TRAUMA SYMPTOMS IN CHILDREN EXPOSED TO INTIMATE PARTNER VIOLENCE: THE ROLE OF APPRAISALS

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A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

Psychology- Master of Arts

ABSTRACT

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Cognitive contextual framework (Grych & Fincham, 1990) and emotional security theory (Cummings & Davies, 1994) posit that children's appraisals about interparental conflict influence child adjustment outcomes. Though children exposed to intimate partner violence (IPV) involving their parents are at increased risk for developing trauma symptoms as well as dysregulated hypothalamic-pituitary-adrenal (HPA) axis functioning, the cognitive precursors to these outcomes have rarely been studied. The present study sought to investigate children's threat and self-blame appraisals about interparental conflict as potential mechanisms contributing to these adverse outcomes. The influence of child and family level contextual factors (gender; parent-child relationships) were also examined. The sample consisted of 119 10-year-olds and their mothers who were recruited from the community as a part of a larger longitudinal study of IPV. Though children's reports of IPV exposure in the past year were not associated with symptoms of posttraumatic stress disorder (PTSD), greater exposure to parental IPV was associated with attenuated cortisol output during the Trier Social Stress Test for children. Greater IPV exposure was also associated with increased threat appraisals, as well as worse parent-child relationship quality. Indirect effects of IPV on PTSD symptoms and HPA axis responsivity through children's appraisals were not significant. These results suggest that witnessing parental IPV is threatening for children and can have negative consequences for parent-child relationships. In addition, this study highlights the complexity of factors that influence the development of trauma symptoms following exposure to parental IPV.

ACKNOWLEDGEMENTS

I would like to thank my advisor and thesis chair, Anne Bogat, whose mentorship and support over the past two years have helped me gain confidence as a researcher and scholar. I would also like to acknowledge the other members of my thesis committee, Alytia Levendosky and Amy Nuttall for their valuable feedback throughout the thesis process. In addition, I would like to express my sincerest gratitude to Cecilia Martinez-Torteya for allowing me to use her dissertation data for this project. Thanks to my lab mates for their support and encouragement, and to my cohort for always making me laugh. Thanks to my parents for believing in me, and lastly to Christopher for keeping me happy and well-fed. This project is dedicated to the participating families, without whom this research would not have been possible.

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Introduction

Exposure to intimate partner violence (IPV) involving caregivers is a prevalent and often chronic form of child maltreatment. According to the National Survey of Children's Exposure to Violence, children ages 10-13 are at peak risk for exposure to physical violence between caregivers, with 7.9 percent reporting exposure within the past year (Hamby, Finkelhor, Turner & Ormrod, 2011). Exposure to parental IPV in childhood confers increased risk for the development of a variety of adverse behavioral, cognitive, and socioemotional outcomes, including post-traumatic stress symptoms (Carlson, 2000). However, the mechanisms through which some children develop trauma symptoms in the aftermath of parental IPV exposure are still poorly understood. Several prominent theories of child adjustment in the context of normative levels of interparental conflict point to children's appraisals about the events as being important in determining both children's immediate behavioral and psychobiological responses, as well as distal adjustment and mental health outcomes (Grych & Fincham, 1990; Cummings & Davies, 1994). Appraisals about traumatic events are also thought to play a role in the development and maintenance of PTSD symptoms (Ehlers & Clark, 2000). The present study investigated whether school-aged children's threat and self-blame appraisals about parental IPV mediate the development of behavioral and physiological trauma symptoms. In addition, the present study examined the influence of contextual factors, including child gender and parentchild relationship quality, on the development of trauma symptoms.

