emotion dysregulation is not only a product of parental modeling, but can also emerge as a result of emotion contagion or as a distress response to the family's negative emotional climate.

In a review of the literature pertaining to child maltreatment and social functioning, Repetti and colleagues (2002) discussed evidence from multiple studies indicating that children exposed to family conflict are more likely than typical children to respond to conflictual situations with heightened emotional distress and behaviors such as aggression or poor initiation of social interactions. Furthermore, research (e.g., Shipman

et al., 2005; Shipman et al., 2007) shows that maltreating parents tend to invalidate children's emotional expression and provide limited support and scaffolding for the development of emotional awareness, distress tolerance and relevant coping strategies, hence facilitating emotion dysregulation in their children. In turn, emotion dysregulation is associated with both concurrent and subsequent internalizing and externalizing psychopathology in childhood (Kim & Cicchetti, 2010) and adolescence (Heleniak, Jenness, Vander Stroep, McCauley, & McLaughlin, 2016), as well as more distal outcomes such as romantic relationship violence (e.g., Berzenski & Yates, 2010). To this end, emotion dysregulation may be viewed as a potential mediator that bridges child maltreatment and young adult interpersonal difficulties.

As discussed above, theoretical underpinnings as well as empirical evidence provide support for the consideration of both rejection sensitivity and emotion dysregulation as possible explanatory mechanisms in the pathway from child maltreatment to poor conflict management. Considering the transdiagnostic model proposed by Nolen-Hoeksema and Watkins (2011), rejection sensitivity and emotion dysregulation may be viewed as components that have the potential to steer the direction of pathways towards distal negative outcomes. However, considering that this process occurs across multiple developmental stages from childhood into early adulthood, a key missing ingredient of this model may be the time when the maltreatment happened.

Child Maltreatment in a Developmental Psychopathology Context: Moderating Mechanism

Developmental processes that take place across childhood and adolescence provide some hypotheses related to the vulnerability of youth for child maltreatment and

subsequent outcomes, depending on the age at which such processes are experienced. As explained below, the way in which children may be impacted by maltreatment varies as a function of the developmental stage at which adversity occurs.

At a global level, early maltreatment is associated with a failure to meet some developmental milestones, which puts children at risk for later distress, psychopathology, and a snowballing effect of falling behind the normative curve of development (Cicchetti & Toth, 1995). One of the important areas of development from early childhood is attachment (Ainsworth, Blehar, Waters, & Wall, 1978). Considering that, by definition, child maltreatment is perpetrated by a parent/caregiver, maltreated children may become insecurely attached to their parents/caregivers (see Baer & Martinez, 2006 for a review). This creates the opportunity for the development of an impaired socio-emotional foundation emerging from the paradoxical situation in which the parent/caregiver is both the source of comfort and fear (van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Compared to older children or adolescents, behaviorally and physically, young children may have less potential to defend themselves. They might also have less developed coping strategies for handling maltreatment than their older peers (Carlson, Furby, Armstrong, & Schlaes, 1997).

Older children and adolescents may be able to mitigate the risks associated with child maltreatment given that they have had an opportunity to develop theory of mind (ToM; Wimmer & Perner, 1983). The acquisition of ToM entails the ability to explain and predict other people's thoughts and behaviors (Wellman & Liu, 2004), including those of the perpetrator of child maltreatment. This may allow youth to better control their environment by being able to make social inferences and potentially employ some

safe-guards (e.g., stay out of the parent's way when he/she is angry). Furthermore, older children also have an increased opportunity to interact with a variety of adults who may provide social modeling that may challenge social information processing based only on the perpetrator's behavior. For example, individuals such as teachers or coaches may be in a position to show a child that he/she can be accepted and appreciated for who she/he is, even if this not the message communicated at home.

Despite some of the aforementioned protective factors inherent in later developmental stages, older youth exposed to maltreatment are also at risk for negative outcomes via a diverse range of internalized processes. For example, advanced cognitive capacities such as abstract thinking, metacognition, and self-reflection can facilitate the formation of cognitive schemas based on cognitive reinterpretations of the experience of maltreatment. The inherent need to form cause and effect connections, coupled with an increased cognitive capacity to encode, store and interpret information enable the formation of negative cognitions associated with maltreatment experiences (Gibb, 2002). As previously discussed, such distorted thought patterns are instrumental in the development of future maladaptive behaviors such as aggression (Purdie & Downey, 2000) or actively avoiding confrontation (Ayduk, May, Downey, & Higgins, 2003). Additionally, the propensity to generate personal fables, the view that what happens to adolescents is unique, exceptional and not shared by anyone else, may hyperbolize the experience of maltreatment as well as increase a sense of idiosyncratic vulnerability. For instance, adolescents may think that nobody else has been treated so badly, that no one can possibly understand their experience, and even that there might be something

intrinsically wrong with them, or that other people are out to get them (Alberts, Elkind, & Ginsberg, 2007; Hill & Lapsey, 2011).

Furthermore, as teenagers begin to negotiate autonomy-related changes (Steinberg, 2001) and reconcile differences in expectations and ideas about social conventions (Collins, 1990; Smetana, 1988), maladaptive parent-child interactions may increase. In fact, parent-child conflict reaches its peek in early adolescence (Lauren, Coy, & Collins, 1998). This creates a setting in which the child may not only be the victim of maltreatment, but may also put into practice some of the observed behaviors of the perpetrator (e.g., violence, verbal aggression), especially given that the youth may now be more physically apt to engage in such behaviors than at a younger age. As much as progress in cognitive, social, and physical development may contribute to the use of helpful coping skills and self-defense mechanisms (Holmbeck, Devine, Wasserman, Schellinger, & Tuminello, 2012), these advancements may also carry an inherent risk of internalizing victimization discourse and eliciting maladaptive behaviors. Overall, the developmental literature provides support to the idea that all youth, regardless of age, carry an inherent risk to negative outcomes as a result of maltreatment experiences.

Research pertaining to the timing of child maltreatment further emphasizes the propensity for negative consequences and indicates that age of onset plays a role in the direction of expected outcomes. For instance, Kaplow and Widom (2007) showed that an early onset of maltreatment (i.e., before age 5 years) predicted anxiety and depression symptoms in adulthood, whereas later onset (i.e., between ages 6 and 11 years) corresponded to behavioral problems in adulthood. These links between early child maltreatment and later internalizing problems (e.g., anxiety, depression, low self-esteem),

as well as between later child maltreatment and externalizing problems (e.g., conflictual interactions, delinquency, substance use) have been consistently found across studies (e.g., Keiley, Howe, Dodge, Bates, & Pettit, 2001; Manly, Kim, Rogosch, & Cicchetti, 2001; Thornberry, Ireland, & Smith, 2001), with small to medium effect sizes for these relationships across all age groups. The consideration of the aforementioned findings together with the intersection between typical development and child maltreatment, highlight that timing of maltreatment plays a role in skewing the direction of the possible pathways present in a transdiagnostic model characterized by multifinality. What remains unexplained, however, is the way in which timing dictates the strength of the relationship between child maltreatment and cognitive distortions (e.g., rejection sensitivity) or affective processes (e.g., emotion dysregulation) on one hand, and between these coping mechanisms and their maladaptive behavioral manifestations (e.g., poor interpersonal conflict management) on the other hand.

Applying the Transdiagnostic Model to Child Maltreatment

The totality of the literature reviewed above creates the premise for the application of the transdiagnostic model described by Nolen-Hoeksema and Watkins (2011) in explaining the way in which individuals exposed to child maltreatment may be at risk for distal negative social outcomes such as poor conflict management in young adulthood. In the authors' view, both genetic loadings and environmental components can be conceptualized as distal risk factors in the development of psychopathology or as threats to adaptive functioning. In the case of individuals with histories of child maltreatment, as discussed in previous sections, the intergenerational transmission of abuse hypothesis explains the biological predisposition for maladaptive social

interactions. Additionally, child maltreatment can also be viewed as an environmental factor that represents another risk for negative outcomes.

As delineated by Nolen-Hoeksema and Watkins' model, exposure to a risk factor does not translate into a single predetermined outcome, but instead creates a propensity for various paths to multifinality. The direction and outcome of these pathways is steered by additional variables that are interjected between the initial risk factor and the distal outcomes and serve the function of mediators or moderators.

As reviewed above, social-cognitive theories identify both rejection sensitivity and emotion dysregulation as potential mechanisms that may explain the relationship between child maltreatment and distal social difficulties. To this end, both of these variables can be conceptualized as potential mediating factors. Furthermore, the developmental literature discussed in the previous section highlights that the developmental stage at which child maltreatment occurs may qualitatively determine the propensity for internalizing versus externalizing challenges which may ultimately determine the distal outcome. Considering that rejection sensitivity and emotion dysregulation emerge within the context of typical developmental stages, the interaction of the mediating variables with the timing of maltreatment is a necessary component to be considered within the transdiagnostic model of child maltreatment. Therefore, age of onset of maltreatment may be conceptualized as a potential moderator of the proposed mediated relationships.

Current Study

The current study was intended to test the model proposed by Nolen-Hoeksema and Watkins (2011) as applied specifically to the relationship between child maltreatment

and interpersonal conflict management in young adulthood. To this end, rejection sensitivity and emotion dysregulation served as mediators and timing of maltreatment acted as a moderator. This study advanced from a simple examination of the 'trauma and social outcome' association, to explaining conditional indirect effects involved in a developmental trajectory from child maltreatment to interpersonal conflict management. Specifically, the following research questions (RQs) were addressed:

RQ1: Do rejection sensitivity and/or emotion dysregulation mediate the relationship between child maltreatment and interpersonal conflict management in young adulthood?