Childhood exposure to parental IPV and trauma symptoms

Observed rates of posttraumatic stress disorder (PTSD) in IPV-exposed children vary widely between studies (3% to 60%) due in part to differences in sample characteristics (shelter vs. community samples) and the measures used to assess symptoms (Graham-Bermann, DeVoe,

Mattis, Lynch, & Thomas, 2006). What is clear is that some children go on to develop PTSD in response to parental IPV exposure (Lehmann, 1997; Kilpatrick & Williams, 1997; Graham-Bermann & Levendosky, 1998; Levendosky, Huth-Bocks, Semel, & Shapiro, 2002), and even when the threshold for a PTSD diagnosis is not met, clinically significant trauma symptoms including intrusive memories of the events, avoidance of trauma reminders, and hyperarousal are often present (Graham-Bermann & Levendosky, 1998; Levendosky, 1998; Levendosky, Bogat, & Martinez-Torteya, 2013). In one community sample of 218 children ages 5-13 exposed to parental IPV, 25% met full DSM-IV diagnostic criteria for PTSD based on mother's reports; however, 76% met criteria for the re-experiencing symptom cluster, 35% for traumatic avoidance, and 31% for heightened physiological arousal (Graham-Bermann et al., 2006). Indeed, though based on just six studies, a 2008 meta-analysis by Evans, Davies, & DiLillo obtained a large effect size for the relationship between IPV exposure and child trauma symptoms.

Trauma symptoms associated with IPV exposure can have far-reaching consequences for children, as they have the potential to interfere with emotional, cognitive, behavioral, and psychobiological development and functioning. For example, Graham-Berman and Levendosky (1998) found that trauma symptoms in children exposed to parental IPV were associated with both internalizing and externalizing problems, leading the authors to suggest that posttraumatic reactions in children can contribute to a variety of dysregulated behaviors. Hyperarousal symptoms in particular have been linked to attention and thought problems and poor school performance (Graham-Bermann & Levendosky, 1998; Rossman & Ho, 2000) as well as to poor social functioning and aggression (Rossman & Ho, 2000; Baldry, 2003, Bauer et al., 2006). In addition, posttraumatic stress symptoms are predictive of children's physical health problems over and above the effects of violence exposure and other demographic risk factors (Graham-

Bermann & Seng, 2005), which may reflect alterations in biological stress systems as a result of trauma exposure.

Altered stress physiology, including dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, has been identified as an important consequence of childhood trauma (for review see De Bellis & Zisk, 2014). In healthy individuals, activation of the HPA-axis resulting in cortisol secretion in response to environmental threat serves to mobilize energy to meet the demands of the challenge and modulates the learning and memory consolidation of emotionally salient information (Frodl & O'Keane, 2013; Cahill & McGaugh, 1998). Findings regarding the nature of the relationship between HPA-axis functioning and childhood trauma exposure have been mixed. On the one hand, elevated levels of diurnal cortisol and increased cortisol reactivity to a laboratory stressor have been observed in children exposed to parental IPV (Carrion et al., 2002; Saltzman, Holden, & Holahan, 2005) and youth who have witnessed family or community violence in the past year (Suglia, Staudenmayer, Cohen & Wright, 2010; Peckins et al., 2012). These results are consistent with the sensitization hypothesis which states that repeated exposure to environmental adversity primes the physiological stress response system, a process thought to parallel increases in children's emotional and behavioral reactivity with repeated exposure to parental conflict (Davies, Sturge-Apple, Cicchetti, & Cummings, 2007; 2008). Paradoxically, on the other hand, researchers have also found evidence of attenuated physiological stress reactivity in children exposed to interparental conflict and IPV (Davies et al., 2007; Sturge-Apple, Davies, Cicchetti, & Manning, 2012). One possible explanation is that this apparent blunting of cortisol secretion represents the eventual down-regulation of a chronically aroused system, such that over time individuals dealing with chronic stressors in their immediate environments will transition from a highly reactive to an inhibited pattern of responding due to enhanced negative feedback

inhibition of the HPA-axis (Gunnar & Vasquez, 2001). Hyperarousal of the HPA-axis or changes in children's ability to mount an appropriate HPA-axis response to stress may underpin physical and psychological health deficits in children exposed to family violence.