RQ2: Does timing of child maltreatment moderate the mediated relationship between child maltreatment and interpersonal conflict management in young adulthood?

Chapter 2: Method

Participants

Participants in the final sample used in this study were 428 undergraduate college students (39.3% male, 60.7% female). To be included in the study, participants had to be of 18 to 24 years of age and identify as male or female. Data was excluded from analyses if (a) the participant did not complete all the core study measures (i.e., independent variables, mediators, dependent variable), (b) the time of survey completion was insufficient to read all items and respond based on personal experiences (i.e., less than 15 minutes), and (c) data from the participant was determined to be a multivariate outlier. The racial and ethnic identity of the participants was as follows: 5.6% Black or African American, 3% Asian, 87.9 % White or Caucasian, 3.5% Other Race, and 3% Hispanic. Most (65.4%) participants were college freshmen, 22% were sophomores, 7.9% were juniors, and 4.4% were seniors. General psychopathology characteristics were normally distributed in this sample (see Table 1).

Table 1

General Psychopathology Characteristics

IDAS scale	*N*	Min.	Max.	*M*	*SD*	Skewness	Kurtosis	Cronbach's α
General depression	427	31.68	90.09	50.63	12.22	0.95	0.41	.93
Dysthymia	427	34.85	89.21	51.00	11.86	0.86	0.12	.91
Suicidality	427	45.59	129.24	50.97	12.01	3.27	12.35	.86
Lassitude	427	33.53	80.04	50.34	9.22	0.73	0.23	.78
Insomnia	427	37.42	85.33	50.69	9.99	0.88	0.39	.80
Appetite loss	427	40.94	87.81	49.96	11.09	1.39	1.57	.93
Appetite gain	427	38.59	79.83	49.06	9.12	1.07	0.85	.76
Ill temper	427	39.94	96.76	49.35	10.12	1.62	2.97	.82
Wellbeing	426	34.51	73.84	53.31	7.21	-0.18	-0.39	.42
Social anxiety	427	39.44	90.46	51.79	12.03	1.04	0.38	.88
Panic	427	41.15	111.57	50.28	11.86	2.07	4.96	.88
Traumatic Intrusions	427	40.90	96.26	49.39	11.35	1.86	3.50	.83

Note: IDAS = Inventory of Depression and Anxiety Symptoms; *N* = sample size of participants who completed this measure; *Min.* = minimum value; *Max.* = maximum value; *M* = mean; *SD* = standard deviation. Scores on the IDAS were standardized to t-scores based on normative data for college students available in Watson et al., 2007. T-scores have a mean of 50 and a standard deviation of 10.

Procedures

Participants were recruited through the Psychology Pool at Ohio University. Information about the study was posted on the university campus, via printed flyers (see Appendix A) and online (on a page accessed by students interested in earning class credit for participation in studies; see Appendix B). College students interested in participating accessed a link to the online consent form (see Appendix C) for this study. Those who consented to participate were redirected to a separate page on which they completed all measures associated with this study online, hence being able to preserve anonymity. Participants were also debriefed at the end of the study (see Appendix D). All measures were administered using the Research Electronic Data Capture (REDCap; Harris et al., 2009) tools hosted at Ohio University. Participation in this study was compensated with course credit. All study procedures were approved by the Institutional Review Board.

Measures

Basic demographic information was collected via a brief demographics questionnaire (see Appendix E) designed for the purpose of this study.

The Inventory of Depression and Anxiety Symptoms (IDAS; Watson et al., 2007) is a 64-item self-report measure of symptoms of major depression and anxiety disorders (see Appendix F). The IDAS provides information about multiple facets of psychopathology, including: general depression, dysthymia, suicidality, lassitude, insomnia, appetite loss, appetite gain, ill temper, wellbeing, panic, social anxiety, and traumatic intrusions. Items are rated on a scale from 1 (*not at all*) to 5 (*extremely*). The measure was normed on undergraduate college students and showed good internal consistency and validity (Watson et al., 2007). Internal consistency values for this sample

were acceptable to excellent, ranging from .76 to .93, with the exception of the wellbeing scale which yielded an unacceptable reliability value of .42 (see Table 1). Therefore, inferences about the psychopathology characteristics of the sample should be restricted to the IDAS scales with at least acceptable Cronbach's α values.

The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) is a 10-item screening tool intended to assess alcohol consumption, drinking behaviors, and alcohol-related problems (see Appendix G). Participants report the frequency of their drinking on a scale from 0 (*never*) to, 4 (*4 or more times a week*), the number of alcoholic drinks consumed on a typical drinking occasion on a scale from 0 (*1 or 2 drinks*) to 4 (*10 or more drinks*), how often they have experienced problems associated with their drinking on a scale from 0 (*never*) to 4 (*daily or almost daily*), and the impact of their drinking on others. The total score is computed as a sum of scores on all items, with high scores being indicative of greater problems with alcohol use. In comparison to other screeners for alcohol use problems, dependence, and problem drinking behaviors, the AUDIT has evidenced a high degree of accuracy and reliability (e.g., Reinert & Allen, 2007). The AUDIT was used as a control variable in all analyses. The internal consistency of the AUDIT in this study was .98.

The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) is a 28-item retrospective self-report measure of childhood abuse and neglect history (see Appendix H). Each item is rated on a 5-point Likert scale ranging from 0 (*never true*) to 4 (*very often true*), with some items being reverse-coded. High scores on this measure are indicative of high levels of reported abuse. The CTQ can yield a total score and subscale scores pertaining to the following factors: (1) physical abuse (e.g., I was punished with a

belt, a board, a cord, or some other hard object.), (2) emotional abuse (e.g., People in my family said hurtful or insulting things to me.), (3) emotional neglect (e.g., My family was a source of strength and support.), (4) sexual abuse (e.g., Someone tried to touch me in a sexual way or tried to make me touch them.), and (5) physical neglect (e.g., I had to wear dirty clothes.). Additionally, the Minimization/Denial validity scale composed of three out of the 28 items from the CTQ can provide information pertaining to underreporting of maltreatment. Internal consistency coefficients ranged from .79 to .94 for the CTQ subscales and reliability for the total scale was .95 (Bernstein et al., 1994). In the same study by Bernstein and colleagues (1994), test-retest reliability at a mean interval of 3.6 months was also high for the subscales (ICC=.80-.83) and for the total CTQ scale (ICC=.88). In a study with Canadian undergraduate students from an introductory psychology class (Paivio & Cramer, 2004), reliability coefficients ranged from .70 to .93 (internal consistency) and from .66 to .94 (8-10 week test-reliability). The CTQ has been validated across clinical and non-clinical populations of various ages, including undergraduate students (e.g., Dudeck et al., 2015; Paivio & Cramer, 2004). Studies consistently found support for a 5-factor structure of the CTQ, as well as an excellent model fit for an overall factor of child maltreatment. Additionally, evidence was found for construct validity when using therapist ratings of maltreatment (e.g., Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein et al., 2003) and moderate convergent validity with a standardized clinical interview administered four years prior to the completion of the CTQ (Spinhoven et al., 2014). For the present study, internal consistency coefficients for the CTQ subscales ranged from .29 to .80 (see Table 2) and the reliability for the total CTQ was .82. Subscale reliability was unacceptable for the

physical abuse and physical neglect subscales, making these variables inappropriate for use as independent variables in subsequent analyses. However, because the reliability for the total scale was good, this variable was retained for conducting the relevant analyses in this study, despite the poor reliability for the aforementioned subscales.

Table 2

Descriptive Statistics

Measure	*N*	Min.	Max.	*M*	*SD*	Skewness	Kurtosis	Cronbach's α
CTQ - emotional abuse	428	5.00	24.00	6.79	2.95	2.36	6.63	.80
CTQ - physical abuse	428	5.00	12.00	5.67	1.20	2.04	4.12	.29
CTQ - sexual abuse	428	5.00	11.00	5.12	0.67	6.06	38.23	.76
CTQ - emotional neglect	428	5.00	21.00	7.32	3.35	1.85	3.21	.76
CTQ - physical neglect	428	5.00	13.00	5.92	1.60	1.96	3.39	.29
CTQ - total score	428	25.00	69.00	30.82	6.99	1.98	5.18	.82
Age of onset:								
emotional abuse	201	1.00	17.00	10.25	4.00	-0.38	-0.46	n/a
physical abuse	134	1.00	17.00	6.61	3.16	1.15	1.71	n/a
sexual abuse	18	4.00	17.00	10.61	4.42	0.17	-1.53	n/a
emotional neglect	438	1.00	17.00	1.80	2.67	3.96	16.43	n/a
physical neglect	426	1.00	17.00	1.59	2.18	4.49	22.18	n/a
total abuse	428	1.00	17.00	1.37	1.68	6.04	43.12	n/a
DERS - total score	428	38.00	153.00	83.30	23.03	0.55	-0.30	.94
RSQ - total score	428	1.28	29.44	8.76	3.72	0.97	2.63	.87
ICQ - conflict management	428	1.13	5.00	3.46	0.58	-0.25	0.64	.79
AUDIT - total score	427	0.00	30.00	7.07	5.52	0.97	0.98	.83

Note: *N* = sample size of participants who completed each respective measure; *Min.* = minimum value; *Max.* = maximum value; *M* = mean; *SD* = standard deviation; CTQ = Childhood Trauma Questionnaire; DERS = Difficulties in Emotion Regulation Scale; RSQ = Rejection Sensitivity Questionnaire; ICQ = Interpersonal Competence Questionnaire; AUDIT = Alcohol Use Disorder Identification Test

Timing of child maltreatment was measured by adding an item following each CTQ item endorsed at a level of 1 or above. This was intended to capture the age of onset of the earliest maltreatment experience. Specifically, the participants were asked: "How old were you when this happened?" and had to check all boxes corresponding to the respective age in years. Participants could check one or multiple boxes with regard to the age at which maltreatment occured. To compute the age of onset variable, the lowest age endorsed across all items within each type of abuse was considered. This method of assessing timing of child maltreatment was similar with the approach used by other researchers who collected retrospective self-report pertaining to age of onset of maltreatment experiences (e.g., Dunn, McLaughlin, Slopen, Rosand, & Smoller, 2013).

The Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996) is an 18-item self-report instrument measuring an individual's rejection sensitivity as a composite of rejection concern and acceptance expectancy (see Appendix I). Each item describes a specific situation commonly encountered by college students (e.g., You ask someone in one of your classes to coffee). Every item is followed by two questions pertaining to (a) experienced concern/anxiety related to the other person's response (e.g., How concerned or anxious would you be over whether or not the person would want to go?) and (b) the expectation for how the other person might respond to the request (e.g., I would expect that the person would want to go with me.). Responses to the two questions for each item are rated on a 6-point Likert scale ranging from 1 (*very unconcerned*) to 6 (*very concerned*) and from 1 (*very unlikely*) to 6 (*very likely*) respectively. A high score on the RSQ is reflective of high rejection sensitivity. The RSQ demonstrated high internal consistency (Chronbach's $\alpha = .83$) in a sample of undergraduate college students

(Downey & Feldman, 1996). Additionally, the RSQ yielded test-retest reliability at three weeks of .83 (Downey & Feldman, 1996). Moreover, individuals with high scores on the RSQ were more likely than those with low RSQ scores to perceive an ambiguous situation as one in which the other person intentionally rejected them in both a laboratory setting and in the context of a romantic relationship (Downey & Feldman, 1996). Internal consistency of the RSQ in the current study was .87.

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report measure of emotion dysregulation. Items are rated on a 5-point Likert scale ranging from 1 (*almost never; 0-10%*) to 5 (*almost always; 91-100%*). High scores on the DERS (see Appendix J) indicate greater difficulty with emotion regulation. Some items are reverse-scored. The DERS can yield a total score and subscale scores pertaining to the following factors: (1) nonacceptance of emotional responses (e.g., When I'm upset, I become angry with myself for feeling that way), (2) difficulties engaging in goal-directed behavior (e.g., When I'm upset, I have difficulty getting work done.), (3) impulse control difficulties (e.g., I experience my emotions as overwhelming and out of control.), (4) lack of emotional awareness (e.g., I pay attention to how I feel.), (5) limited access to emotion regulation strategies (e.g., When I'm upset, I believe that I will remain that way for a long time.), and (6) lack of emotional clarity (e.g., I have no idea how I'm feeling.). The DERS demonstrated high internal consistency ($\alpha = .93$) and good test–retest reliability ($r = .88$) over a period ranging from 4 to 8 weeks (Gratz & Roemer, 2004). The DERS was also found to have good construct and predictive validity (Vasilev, Crowell, Beauchaine, Mead, & Gatzke-Kopp, 2009; Weinberg & Klonsky, 2009). In this

study, the internal consistency coefficients for the DERS subscales ranged from .79 to .91, with the reliability for the total scale being .94.

The Interpersonal Competence Questionnaire (ICQ; Buhrmester, Furman, Wittenberg, & Reis, 1988) is a 40-item self-report measure designed for assessing one's competence in the interpersonal domain (see Appendix K). Each item describes an interpersonal situation (e.g., Being able to admit that you might be wrong when a disagreement with a close companion begins to build into a serious fight), which is rated on a 5-point scale to reflect the participant's level of competence and comfort in managing the respective situation. Answer choices range from 1 (*I'm poor at this; I'd feel so uncomfortable and unable to handle this situation, I'd avoid it if possible*) to 5 (*I'm EXTREMELY good at this; I'd feel very comfortable and could handle this situation very well*). Participants can be directed to respond to items considering their interaction with a same-sex friend or with an opposite-sex date or romantic partner. The ICQ has a 5-factor structure yielding the following areas of interpersonal competence: (1) initiation of relationships, (2) disclosure of personal information, (3) assertion of displeasure with others, (4) provision of emotional support, and (5) conflict management. High scores are reflective of high interpersonal competence. For the purpose of this study, only responses to items pertaining to the conflict management subscale were analyzed. Reliability coefficients for the ICQ subscales ranged from .77 for the conflict management subscale to .86 for the initiation of relationships subscale (Buhrmester, Furman, Wittenberg, & Reis, 1988). Additionally, test-retest reliability at four weeks yielded coefficients ranging from .69 (conflict management) to .89 (initiation of relationships) across the five subscales (Buhrmester, Furman, Wittenberg, & Reis, 1988). The ICQ factors showed

small to medium correlations with other measures of social functioning (e.g., dating frequency, popularity, assertion, social reticence), with the initiation subscale yielding the strongest correlations (Buhrmester, Furman, Wittenberg, & Reis, 1988). The ICQ has been extensively used with a large variety of samples including undergraduate college students (Buhrmester, Furman, Wittenberg, & Reis, 1988). In this study, the internal consistency coefficients for the ICQ subscales ranged from .78 to .87, with the conflict management subscale yielding a Chronbach's α of .79.

Chapter 3: Results

Preliminary Analytic Steps

Before conducting any of the primary analyses for this study, several data screening steps were taken to detect any problems with the original data set ($N = 479$). First, data from participants who did not meet inclusion criteria for age ($n = 8$) and gender ($n = 2$) were excluded from further consideration. Second, data from one participant were disregarded because of not completing one of the core measures for the study (i.e., the CTQ). Third, surveys completed in less than 15 minutes ($n = 14$) were considered invalid, because this is insufficient time to read all items and respond based on personal experiences. The completion time of 15 minutes was selected as it was one standard deviation below the mean completion time for this sample.

After excluding data based on the criteria noted above, issues related to univariate and multivariate outliers were addressed. Corrections for univariate outliers were performed. Specifically, all responses that were at least three standard deviations (*SDs*) away from the mean were set to the value of the mean ± 3 *SDs*. Next, multivariate outliers were detected using the Mahalanobis distance. The threshold for what constituted a multivariate outlier was determined using a formula that returned the cumulative probability that the value was from the chi-square distribution. All multivariate outliers ($n = 26$) were excluded from further analyses. The final sample size used in this study after the aforementioned exclusions was 428 participants.

Data from the final sample were used to perform descriptive statistics for all variables of interest to the primary research questions (see Table 2) and to compute Pearson correlations among the study variables (see Table 3). Given that the sample was

recruited from the general population of college students, the fact that trauma endorsements were positively skewed was expected, considering that most people do not experience severe childhood trauma in their lives. However, all other measures of interest besides the CTQ have low skewness with absolute values lower than 1, indicating a close to normal distribution of those respective characteristics.

A detailed look at the data pertaining to trauma endorsements indicates that all or almost all participants experienced at least a minimal level of emotional or physical neglect growing up, with almost half of them experiencing emotional abuse and a small percentage experiencing physical or sexual abuse (see Table 4a). Notably, in this sample, the validity scores on the trauma measure (see Table 4b) suggest that about half of the participants may have underreported their experience of maltreatment, potentially as a result of social desirability biases. Moreover, internal consistency values for the physical abuse and the physical neglect scales were very poor, thus precluding their use as independent variables in any analyses. Therefore, the results from the main analyses from this study should be interpreted within the context of these limitations.

Table 3

Pearson Correlations Among Study Variables

Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1. Gender	-	-.159**	.115*	-.043	.063	-.079	-.092	-.012	-.033	.126**	-.014
2. AUDIT		-	.064	-.024	.045	.011	.063	.047	-.052	.072	-.033
3. CTQ - emotional abuse			-	.338**	.154**	.509**	.347**	.817**	.297**	.245**	-.076
4. CTQ - physical abuse				-	.071	.204**	.151**	.454**	.079	-.007	-.093
5. CTQ - sexual abuse					-	.070	.051	.218**	.022	.067	.002
6. CTQ - emotional neglect						-	.511**	.852**	.290**	.210**	<.001
7. CTQ - physical neglect							-	.650**	.186**	.167**	-.021
8. CTQ – total								-	.322**	.247**	-.053
9. RSQ									-	.401**	-.169**
10. DERS										-	-.240**
11. ICQ - conflict management											-

Note: Gender is coded 1 for male and 2 for female; CTQ = Childhood Trauma Questionnaire; DERS = Difficulties in Emotion Regulation Scale; RSQ = Rejection Sensitivity Questionnaire; ICQ = Interpersonal Competence Questionnaire; AUDIT = Alcohol Use Disorder Identification Test.

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 4

Trauma Characteristics

(a) Level of Severity by Trauma Type

Trauma type	Any trauma	None to Minimal	Low	Moderate	Severe
			n (%)		
Emotional abuse	201 (47.0)	347 (81.1)	57 (13.3)	14 (3.3)	10 (2.3)
Physical abuse	134 (31.3)	389 (90.9)	33 (7.7)	6 (1.4)	0 (0)
Sexual abuse	18 (4.2)	410 (95.8)	7 (1.6)	11 (2.6)	0 (0)
Emotional neglect	428 (100.0)	347 (81.1)	56 (13.1)	14 (3.3)	11 (2.6)
Physical neglect	426 (99.5)	365 (85.3)	44 (10.3)	17 (4.0)	2 (.5)

Note: n = sample size; % = percent of sample. *Any trauma* refers to any endorsement of trauma history in the respective category, above the "none" threshold.

(b) Trauma History Validity Scores

Score on the CTQ Minimization/Denial Scale	*n* (%)
0	180 (42.1)
1	97 (22.7)
2	75 (17.5)
3	76 (17.8)

Note: n = sample size; % = percent of sample; CTQ = Childhood Trauma Questionnaire; Scores of 1 through 3 indicate possible underreporting of maltreatment (false negatives); additional data about trauma history may be needed to confirm the absence of abuse or neglect.

The research questions for this study were investigated through the use of structural equation modeling in Mplus version 7 (Muthén & Muthén, 1998-2015), which allowed for the use of bootstrapping, a recommended approach for assessing indirect effects (e.g., Hayes, 2015; MacKinnon, Fairchild, & Fritz, 2007; Wang & Preacher,

2015). The main advantages of this method are being able to use a smaller sample size than previous approaches in order to detect meaningful results (Fritz & MacKinnon, 2007) and to bypass problems related to non-normality due to not having to meet assumptions for the sampling distribution (e.g., MacKinnon, Fairchild, & Fritz, 2007). The final sample size used in this study ($N = 428$) exceeded the minimum sample size ($N = 404$) calculated a priori using the table provided by Fritz and MacKinnon (2007) for adequate power (.8) needed to conduct the core analyses for this study. To address issues related to multicollinearity specific to interaction terms, all predictor variables were mean-centered prior to conducting any analyses (Aiken & West, 1991; Dalal & Zickar, 2012).

Mediation Analyses

The first set of analyses was aimed at investigating the first research question, which pertained to the hypothesized mediation roles of rejection sensitivity and emotion regulation in the relationship between child maltreatment and interpersonal conflict management. First, models with one mediator were tested, considering each type of trauma, as well as overall maltreatment as predictor variables. Then, models containing both mediators were tested for situations in which significant indirect effects were found for both solitary mediator models. Gender differences may exist in the way in which individuals manage conflict. For example, masculine approaches to conflict were found to reflect a dominant or externalizing style, whereas feminine approaches to conflict were associated with avoidance of conflict (Brewer, Mitchell, & Weber, 2002). Furthermore, individual differences in conflict management may also be impacted by alcohol use, as an extensive body of literature points to alcohol intoxication being linked to hostility and

violence in interpersonal conflict (Klostermann & Fals-Stewart, 2006). Alcohol use is important to consider given its prevalence in college students, with 60% of students of ages 18 to 22 reporting drinking alcohol in the past month and two thirds of drinkers endorsing binge drinking behaviors during this time frame (SAMHSA, 2014). Therefore, models for all analyses controlled for gender and alcohol use.

The first step in interpreting the results of the mediation analyses was to evaluate model fit. Overall model fit was examined through the use of the likelihood ratio test, which needed to yield a nonsignificant χ^2 value to demonstrate good fit. Approximate fit indices such as the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) were also investigated. Values for good model fit are larger than .97 for CFI (Schermelleh-Engel, Moosbrugger, & Muller, 2003), lower than .06 for RMSEA (Hu & Bentler, 1999), and lower than .08 for the upper bound of the RMSEA 90% confidence interval (MacCallum, Browne, & Sugawara, 1996). Values for acceptable or adequate fit are .95 to .97 for CFI and .06 to .08 for RMSEA (Schermelleh-Engel, Moosbrugger, & Muller, 2003). Values between .08 and .10 for RMSEA are considered mediocre fit (Schermelleh-Engel, Moosbrugger, & Muller, 2003). Next, for mediation effects to be demonstrated, the confidence intervals of the indirect effects must not contain zero (Hayes, 2015).

The results of the mediation analyses for the solitary models with rejection sensitivity are noted in Table 5. Model fit indices across all of these analyses were good based on nonsignificance of the χ^2, RMSEA, and CFI. The model for emotional abuse was the only one in which the CFI value barely missed the threshold for adequate fit (i.e., .95) with a value of .944. Although the effects of gender and alcohol use on conflict

management were nonsignificant, the inclusion of these variables in the model was relevant, as it improved model fit. Rejection sensitivity significantly mediated the relationships between child maltreatment and conflict management for overall trauma and emotional trauma (i.e., emotional abuse and emotional neglect), but not for sexual abuse.

Table 5

Results of Mediation Analyses for Solitary Models with Rejection Sensitivity

(a) Emotional Abuse Analysis

Model Fit	$\chi^2 = 4.631$, $p = .099$	*RMSEA* = .056 90% CI: [.000; .124]	*CFI* = .944
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	-.008	.060	.888
Rejection sensitivity	-.154	.053	.004
Gender	-.016	.047	.727
Substance use	-.043	.049	.382
Trauma → Rejection sensitivity	.292	.051	< .001
Indirect effect	estimate = -.045; 95% CI: [-.082; -.013]		

(b) Sexual Abuse Analysis

Model Fit	$\chi^2 = 1.510$, $p = .470$	*RMSEA* < .001 90% CI: [.000; .088]	*CFI* = 1.000
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.008	.035	.832
Rejection sensitivity	-.157	.054	.004
Gender	-.018	.047	.701
Substance use	-.045	.049	.365
Trauma → Rejection sensitivity	.024	.036	.529
Indirect effect	estimate = -.004; 95% CI: [-.018; .008]		

Table 5 continued

(c) Emotional Neglect Analysis

Model Fit	$\chi^2 = 1.137$, $p = .566$	*RMSEA* < .001 90% CI: [.000; .081]	*CFI* = 1.000
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.040	.056	.481
Rejection sensitivity	-.169	.055	.003
Gender	-.014	.048	.766
Substance use	-.045	.049	.354
Trauma → Rejection sensitivity	.310	.052	<.001
Indirect effect	estimate = -.052; 95% CI: [-.092; -.017]		

(d) Total Trauma Analysis

Model Fit	$\chi^2 = 2.317$, $p = .314$	*RMSEA* = .019 90% CI: [.000; .100]	*CFI* = .994
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	-.005	.061	.941
Rejection sensitivity	-.155	.056	.006
Gender	-.018	.047	.709
Substance use	-.044	.049	.373
Trauma → Rejection sensitivity	.335	.048	<.001
Indirect effect	estimate = -.052; 95% CI: [-.093; -.015]		

Note: RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; CI = Confidence Interval; S.E. = Standard Error.

The results of the mediation analyses for solitary models with emotion dysregulation are available in Table 6. Emotion dysregulation significantly mediated the relationship between child maltreatment and conflict management, in analyses considering emotional abuse, emotional neglect, and total trauma. However, model fit was poor or mediocre for all models, based on all three indicators considered (χ^2 *p* value, RMSEA, CFI), even though controlling for gender and alcohol use improved the model.

This indicates that the models with emotion dysregulation as a mediator do not provide the best explanation for the relationship between childhood trauma and young adult conflict management problems and that other models may be better suited to explain this relationship.

Table 6

Results of Mediation Analyses for Solitary Models with Emotion Dysregulation

(a) Emotional Abuse Analysis

Model Fit	$\chi^2 = 6.256$, $p = .044$	*RMSEA* = .071 90% CI: [.010; .137]	*CFI* = .910
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	-.005	.059	.935
Emotion Dysregulation	-.232	.053	<.001
Gender	.021	.046	.647
Substance use	-.015	.050	.764
Trauma → Emotion Dysregulation	.236	.052	< .001
Indirect effect	estimate = -.055; 95% CI: [-.094; -.023]		

(b) Sexual Abuse Analysis

Model Fit	$\chi^2 = 9.080$, $p = .012$	*RMSEA* =.091 90% CI: [.037; .155]	*CFI* = .747
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.016	.033	.643
Emotion Dysregulation	-.234	.051	<.000
Gender	.019	.046	.673
Substance use	-.016	.050	.747
Trauma → Emotion Dysregulation	.066	.036	.085
Indirect effect	estimate = -.036; 95% CI: [-.015; .001]		

Table 6 continued

(d) Emotional Neglect Analysis

Model Fit	χ^2 = 12.499, p = .002	*RMSEA* = .111 90% CI: [.058; .173]	*CFI* = .791
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.042	.054	.434
Emotion Dysregulation	-.243	.053	<.001
Gender	.026	.047	.586
Substance use	-.015	.050	.764
Trauma → Emotion Dysregulation	.214	.047	<.001
Indirect effect	estimate = -.052; 95% CI: [-.088; -.023]		

(d) Total Trauma Analysis

Model Fit	χ^2 = 10.146, p = .006	*RMSEA* = .098 90% CI: [.044; .161]	*CFI* = .850
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.001	.059	.985
Emotion Dysregulation	-.234	.054	<.001
Gender	.020	.047	.660
Substance use	-.015	.050	.758
Trauma → Emotion Dysregulation	.249	.049	<.001
Indirect effect	estimate = -.058; 95% CI: [-.098; -.027]		

Note: RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; CI = Confidence Interval; S.E. = Standard Error.

The last set of mediation analyses included both proposed mediators (i.e., rejection sensitivity and emotion dysregulation) in the same model, thus testing both mediation pathways simultaneously for the types of trauma that yielded significant indirect effects for both individual mediators (see Table 7). Although, as in the prior analyses, the effects of gender and alcohol use were nonsignificant, the variables were

kept in the models for consistency. Given that initial data for the dual mediation models indicated model misfit, modification indices were explored to identify components that may improve the models. One such component indicated by Mplus and supported by theoretical considerations was the covariance between the two mediators. From a conceptual standpoint, both rejection sensitivity and emotion dysregulation are variables that entail a form of maladaptive coping with emotional distress. Statistically, in the current sample, these variables have a moderate significant correlation with one another ($r = .401$; $p < .001$), supporting the idea of partial construct overlap. Therefore, including the covariance between rejection sensitivity and emotion dysregulation in the dual mediation models had both conceptual and statistical value. Even with the inclusion of this relationship between mediators, the model fit was poor or mediocre, given the significant χ^2 and RMSEA and CFI values. Furthermore, although the sum of indirect effects in this model, as well as the mediation effect of emotion dysregulation were significant, the mediation effect of rejection sensitivity in the dual mediation models was nonsignificant. Together, these findings suggest that a dual mediation model including two proposed mediators with a moderate construct overlap provides an inadequate explanation for the process entailed in the relationship between a history of child maltreatment and poor conflict management. Therefore, other models may be better suited to explain this relationship.