Children's appraisals about parental conflict

Witnessing disagreement between caregivers (or between a caregiver and their partner) is a normative experience for children, and, when handled constructively, can be beneficial to children's socioemotional development by modeling important skills such as collaborative problem solving, effective communication, and emotional expression (McCoy, George, Cummings, & Davies, 2013). However, when adults engage in destructive conflict tactics, including withdrawal, verbal hostility, and physical aggression, children often have negative adjustment outcomes (Cummings, Davies, & Simpson, 1994; Katz & Low, 2004). If IPV can be thought of as falling on the extreme destructive end of the relationship conflict spectrum, models of child adjustment in the context of interparental conflict may provide insights that extend to children exposed to IPV. Two prominent models, Grych and Fincham's cognitive contextual framework (1990) and Davies and Cummings' emotional security theory (1994), highlight the importance of children's appraisals about parental conflict in determining its impact on child adjustment outcomes.

According to the cognitive-contextual framework, the effect of interparental conflict on child adjustment is mediated by the child's understanding of the conflict, which in turn is influenced by a number of contextual factors including the child's memories of past conflict, perceived emotional climate of the household, quality of parent-child relationships, as well as child characteristics such as developmental level, gender, temperament, and mood. The model suggests that upon detecting signs of interparental conflict, a child will use contextual

information to determine how much threat the conflict poses. If the events are deemed sufficiently threatening and arousing as to merit continued attention, he or she will attempt to further understand the conflict by making causal inferences and attributions of blame. These interpretations, the child's affective state, and the relative success of past strategies, together influence the choice of coping behaviors.

The authors hypothesize that children who perceive interparental conflict as highly threatening, blame themselves for their parent's fighting, and expect that they will be unable to cope effectively are likely to experience persistent feelings of anxiety, shame, and helplessness, which contribute to worse psychological adjustment outcomes. Indeed, across studies, threat appraisals consistently mediate the association between parental conflict and children's internalizing problems (Dadds, Atkinson, Turner, Blums, & Lendich, 1999; Gerard, Buehler, Franck & Anderson, 2005; Grych, Fincham, Jouriles, & McDonald's, 2000; Kerig, 1998; Grych et al., 2000b). Self-blaming attributions about parental conflict have variously been associated with internalizing (Kerig, 1998; Dadds, et al., 1999; Grych et al., 2000b; McDonald & Grych, 2006; Grych, Harold, & Miles, 2003; Skopp, McDonald, Manke, & Jouriles, 2005) as well as externalizing problems (Grych et al., 2003; Gerard et al., 2005; Skopp et al., 2005).

Investigations of child gender as an individual-level contextual factor affecting the relationship between interparental conflict, appraisals, and adjustment outcomes have yielded mixed results. Self-blame has at times been conceptualized as a particularly salient pathway linking interparental conflict to adverse outcomes for girls (Cummings, Davies, & Simpson, 1994; Kerig, 1998), though inconsistencies in findings have led to the alternative hypothesis that self-blame might simply lead to different behavioral outcomes for males versus females as a byproduct of socialization that differentially emphasizes communal goals for girls and agentic

goals for boys (Davies & Lindsay, 2001; Grych et al., 2003). According to this view, girls who blame themselves for adversely affecting family relationships might be more likely to display sadness and internalizing behavior, while for boys, the perception of being responsible may be more likely to result in attempts to intervene directly or otherwise disrupt or distract from the conflict in an externalizing manner. Support for this hypothesis comes from findings that indicate that the strength of the association between interparental conflict exposure and internalizing symptoms for adolescent girls as compared to boys is partially accounted for by girls' tendency to experience higher levels of communion and interpersonal connectedness (Davies & Lindsay, 2004).

Similar to the cognitive contextual framework, emotional security theory takes into account children's appraisals of parental conflict; however, it frames these evaluations and subsequent coping and regulatory behaviors as serving the goal of preserving the child's emotional security within the family system. Over time, children exposed to destructive interparental conflict and associated perceptions of threatened family integrity make adaptations which, in the short term, function to facilitate the attainment of safety, but can become maladaptive in the long term (Davies, Winter, & Cicchetti, 2006). For example, the exposed child might become hypervigilant and highly reactive to cues of conflict and aggression in the household. This expectation of negative outcomes may generalize to other social situations and impede the attainment of age-appropriate social and academic skills (Ornduff, 2000; Bascoe, Davies, Sturge-Apple, & Cummings, 2009).

Importantly, emotional security theory puts forth testable hypotheses about how family characteristics interact with child outcomes. It suggests that security within the interparental relationship and within the parent-child relationships are interrelated but distinct, and therefore

insecurity in the interparental system could be compensated for by positive parenting practices and secure parent-child attachment (Davies et al., 2006; Davies et al., 2002). However, if there is dysfunction in the parent-child relationship, in addition to high levels of destructive interparental conflict, the child will be vulnerable to psychological maladjustment (Loucks & Shaffer, 2014; Owen, Thompson & Nadine, 2006; Gustafsson, Cox, & Blair, 2012; DeBoard-Lucas, Fosco, Raynor, & Grych, 2010). The spillover hypothesis (Erel & Burman, 1995) suggests that destructive conflict in the interparental relationship will have a negative impact on parent-child relationships as a result of parents being less emotionally available, less sensitive to children's needs, and less effective in their parenting practices (Emde & Easterbrook, 1985; Coln Jordan & Mercer, 2013). This spillover effect may be particularly harmful for children exposed to IPV, as evidenced by the high rates of co-occurrence among IPV exposure, harsh parenting practices, and child maltreatment (Grasso et al., 2016). In addition, mothers dealing with partner violence may also be more likely to be depressed or to have trauma symptoms themselves, which can negatively impact their ability to form secure attachments and sensitively parent their child (Coyl, Roggman, & Newland, 2002; Gustafsson & Cox, 2012). If a child is not able to count on their parent to be a secure base for them emotionally, either because the parent is emotionally unavailable or actively menacing, the child may feel even more threatened and less able to regulate when witnessing violence in the home.

IPV, appraisals, and trauma

Appraisals of threat and self-blame are believed to mediate the relationship between interparental conflict exposure and negative child outcomes. Though originally proposed as models of child adjustment to non-violent parental conflict, both the cognitive-contextual framework and emotional security theory have been applied to the study of families experiencing

IPV (Fosco, DeBoard, Grych, 2007; Davies et al., 2006). In these families, school-aged children's appraisals of threat, self-blame, and emotional insecurity contribute significant variance to child adjustment outcomes (Hungerford, Wait, Fritz, Clements, 2011). In one study of families characterized by very serious IPV (threatened or actual knife or gun violence in the past year), 8-12 year old's' appraisals of threat, self-blame, and fear of abandonment remained significantly positively associated with their self-reported internalizing symptoms, even after controlling for violence frequency (Jouriles, Spiller, Stephens, McDonald, & Swank, 2000). Likewise, in a sample of 8-14-year-olds residing in domestic violence shelters, appraisals of perceived threat and self-blame better distinguished patterns of child adjustment than did characteristics of the conflict, including conflict frequency, intensity, and resolution (Grych, Jouriles, Swank, McDonald, & Norwood, 2000). Furthermore, the literature suggests that threat and self-blame appraisals function similarly for IPV-exposed children and non-exposed children in mediating the association between conflict exposure and internalizing problems (Grych, et al., 2000a; Grych et al., 2000b; Jouriles et al., 2000; Kerig, 1998). For example, Grych and colleagues found that among a sample of 10-14-year-olds from the community and domestic violence shelters, threat appraisals mediated the association between interparental conflict and internalizing problems in boys and girls from both samples, while self-blame mediated the association between conflict and internalizing in boys from both samples and girls from the shelter sample (Grych et al., 2000a).

Despite the theoretical relevance of assessing trauma symptoms in these high-risk IPVexposed samples (Margolin & Vickerman, 2007), studies testing the applicability of appraisalmediated models with IPV-exposed children have predominantly operationalized adjustment in terms of broad bands of behavior, such as internalizing and externalizing problems. Because

IPV-exposed children with trauma symptoms show both increased internalizing and externalizing problems (Graham-Bermann & Levendosky, 1998), measuring only broad bands of behavior makes it difficult to know whether cognitive appraisals contribute to the development of post-traumatic stress symptoms specifically, and whether the behavioral problems measured may actually be explained by traumatic distress. The only study to date to test the effect of IPV on trauma symptoms through threat and self-blame appraisals failed to find support for appraisals as mediators (Kilpatrick & Williams, 1998); however, due to the small sample size and use of single items to assess appraisals, replication is warranted.