Table 7

Results of Dual Mediation Analyses with Rejection Sensitivity and Emotion Dysregulation

(a) Emotional Abuse Analysis

Model Fit	χ^2 = 17.306, *p* =.002	*RMSEA* = .088 90% CI: [.048; .133]	*CFI* = .914
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.012	.059	.840
Rejection sensitivity	-.075	.060	.212
Emotion dysregulation	-.204	.059	.001
Gender	.012	.046	.800
Substance use	-.022	.050	.655
Trauma → Rejection sensitivity	.292	.051	<.001
Trauma → Emotion dysregulation	.236	.052	<.001
Rejection sensitivity <--> Emotion dysregulation	.365	.044	<.001
Indirect effect of rejection sensitivity	estimate = -.022; 95% CI: [-.059; .013]		
Indirect effect of emotion dysregulation	estimate = -.048; 95% CI: [-.089; -.017]		
Sum of indirect effects	estimate = -.070; 95% CI: [-.114; -.032]		

Table 7 continued

(b) Emotional Neglect Analysis

Model Fit	χ^2 = 17.894, p = .001	*RMSEA* = .090 90% CI: [.050; .135]	*CFI* = .912
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.062	.056	.263
Rejection sensitivity	-.088	.061	.150
Emotion dysregulation	-.210	.059	.001
Gender	.020	.048	.683
Substance use	-.022	.050	.655
Trauma → Rejection sensitivity	.310	.052	<.001
Trauma → Emotion dysregulation	.214	.047	<.001
Rejection sensitivity <--> Emotion dysregulation	.368	.045	<.001
Indirect effect of rejection sensitivity	estimate = -.027; 95% CI: [-.067; .011]		
Indirect effect of emotion dysregulation	estimate = -.045; 95% CI: [-.082; -.016]		
Sum of indirect effects	estimate = -.072; 95% CI: [-.118; -.032]		

Table 7 continued

(c) Total Trauma Analysis

Model Fit	χ^2 = 17.529, p = .002	*RMSEA* = .089 90% CI: [.049; .134]	*CFI* = .919
Direct effects on Conflict Management	β	*S.E.*	*p* value
Trauma	.020	.060	.736
Rejection sensitivity	-.077	.061	.205
Emotion dysregulation	-.205	.060	.001
Gender	.014	.047	.768
Substance use	-.023	.050	.651
Trauma → Rejection sensitivity	.335	.048	<.001
Trauma → Emotion dysregulation	.249	.049	<.001
Rejection sensitivity <--> Emotion dysregulation	.356	.046	<.001
Indirect effect of rejection sensitivity	estimate = -.026; 95% CI: [-.068; .015]		
Indirect effect of emotion dysregulation	estimate = -.051; 95% CI: [-.092; -.019]		
Sum of indirect effects	estimate = -.077; 95% CI: [-.125; -.035]		

Note: RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; CI = Confidence Interval; S.E. = Standard Error.

Moderated Mediation Analyses

The second set of analyses entailed the investigation of the second research question, which involved testing the potential moderating effect of trauma onset on the two mediation pathways (i.e., from trauma to the mediator and from the mediator to interpersonal conflict management). Moderation effects were tested in the solitary mediation models that yielded significant indirect effects (as discussed in the previous section). All models included controlling for gender and alcohol use; however, neither of these variables yielded significant effects. As illustrated in Tables 8 and 9, none of the

moderation effects were significant in any of the models including rejection sensitivity or emotion dysregulation as solitary mediators. Given this lack of significant effects in the solitary models, models with both mediators included were not tested.

Table 8

Moderation Effects of Trauma Onset in Solitary Mediation Models with Rejection Sensitivity

(a) Emotional Abuse Analysis

Pathway	β	*S.E.*	*p* value
Emotional abuse → Rejection sensitivity	-.088	.076	.247
Rejection sensitivity → Conflict management	.010	.072	.895

(b) Emotional Neglect Analysis

Pathway	β	*S.E.*	*p* value
Emotional abuse → Rejection sensitivity	.011	.048	.819
Rejection sensitivity → Conflict management	.021	.049	.671

(c) Total Trauma Analysis

Pathway	β	*S.E.*	*p* value
Emotional abuse → Rejection sensitivity	-.038	.046	.410
Rejection sensitivity → Conflict management	-.048	.050	.336

Note: S.E. = Standard Error

Table 9

Moderation Effects of Trauma Onset in Solitary Mediation Models with Emotion Dysregulation

(a) Emotional Abuse Analysis

Pathway	β	*S.E.*	*p* value
Emotional abuse → Emotion dysregulation	-.078	.136	.564
Emotion Dysregulation → Conflict management	.001	<.001	.242

(b) Emotional Neglect Analysis

Pathway	β	*S.E.*	*p* value
Emotional abuse → Emotion dysregulation	.033	.049	.505
Emotion Dysregulation → Conflict management	-.003	.048	.956

(c) Total Trauma Analysis

Pathway	β	*S.E.*	*p* value
Emotional abuse → Emotion dysregulation	.013	.048	.789
Emotion Dysregulation → Conflict management	.024	.048	.616

Note: S.E. = Standard Error

Chapter 4: Discussion

The current study was an investigation of the relationship between self-reported childhood trauma experiences and conflict management abilities in young adulthood through the examination of several proposed indirect effects. Specifically, the mediator roles of rejection sensitivity and emotion dysregulation were tested via solitary and dual mediation models. Additionally, childhood trauma onset was tested as a moderator of the indirect pathways of mediation. The specific findings are discussed in detail below.

Key Findings

The hypothesis that rejection sensitivity would mediate the relationship between childhood trauma and interpersonal conflict management was confirmed in all but one solitary mediation model. The mediator role of rejection sensitivity held true for all types of trauma investigated, except for sexual abuse. This finding may be explained by the cognitive attribution associated with each type of abuse and its connection with the rejection sensitivity construct.

Emotional abuse may be conceptualized as instances of negative interpersonal feedback. For instance, if a child is called names (e.g., “stupid,” “lazy,” “ugly”), he/she may interpret this response from the environment as a message that he/she is unwanted or unworthy, hence creating the optimal circumstances for rejection sensitivity to become the lens through which the individual views future social interactions. Similarly, emotional neglect represents other signs of rejection by important adults, but this time through the absence of response, which again sends the message that the individual is perhaps an inconvenience for his/her caregivers. These experiences of rejection and neglect may lead individuals to anticipate more rejection and neglect in the future. Thus,

this anticipation is likely to fuel anticipatory anxiety prior to social interactions and cues from the other person are likely to be interpreted as negative. A different mechanism may be at work when considering sexual trauma.

Owens and Chard (2001) found that adult survivors of childhood sexual abuse experienced cognitions that were primarily focused on negative self-attributions rather than on cognitive biases about the world. Thus, individuals with histories of sexual abuse may process their experiences in a way that yields cognitive biases about themselves (e.g., being unworthy or deserving of the abuse). In contrast, individuals with histories of other types of abuse may develop cognitive biases congruent with negative inferences about the environment such as interpreting other people's neutral behavior as deliberate acts of rejection. To this end, it may be that the impairment trajectory stemming from childhood sexual abuse may follow an internalizing pathway (e.g., mood concerns, anxiety, avoidance behaviors), whereas histories of other types of abuse may follow an externalizing pathway (e.g., making global accusations such as "you always do that," actively engaging in a fight or argument). This difference in the processing of the various types of abuse may explain why rejection sensitivity did not emerge as a mediator in the model involving sexual abuse.

Although the discussion from above provides a possible theoretical explanation for the differential findings when considering sexual abuse versus other types of abuse, another possibility may be related to the characteristics of this sample. Specifically, endorsements of sexual abuse histories were present in only 4.2% of participants (n = 18), with the remaining participants reporting no sexual abuse. It is therefore possible that the

positively skewed responses for the sexual abuse variable may be responsible for the lack of a mediation effect in this particular model.

The hypothesis that emotion dysregulation would mediate the relationship between childhood trauma and interpersonal conflict management was not supported by the findings of this study. As explained in previous sections, desirable results in mediation analyses models require that two conditions are met: (1) good model fit indices and (2) significant mediation effects. Because model fit for emotion dysregulation mediation analyses was poor or modest, mediation effects are not interpretable regardless of significance level. The poor model fit indicates that the construct of emotion dysregulation as assessed in this study does not fully capture the mechanism by which trauma history manifests in maladaptive conflict management.

Previous studies considering the total score on the DERS measure showed that emotion dysregulation mediated the relationship between emotional maltreatment and relationship satisfaction (Bradley & Shafer, 2012), as well as interpersonal violence perpetration and victimization (Berzensky & Yates, 2010). However, an in-depth look at these mediation relationships revealed that only specific facets of emotion dysregulation, as defined by Gratz and Roemer (2004), played a role. For example, when Bradbury and Shafer (2012) tested the mediation using all six subscales of the DERS, they found that the parallel mediation model was nonsiginficant and that indirect effects were significant only for the three DERS subscales pertaining to nonacceptance of emotional responses, impulse control difficulties, and lack of emotional awareness. Similary, in a parallel mediation model that included the DERS subscales for impulse control difficulties and lack of emotional awareness, Berzensky and Yates (2010) found significant mediation

only for the DERS impulse control variable. Given these findings, the poor model fit in models examining the mediating role of emotion dysregulation in the relationship between emotional trauma and poor conflict management from this study may be rooted in the the fact that only some facets, as opposed to the total emotion dysregulation construct may play a mediating role.