Self-blame has been associated with worse psychological outcomes, including PTSD in individuals exposed to IPV and other forms of child maltreatment, (Lehmann, 1997; Filipas & Ullman, 2006; Swannell et al., 2012). Likewise, child witnesses of IPV who perceive the events as threatening to their personal safety and believe they have a high degree of control over the incidents are more likely to develop clinically significant trauma symptoms (Spilsbury et al., 2007). For children exposed to IPV, perceived threat may be a particularly salient pathway leading to the development of trauma symptoms, as the events are likely to pose real danger to the physical safety of children and their caregivers and exceed children's abilities to cope effectively. As discussed previously, if interparental violence is accompanied by an overwhelming sense of threat and correspondingly high levels of affective and physiological arousal, repeated exposure may affect neurobiological regulatory systems such as the HPA axis and sympathetic nervous system, leading to heightened or blunted reactivity to subsequent stressors (De Bellis, 2001).

One study has examined the influence of children's appraisals of perceived threat in response to parent's arguments on patterns of HPA axis reactivity among community first and

second-graders (Koss et al., 2013). Both the sensitization and attenuation hypotheses were tested using a person-centered approach and, consistent with sensitization, children's threat appraisals and greater frequency of child-related conflict were associated with a rising pattern of cortisol secretion in response to a staged marital dispute in which cortisol levels did not diminish after the conflict's staged resolution. This profile was also associated with greater internalizing and externalizing behaviors. These findings suggest that children's appraisals of threat and selfblame in the context of parental conflict may lead to heightened HPA axis reactivity and adjustment problems. However, an attenuated profile of cortisol reactivity was also observed and was associated with parent's use of destructive conflict tactics. One interpretation of this finding is that downregulation of the HPA axis may in fact be a protective adaptation for children exposed to destructive conflict between parents, one that might be relevant for children exposed to parental IPV.

Drawing on evidence supporting the applicability of the cognitive contextual framework, the emotional security theory, and the spillover hypothesis in IPV-exposed samples, a conceptual model delineating the mechanisms through which parental IPV exposure results in behavioral and physiological trauma symptoms will be tested. As in the cognitive contextual framework, children's appraisals about parental conflict are thought to play an important role mediating the onset of symptoms. Appraisals of conflict as threatening will be highly salient in the context of IPV, as the potential for harm to caregiver (and to the child by extension) is inherent in violent interactions. Children rely on parents to help them regulate in threatening situations, and therefore the perception of danger and helplessness may be all the more heightened due to the unavailability of parental protection. Threat, in turn, informs the development of hypervigilance, increased physiological reactivity, and avoidance symptoms. Likewise, if children default to

egocentric modes of thinking and blame themselves for parents' fights and their consequences, this could lead to persistent feelings of shame and guilt, and therefore contribute to the negative affect and problems with self-concept associated with complex trauma and PTSD. This pathway is hypothesized to be stronger for female children, whose tendency to experience more communion and interpersonal connectedness on average, relative to male counterparts, is thought to increase their vulnerability to the effects of destructive family conflict, including IPV.

The current study

The present study used data collected as part of a larger longitudinal study for which information about IPV experiences was collected from mothers annually when children were ages 1-7. Families were re-contacted and invited to participate in an assessment when the children were 10 years old, at which time children reported on their experiences of parental IPV (operationalized as male partner's physical or psychological aggression towards mother) in the past year as well as their perceptions about parents' conflict and the quality of their relationships with their parents. They also participated in a laboratory stress task and provided challenged salivary cortisol samples. At this visit mothers provided information about their children's PTSD symptoms. This data was used to test the following research questions:

- 1. Does past year IPV exposure positively predict children's PTSD symptoms and challenged cortisol production at age 10?
- 2. Is there an indirect effect of IPV exposure on behavioral and physiological trauma symptoms through children's appraisals of threat and self-blame?
- 3. Is there an indirect effect of IPV exposure on children's threat appraisals through parent-child relationship quality?