Another explanation for the poor model fit in analyses involving emotion dysregulation may be that this model omits other potential contributors. For instance, in a longitudinal study with children of ages 6-12 years, Kim and Cicchetti (2010) found that the relationship between initial emotion dysregulation and externalizing symptoms (i.e., teacher-reported aggressive and delinquent behaviors) at one year follow-up was mediated by both baseline externalizing symptoms and peer rejection (assessed via peer sociometrics in a summer camp) at one year follow-up. Therefore, it may be that additional variables need to be considered as part of the solitary mediation models involving emotion dysregulation from this study.

Given that rejection sensitivity yielded mediation effects when tested on its own, this offered the opportunity to test the aforementioned hypothesis by placing both emotion dysregulation and rejection sensitivity in the same model. Unfortunately, this approach of testing a dual mediator model also failed to yield good model fit indices. Furthermore, the indirect effect of rejection sensitivity was no longer significant when having emotion dysregulation in the same model, indicating that it is perhaps the construct overlap between the two varaibles that drives the mediation model. To this end, having both mediators in the same model does not help improve our understanding of the mechanisms responsible for the pathway between childhood trauma and poor

management of interpersonal conflict beyond what can be explained by rejection sensitivity alone.

The second research question involved testing the moderating role of trauma age of onset on the mediating pathways for the models in which significant mediation effects were found. Results showed that none of the indirect effects pertaining to moderation were significant, regardless of the mediator considered. One possible explanation for the non-significant moderation effects may pertain to the validity of the age of onset variable. Although retrospective self-report about the age of onset of abuse was successfully used in previous research, it is possible that the level of behavioral specificity from this study may have posed difficulties for accurate recall. For instance, researchers such as Dunn and colleagues (2016) asked participants how old they were when specific incidents of physical abuse (e.g., being hit with a fist, being kicked, being thrown on the floor) or sexual abuse (e.g., being forced to have sexual relations) happened. It is possible that the salience and severity of those events may make age of onset easier to recall than in situations in which participants endorse experiences such as having been insulted (emotional abuse) or not feeling loved (emotional neglect), which may have had a milder or less salient impact on the individual.

A second reason for the lack of moderation effects may be that the age of onset variable may be an oversimplified measure of the developmental context and its interaction with the experience of child maltreatment. For example, an individual exposed to childhood trauma at age 5 years and an individual exposed to childhood trauma at age 5 years, as well as at other ages (e.g., age 14 years) have the same age of trauma onset. However, the first individual is only exposed to risk inherent in

developmental processes from early childhood, whereas the second individual has additional risks which are associated with typical development in adolescence. Furthermore, within this context, the second individual would have a higher risk of developing rejection sensitivity (i.e., a cognitive mechanism) than the first individual, because of his/her advanced cognitive capacity. To this end, a more appropriate construct for the timing of maltreatment may need incorporate additional variables such as duration and reoccurrence of maltreatment, beyond the age of onset.

A third explanation for the non-significant moderation effects in analyses pertaining to emotional abuse may be related to the limited endorsements of such experiences (i.e., n = 201, 47% of total sample). The age of onset variable could only be computed for participants who reported at least a minimum level of trauma in the specific area under investigation, as an age of trauma onset would not exist for participants with no history of such trauma. This entailed the elimination of participants without a history of trauma from the set of analyses testing the role of age of onset as a moderator. As a result, the subsample that could be considered for the analyses pertaining to the second research question may have impacted the power needed to detect any moderation effects.

Limitations

Some limitations of the current study are important to note. First, the participants represented a sample of college students recruited from the general population. As such, the results of the study are only generalizable to young adults who are pursuing college education, have low to moderate histories of childhood trauma and who experience limited mental health concerns. Moreover, the fact that some participants endorsed no history of any kind of trauma posed limitations for the moderated mediation analyses,

which could only be completed with participants who reported trauma histories. Given the low number of participants (n = 18, 4.2% of total sample) who endorsed a history of sexual abuse, the results of this study do not shed light on the mechanism that ensues in the trajectory from childhood sexual trauma to interpersonal difficulties in young adulthood.

Second, the score on the minimization/denial scale of the Childhood Trauma Questionnaire indicated a possible under-endorsement of trauma and internal consistency was unacceptable for the physical abuse and physical neglect scales. Some potential reasons for these problems are social desirability bias, rushing through the completion of measures to receive course credit, as well as the adaptation made in the administration of this measure (i.e., online instead of on paper).

Third, the CTQ measure is limited to capturing the frequency of occurrence of child maltreatment. However, other variables such as maltreatment severity, chronicity and persistence across developmental periods, as well as experiences of multiple types of maltreatment are additional facets of maltreatment which may contribute to the way in which future negative outcomes unfold.

Fourth, the age of onset variable may have been too crude of a measurement of timing of maltreatment. To this end, the variable in this study does not differentiate between individuals who experienced trauma at one age versus those with trauma experiences at multiple ages.

Fifth, all data of this study was collected via self-report measures, hence relying on the perspective of only one informant. A related limitation of self-report is particularly relevant to the trauma history accounts. Specifically, participants were asked for

retrospective reports of trauma, which may have made it difficult for them to recall and report instances of childhood trauma that were mild or that occurred in their early childhood.

Future Directions

Several steps could be taken in future studies to address the limitations noted above. To better understand the relationship between childhood trauma and young adult interpersonal functioning, it may be helpful to recruit a sample of survivors of childhood trauma rather than a sample from the general population. To improve the validity of historical accounts of trauma, additional measures could be used to determine the presence of child abuse or neglect. For example, participants may complete unstructured clinical interviews or historical records could be collected (e.g., documentation from involvement with Children's Services, medical records). Objective measures may also help pinpoint the age of onset of trauma with more accuracy than retrospective self-reports. If using online survey as a primary data collection, it may be helpful to embed validity check questions (e.g., Click on answer "yellow chair" if you are an undergraduate student.) to verify participants' attention to the completion of measures. Furthermore, the models in this study may be improved by considering additional facets of child maltreatment experiences (e.g., severity, duration, persistence across developmental periods, co-occurrence of multiple types of trauma).

The mediating role of emotion dysregulation remains to be further explored by examining the differential roles among the various components of this contruct. As shown in previous studies (e.g., Bradbury & Shafer, 2012; Berzensky & Yates, 2010), it is possible that only some parts of emotion dysregulation (e.g., impulse control,

emotional awareness) may play a role in the relationship between child maltreatment and poor social functioning. Moreover, future studies should include investigations of the relationship between emotion dysregulation and other variables such as rejection sensitivity or peer rejection to comprehensively explain the pathway to negative social outcomes.

Lastly, longitudinal studies would be beneficial for the in vivo follow up of individuals through their pathway from childhood trauma to social functioning in young adulthood. This approach would help answer additional research questions such as when cognitive-affective biases such as rejection sensitivity first become apparent, as well as the extent to which individuals with childhood trauma histories rely on them to inform their behavior in social interactions. This would provide additional information about the appropriate timing for interventions and indicate the level of risk for social impairment posed by biases emerging from histories of trauma.

Conclusions

The current study contributes to the trauma and social functioning literatures by demonstrating the mediating role that rejection sensitivity has in the pathway from childhood trauma (all types considered except sexual abuse) to poor interpersonal conflict management in young adulthood. This provides a clinical direction for addressing this important risk factor (i.e., rejection sensitivity) for social impairment in survivors of child abuse and/or neglect. Specifically, mental health professionals working with youth exposed to childhood trauma may chose to focus their efforts on targeting the cognitive bias inherent in rejection sensitivity through strategies such as cognitive restructuring or

cognitive diffusion. Furthermore, they may prioritize addressing the anticipatory anxiety pertaining to rejection by others via strategies such as graded exposure.

This study does not provide conclusive evidence about the mediator role of emotion dysregulation in the pathway from childhood trauma to interpersonal difficulties. However, the fact that none of the models containing emotion dysregulation yielded good model fit indices points to a need to further explore the independent roles of various facets of emotion dysregulation, as well as additional factors that may help provide a better explanation of the model, when emotion dysregulation is present. From a clinical standpoint, a key message emerging from the results of the analyses involving emotion dysregulaton is that helping an individual better regulate his/her emotions is likely to be insufficient in addressing social impairment in the aftermath of childhood trauma.

The low reliability of the physical abuse and physical neglect subscales precluded the use of these variables in any of the intended analyses. Therefore, no conclusions could be drawn about the mediated relationships of these types of abuse with conflict management.

Lastly, the moderating role of age of trauma onset was not confirmed in this study. This may be partly due to potential accuracy problems inherent in retrospective self-report, the inherent crude measurement of timing of maltreatment, as well as due to the limited endorsements of trauma in this sample. Therefore, the research question related to the moderating role of age of onset remains to be further explored in future studies, in which all participants have a history of childhood trauma and in which collateral information about timing of maltreatment can be collected.

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Appendix A: Recruitment Flyer

Center for Intervention Research in Schools
Ohio University
Athens, OH 45701
1-877-724-4241

Childhood Experiences and Social Functioning in Young Adulthood

- √ **Are you a college student?**
- √ **Are you between 18 to 24 years of age?**
- √ **Are you interested in receiving Psychology course credit for participating in a study?**

If you answered yes to all of these questions, then this study might be for you!

We are looking for college students who are interested in participating in an online study which will include questions about childhood experiences, current behaviors, and relationships with others during college years. All responses to the survey will be anonymous.