4. Is there is a conditional indirect effect of self-blame on trauma symptoms via child gender such that the effect is stronger for girls than for boys?

Method

Participants

Participants were 119 mother-child dyads, representing a subsample of the 206 women who were initially recruited during the third trimester pregnancy to participate in a longitudinal study of IPV. For the broader study, women were recruited from Mid-Michigan communities via flyers posted in public spaces, as well as at social agencies and women's health and OB/Gyn clinics. Interested women who called in were deemed eligible if they would be in their third trimester of pregnancy for the first interview, 18-40 years of age, involved with a male romantic partner for at least 6 weeks during pregnancy, and English speaking. Women were recruited such that half of the sample endorsed exposure to IPV during pregnancy based on the physical violence scale from the Conflict Tactics Scale (Straus, 1979). After the initial intake interview during pregnancy, women were contacted annually around the time of their child's first through seventh birthdays and invited to complete a variety of questionnaires, interviews, and assessments related to IPV experiences and parent and child adjustment and functioning. Measures taken to reduce attrition included contacting participants every three months for the first seven years of the study to obtain updated contact information and asking women to provide the information of up to three friends or relatives who could be contacted in the event that they could not be reached. When children were age 10, attempts to re-contact the original participants were made using the most recent contact information available. Those who were reached were invited along with their child to participate in another in-person study evaluation that took place at the project offices.

Age 10 assessments were completed by 119 mother-child dyads. Children were 65 boys and 54 girls, mean age 10 years and 6 months (SD = 3 months). Race was 50% White, 23% African American, 23% multiracial, 2% Latino, 1% Native American, and 1% Asian American. Mean monthly family income was \$3,196 (SD = \$2,805). Of the mothers, 11% did not complete high school, 28% completed high school, 42% had some college or trade school, 11% had a bachelor's degree, and 6% had some graduate school or graduate degree. Dyads who were successfully re-contacted and included in the present study did not differ from those who were part of the original longitudinal study but did not participate in the age 10 assessment in regard to ethnicity, maternal education, maternal marital status, maternal age, child gender, maternal depression, anxiety, or PTSD during pregnancy, and maternal lifetime IPV exposure. However, women not included in the current study had significantly lower monthly family income at initial intake, F (1, 203) = 4.12, p = .04 (included M = \$2,002, excluded M = \$1,573).

Measures

Age 10 IPV Exposure. *Revised Conflict Tactics Scale*- child report (CTS2; Straus, Hamby, McCoy, & Sugarman, 1996). Children were given a 31-item version of this scale which assessed the frequency of their father's (or mother's partner's) use of psychological and physical aggression towards their mother in the past year. The six items which made up the negotiation scale were not included in the total score. Example items include "father insulted or swore at mother" and "father slammed mother against a wall." Children rated each item on a 7-point scale ranging from 0 = This has never happened to 6 = More than 20 times in the past year. The scale has good internal consistency reliability ranging from .79 to .95 (Straus et al., 1996). It also had good reliability in the present sample ($\alpha = .84$). **Past IPV.** *Severity of Violence Against Women Scale* -mother report (SVAWS; Marshall, 1992) is a 46-item scale assessing the frequency and severity of threats and physical aggression against women by their male partners. Example items include "Threated to hurt you" and "Beat you up." Women rated each item on a 4-point frequency scale ranging from 0 = never to 3 = many times. A full-scale score is obtained by summing all ratings, with higher scores indicating more frequent abuse. High internal consistency ($\alpha = 0.97$) has been reported for the full scale (Huth-Bocks, Levendosky, & Semel, 2001). Mothers completed the SVAWS annually around the time of their child's birthday when children were ages 1-7. The amount of IPV that mothers reported at each of these time points was summed to produce the past IPV variable. In the present sample, 72.3 % mothers reported one or more incidents of physical, psychological, or sexual IPV.