This online study lasts 60 minutes and you will receive 1 course credit for participation.

If you are interested to know more about this study:

- please call **1-877-724-4241** mentioning "Childhood Experiences Study" OR
- e-mail ap839211@ohio.edu

You can also look for the study information at http://psychpool-ohio.sona-systems.com

Childhood Experien
1-877-724-4241
ap839211@ohio.edu

Appendix B: Psych Pool Description of the Study

Study Name	Childhood Experiences and Social Functioning in Young Adulthood
Study Type	Web study. This is an online study. Participants are not given the study URL until after they sign up.
Eligibility Requirements	Must be 18-24 years old.
Duration	60 minutes
Credits	1 credit
Abstract	This study involves completing an online survey.
Description	Participating in this study will involve completing an online survey, which will include questions about childhood experiences, current behaviors, and relationships with others during college years. All responses to the survey will be anonymous.
Participant Sign-Up Deadline	24 hours before the study is to occur

Appendix C: Consent Form

Ohio University Online Consent Form

Title of Research: Childhood Experiences and Social Functioning in Young Adulthood
Researcher: A. Raisa Ray, M.S.
Advisor: Steven W. Evans, Ph.D.

You are being asked to participate in research. For you to be able to decide whether you want to participate in this project, you should understand what the project is about, as well as the possible risks and benefits in order to make an informed decision. This process is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks. It also explains how your personal information will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to participate in this study. You may print a copy of this document to take with you.

Explanation of Study

This study is being done because the researchers are interested to learn more about the way in which experiences from childhood affect how college students engage in relationships during young adulthood.

If you agree to participate, you will be asked to complete an online study, which will include questions about childhood experiences, current behaviors, and relationships with others during college years. All responses to the survey will be anonymous.

You should not participate in this study if you are younger than 18 years of age or if you are older than 24 years of age.

Your participation in the study will last between 45 and 60 minutes.

Risks and Discomforts

The questionnaires pose no significant threat of harm to participants. However, the nature of some questions may produce emotional discomfort or distress. Some questions will pertain to possible experiences of child maltreatment. The Center for Disease Control defines child maltreatment as "any act or series of acts … by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child." You may stop participating or withdraw from the study at any time. Additionally, at the end of the study, you will be provided with information about resources that you may access to receive confidential support for any distress that you may experience by participating in this study. You may also contact the researchers, if you have any questions or concerns about any information from the study, including this consent form.

Benefits

This study is important to science/society because it may provide important information about the way in which childhood experiences impact relationships in young adulthood. This information can be used by researchers to design treatment programs for individuals who may have social difficulties which are related to their childhood experiences.

Individually, you may benefit by experiencing participation in a Psychology study and by learning the different components of such studies, including the informed consent process and debriefing.

Confidentiality and Records

All information you provide will remain confidential. Your study information will be collected anonymously, your name will not in any way be linked to the information that you share. All data will be stored safely in a secure database with access limited to only members of the research team.

For maximum confidentiality, please clear your browser history and close the browser before leaving the computer. Information on how to delete your web browsing history can be found at: *http://www.computerhope.com/issues/ch000510.htm*

Compensation

As compensation for your time/effort, you will receive 1 course credit for your participation in this study.

Contact Information

If you have any questions regarding this study, please contact the investigator A. Raisa Ray, M.S., ap839211@ohio.edu, 1 (877) 724-4241 or the advisor Steven W. Evans, Ph.D., evanss3@ohio.edu, (740) 593-2186**.**

If you have any questions regarding your rights as a research participant, please contact Dr. Chris Hayhow, Director of Research Compliance, Ohio University, (740)593-0664 or hayhow@ohio.edu.

By agreeing to participate in this study, you are agreeing that:

- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered;
- you have been informed of potential risks and they have been explained to your satisfaction;

- you understand Ohio University has no funds set aside for any injuries you might receive as a result of participating in this study;
- you are 18 years of age or older;
- your participation in this research is completely voluntary;
- you may leave the study at any time; if you decide to stop participating in the study, there will be no penalty to you and you will not lose any benefits to which you are otherwise entitled.

You may print this consent form for your records. To do this, right click on your mouse and select the Print option.

Please indicate whether you consent to participate in this study by pressing one of the two buttons below:

☐ I consent to participate in this study and I understand that some questions may be of a sensitive nature and produce emotional discomfort or distress.

☐ I do not consent to participate in this study

Version Date: ***1/25/2017***

Appendix D: Debriefing Form

Debriefing Form

Title of Research: Childhood Experiences and Social Functioning in Young Adulthood
Researcher: A. Raisa Ray, M.S.
Advisor: Steven W. Evans, Ph.D.

Thank you for your participation in this research project. This study was designed to investigate the way in which individuals with a diverse range of child maltreatment experiences show difficulties in their relationships during young adulthood. Researchers were specifically interested in understanding the role of emotions, thoughts about possible rejection from others, and the timing of child maltreatment in leading to social difficulties later in life. This study will help investigators and psychologists learn more about the way in which individuals who experience maltreatment in childhood develop difficulties in their relationships with others during their college years. This can provide information about how to best design treatments that can address such difficulties.

As a reminder, all of your survey responses will remain anonymous. Please clear your browser history after viewing this form. Information on how to delete your web browsing history can be found at: http://www.computerhope.com/issues/ch000510.htm

If you are concerned about any of the topics covered in this study, or if you would like more information or reading material on this topic, please contact one of the resources below:

Ohio University Counseling and Psychological Services:	(740) 593-1616
Ohio University Psychology and Social Work Clinic	(740) 593-0902
My Sister's Place Battered Women's Shelter	(740) 593-3402
Sexual Assault Survivor Advocacy Program	(740) 589-5562
OU Counselor-in-Residence	(740) 593-0769

It is not unusual for people to have questions after participating in a study such as the one that you just completed. If you have any questions about the study or concerns about any issues raised by your participation, and would like to contact the researchers directly, the following information contains their contact information:

Principal Investigator: A. Raisa Ray, M.S., *ap839211@ohio.edu*, 1 (877) 724-4241
Faculty Advisor: Steven W. Evans, Ph.D., *evanss3@ohio.edu*, (740) 593-2186

If you would like to receive more specific information about the study, please contact the researchers at the emails/phone numbers listed above. The researchers will gladly schedule a time to meet with you to provide you with more information.

You may print this debriefing form for your records. To do this, right click on your mouse and select the Print option.

Version Date: ***1/25/2017***

Appendix E: Demographics Questionnaire

Please answer the following questions as they apply to you:

1. What is your date of birth? _____

2. With what gender do you identify?

□ Male
□ Female
□ Transgender
□ Other, please specify: _____

3. With what ethnicity do you identify?

□ Hispanic or Latino
□ Not Hispanic or Latino

4. With what race do you identify?

□ Black or African American
□ Asian
□ White or Caucasian
□ Native Hawaiian or Pacific Islander
□ Native American or Alaskan Native
□ Other, please specify_____

5. With what sexual orientation do you identify?

□ Heterosexual (a.k.a. straight)
□ Homosexual/Lesbian
□ Bisexual
□ Other, please specify: _____

6. What is your current relationship status?

□ Single
□ In a relationship, but not married
□ Married or in a domestic partnership
□ Divorced
□ Other, please specify: _____

7. If you are in a relationship/married:

(a) For how long have you been in this relationship: _____(specify months/years)

(b) What is the gender of your romantic partner?

□ Male
□ Female
□ Transgender
□ Other, please specify: _____

8. Including any current relationship, how many romantic relationships have you had in your entire life? _____

9. What is your current student status?

□ Freshman
□ Sophomore
□ Junior
□ Senior

10. What is your current GPA? _____

11. What is your mother's education level (highest degree completed)?

□ Less than 9th grade
□ Partial high school
□ High school diploma
□ Partial college (no degree)
□ Associate degree
□ Bachelor's degree
□ Master's/Doctoral degree

12. What is your father's education level (highest degree completed)?

□ Less than 9th grade
□ Partial high school
□ High school diploma
□ Partial college (no degree)
□ Associate degree
□ Bachelor's degree
□ Master's/Doctoral degree

13. What was your family's household yearly income during the last fiscal year?

□ Up to $10,000
□ $10,001 - $14,999
□ $15,000 - $24,999
□ $25,000 - $49,999
□ $50,000 - $74,999
□ $75,000 - $99,999
□ $100,000 - $149,999
□ $150,000 - $199,999
□ $200,000 or more
□ I don't know

Appendix F: Inventory of Depression and Anxiety Symptoms

IDAS

Below is a list of feelings, sensations, problems, and experiences that people sometimes have. Read each item to determine how well it describes your recent feelings and experiences. Then select the option that best describes **how much** you have felt or experienced things this way **during the past two weeks, including today**. Use this scale when answering:

1	2	3	4	5
Not at all	**A little bit**	**Moderately**	**Quite a bit**	**Extremely**

_____ 1. I was proud of myself
_____ 2. I felt exhausted
_____ 3. I felt depressed
_____ 4. I felt inadequate
_____ 5. I slept less than usual
_____ 6. I felt fidgety, restless
_____ 7. I had thoughts of suicide
_____ 8. I slept more than usual
_____ 9. I hurt myself purposely
_____ 10. I slept very poorly
_____ 11. I blamed myself for things
_____ 12. I had trouble falling asleep
_____ 13. I felt discouraged about things
_____ 14. I thought about my own death
_____ 15. I thought about hurting myself
_____ 16. I did not have much of an appetite
_____ 17. I felt like eating less than usual
_____ 18. I thought a lot about food
_____ 19. I did not feel much like eating
_____ 20. I ate when I wasn't hungry
_____ 21. I felt optimistic
_____ 22. I ate more than usual
_____ 23. I felt that I had accomplished a lot
_____ 24. I looked forward to things with enjoyment
_____ 25. I was furious
_____ 26. I felt hopeful about the future
_____ 27. I felt that I had a lot to look forward to
_____ 28. I felt like breaking things
_____ 29. I had disturbing thoughts of something bad that happened to me
_____ 30. Little things made me mad
_____ 31. I felt enraged

_____ 32. I had nightmares that reminded me of something bad that happened
_____ 33. I lost my temper and yelled at people
_____ 34. I felt like I had a lot of interesting things to do
_____ 35. I felt like I had a lot of energy
_____ 36. I had memories of something scary that happened
_____ 37. I felt self-conscious knowing that others were watching me
_____ 38. I felt a pain in my chest
_____ 39. I was worried about embarrassing myself socially
_____ 40. I felt dizzy or light headed
_____ 41. I cut or burned myself on purpose
_____ 42. I had little interest in my usual hobbies or activities
_____ 43. I thought that the world would be better off without me
_____ 44. I felt much worse in the morning than later in the day
_____ 45. I felt drowsy, sleepy
_____ 46. I woke up early and could not get back to sleep
_____ 47. I had trouble concentrating
_____ 48. I had trouble making up my mind
_____ 49. I talked more slowly than usual
_____ 50. I had trouble waking up in the morning
_____ 51. I found myself worrying all the time
_____ 52. I woke up frequently during the night
_____ 53. It took a lot of effort for me to get going
_____ 54. I woke up much earlier than usual
_____ 55. I was trembling or shaking
_____ 56. I became anxious in a crowded public setting
_____ 57. I felt faint
_____ 58. I found it difficult to make eye contact with people
_____ 59. My heart was racing or pounding
_____ 60. I got upset thinking about something bad that happened
_____ 61. I found it difficult to talk with people I did not know well
_____ 62. I had a very dry mouth
_____ 63. I was short of breath
_____ 64. I felt like I was choking

Appendix G: The Alcohol Use Disorders Identification Test

The Alcohol Use Disorders Identification Test: Self-Report Version

PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

Appendix H: Childhood Trauma Questionnaire

The Childhood Trauma Questionnaire – A Retrospective Self-Report is an NCH Pearson, Inc. copyrighted measure. Permission from the publisher was obtained to adapt the Childhood Trauma Questionnaire (CTQ) for computer administration. Information about the CTQ materials is available at: https://www.pearsonclinical.com/psychology/products/100000446/childhood-trauma-questionnaire-a-retrospective-self-report-ctq.html

Appendix I: Rejection Sensitivity Questionnaire

Each of the items below describes things college students sometimes ask of other people. Please imagine that you are in each situation. You will be asked to answer the following questions:

1) How concerned or anxious would you be about how the other person would respond?

2) How do you think the other person would be likely to respond?

1. You ask someone in class if you can borrow his/her notes.

How concerned or anxious would you be over whether or not the person would want to lend you his/her notes?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that the person would willingly give me his/her notes.	very unlikely 1 2 3 4 5 6 very likely

2. You ask your boyfriend/girlfriend to move in with you.

How concerned or anxious would you be over whether or not the person would want to move in with you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would want to move in with me.	very unlikely 1 2 3 4 5 6 very likely

3. You ask your parents for help in deciding what programs to apply to.

How concerned or anxious would you be over whether or not your parents would want to help you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that they would want to help me.	very unlikely 1 2 3 4 5 6 very likely

4. You ask someone you don't know well out on a date.

How concerned or anxious would you be over whether or not the person would want to go out with you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that the person would want to go out with me.	very unlikely 1 2 3 4 5 6 very likely

5. Your boyfriend/girlfriend has plans to go out with friends tonight, but you really want to spend the evening with him/her, and you tell him/her so.

How concerned or anxious would you be over whether or not your boyfriend/girlfriend would decide to stay in?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that the person would willingly choose to stay in.	very unlikely 1 2 3 4 5 6 very likely

6. You ask your parents for extra money to cover living expenses.

How concerned or anxious would you be over whether or not your parents would help you out?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that my parents would not mind helping me out.	very unlikely 1 2 3 4 5 6 very likely

7. After class, you tell your professor that you have been having some trouble with a section of the course and ask if he/she can give you some extra help.

How concerned or anxious would you be over whether or not your professor would want to help you out?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that my professor would want to help me out.	very unlikely 1 2 3 4 5 6 very likely

8. You approach a close friend to talk after doing or saying something that seriously upset him/her.

How concerned or anxious would you be over whether or not your friend would want to talk with you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would want to talk with me to try to work things out.	very unlikely 1 2 3 4 5 6 very likely

9. You ask someone in one of your classes to coffee.

How concerned or anxious would you be over whether or not the person would want to go?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that the person would want to go with me.	very unlikely 1 2 3 4 5 6 very likely

10. After graduation, you can't find a job and ask your parents if you can live at home for a while.

How concerned or anxious would you be over whether or not your parents would want you to come home?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect I would be welcome at home.	very unlikely 1 2 3 4 5 6 very likely

11. You ask your friend to go on a vacation with you over Spring Break.

How concerned or anxious would you be over whether or not your friend would want to go with you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would want to go with me.	very unlikely 1 2 3 4 5 6 very likely

12. You call your boyfriend/girlfriend after a bitter argument and tell him/her you want to see him/her.

How concerned or anxious would you be over whether or not your boyfriend/girlfriend would want to see you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would want to see me.	very unlikely 1 2 3 4 5 6 very likely

13. You ask a friend if you can borrow something of his/hers.

How concerned or anxious would you be over whether or not your friend would want to loan it to you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would willingly loan me it.	very unlikely 1 2 3 4 5 6 very likely

14. You ask your parents to come to an occasion important to you.

How concerned or anxious would you be over whether or not your parents would want to come?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that my parents would want to come.	very unlikely 1 2 3 4 5 6 very likely

15. You ask a friend to do you a big favor.

How concerned or anxious would you be over whether or not your friend would do this favor?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would willingly do this favor for me.	very unlikely 1 2 3 4 5 6 very likely

16. You ask your boyfriend/girlfriend if he/she really loves you.

How concerned or anxious would you be over whether or not your boyfriend/girlfriend would say yes?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would answer yes sincerely.	very unlikely 1 2 3 4 5 6 very likely

17. You go to a party and notice someone on the other side of the room and then you ask them to dance.

How concerned or anxious would you be over whether or not the person would want to dance with you?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would want to dance with me.	very unlikely 1 2 3 4 5 6 very likely

18. You ask your boyfriend/girlfriend to come home to meet your parents.

How concerned or anxious would you be over whether or not your boyfriend/girlfriend would want to meet your parents?	very unconcerned 1 2 3 4 5 6 very concerned
I would expect that he/she would want to meet my parents.	very unlikely 1 2 3 4 5 6 very likely

Appendix J: Difficulties in Emotion Regulation Scale

DERS

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item:

1	2	3	4	5
almost never (0-10%)	sometimes (11-35%)	about half the time (36-65%)	most of the time (66-90%)	almost always (91-100%)

_____ 1) I am clear about my feelings.

_____ 2) I pay attention to how I feel.

_____ 3) I experience my emotions as overwhelming and out of control.

_____ 4) I have no idea how I am feeling.

_____ 5) I have difficulty making sense out of my feelings.

_____ 6) I am attentive to my feelings.

_____ 7) I know exactly how I am feeling.

_____ 8) I care about what I am feeling.

_____ 9) I am confused about how I feel.

_____ 10) When I'm upset, I acknowledge my emotions.

_____ 11) When I'm upset, I become angry with myself for feeling that way.

_____ 12) When I'm upset, I become embarrassed for feeling that way.

_____ 13) When I'm upset, I have difficulty getting work done.

_____ 14) When I'm upset, I become out of control.

_____ 15) When I'm upset, I believe that I will remain that way for a long time.

_____ 16) When I'm upset, I believe that I'll end up feeling very depressed.

_____ 17) When I'm upset, I believe that my feelings are valid and important.

_____ 18) When I'm upset, I have difficulty focusing on other things.

_____ 19) When I'm upset, I feel out of control.

_____ 20) When I'm upset, I can still get things done.

_____ 21) When I'm upset, I feel ashamed with myself for feeling that way.

1	2	3	4	5
almost never (0-10%)	sometimes (11-35%)	about half the time (36-65%)	most of the time (66-90%)	almost always (91-100%)

_____ 22) When I'm upset, I know that I can find a way to eventually feel better.

_____ 23) When I'm upset, I feel like I am weak.

_____ 24) When I'm upset, I feel like I can remain in control of my behaviors.

_____ 25) When I'm upset, I feel guilty for feeling that way.

_____ 26) When I'm upset, I have difficulty concentrating.

_____ 27) When I'm upset, I have difficulty controlling my behaviors.

_____ 28) When I'm upset, I believe that there is nothing I can do to make myself feel better.

_____ 29) When I'm upset, I become irritated with myself for feeling that way.

_____ 30) When I'm upset, I start to feel very bad about myself.

_____ 31) When I'm upset, I believe that wallowing in it is all I can do.

_____ 32) When I'm upset, I lose control over my behaviors.

_____ 33) When I'm upset, I have difficulty thinking about anything else.

_____ 34) When I'm upset, I take time to figure out what I'm really feeling.

_____ 35) When I'm upset, it takes me a long time to feel better.

_____ 36) When I'm upset, my emotions feel overwhelming.

Appendix K: Interpersonal Competence Questionnaire

The items from the Interpersonal Competence Questionnaire are available in the journal article noted below. For the purpose of this study, only the conflict management subscale was used.

Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology*, *55*(6), 991.

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