Parent-Child Relationship Quality. *BASC-2 Self-Report of Personality-* child report (SRP; Reynolds & Kamphaus, 2002) is a 139-item self-report measure assessing behavioral and emotional problems of children ages 8 to 11. Adequate internal consistency ($\alpha = .72$ to $\alpha = .86$) and test-retest reliability (r = .64 to r = .82) has been reported (Reynolds & Kamphaus, 2004). The measure includes a 9-item Relations with Parents subscale assessing positive regard toward parents and feeling valued by them, which was used in this study as a measure of parent-child relationship quality. Example items include "My parents listen to what I say" and "My parents are proud of me." Statements were rated on a 4-point scale ranging from 0-Never to 3-Almost Always. The scale demonstrated good internal consistency in the present sample ($\alpha = 0.80$).

Appraisals of Interparental Conflict. *Children's Perceptions of Interparental Conflict Scale*- child report (CPIC; Grych, Seid, & Fincham, 1992) is a 51-item questionnaire designed to assess marital conflict from the child's perspective. The two factor analytically derived subscales used in this study, Threat and Self-blame, demonstrated acceptable levels of internal consistency and test retest reliability (Grych et al., 1992). The Threat subscale includes items such as "I get scared when my parents argue" and the Self-blame subscale includes items such as "Even if they don't say it, I know I'm to blame when my parents argue." Children rated each item on a threepoint scale ranging from 0-*True*, 1-*Sort of True*, and 2-*False*, with higher scores indicating more adaptive appraisals. In the current sample, the Threat scale demonstrated good internal constancy ($\alpha = .84$). The Self-Blame subscale demonstrated lower internal consistency ($\alpha = .61$); however, consistency improved when the two reverse-scored items (9 & 50) were dropped ($\alpha = .74$), suggesting the wording of those items may have been confusing to respondents.

Trauma Symptoms. *Child Behavior Checklist for ages* 6-81- mother report (CBC-PTSD; Achenback & Rescorla, 2001) is a 113-item questionnaire yielding maternal reports of child behavioral and emotional problems. Mothers rated items over the past 6 months 0- *Not True (as far as your know)*, 1- *Somewhat or Sometimes True*, or 2-*Very True or Often True*. The PTSD subscale, developed by Sim and colleagues (2005) consists of 7 expert-derived and factor analytically confirmed items that are summed to produce a total score. Example items include "Can't get his/her mind off things; obsessions" and "Nervous, highstrung, or tense." The scale has demonstrated acceptable internal consistency ($\alpha = .74$) and did so in the present sample ($\alpha = .77$).

Salivary cortisol and experimental manipulation. The Trier Social Stress Test for Children (TSST-C) is a standardized laboratory stress task shown to elicit a reliable physiological stress response in children ages 9 to 14 (Buske-Kirschbaum et al., 1997). For this task, the child was instructed to prepare to present a 5-minute story, and that their performance would be videotaped and reviewed by a judge. After a 5-minute preparation period, an unfamiliar

"judge" entered the room and maintained a serious demeanor while the child told his/her story. If the child did not fill the 5-minute time period, the experimenter prompted the child to continue. After the 5-minute story task the child was asked to serially subtract the number 7 from 758 as fast as possible. Children were told their performance would be compared against other children, and they were asked by the experimenter to start over from the beginning if a mistake was made. The task was discontinued after four mistakes. After the completion of the task, children were debriefed, told their performance was positive, and given a certificate of achievement. They were then allowed to play freely for 20 minutes.

Salivary cortisol was used as a minimally invasive measure of HPA axis functioning. Saliva samples of 2 ml were obtained from the children using the passive drool method three times over the course of the visit. After providing assent, the first sample was obtained 20 minutes after children's arrival at the project offices; this was the baseline sample. The second and third samples were obtained 20 and 40 minutes after the end of the TSST-C. The timing of the saliva samples was chosen to capture the expected post-stressor cortisol increase and potential return to baseline levels. Samples were stored in a -70°C freezer before being shipped to Salimetrics, LLC to be assayed in duplicate for cortisol levels. The assay was US FDA cleared as a diagnostic measure of adrenal function and the range of detection is from 0.003 to 3.0 μ g/dl, and the interassay and intrassay coefficients of variability were less than 10% and 15% respectively. Area under the curve with respect to ground (AUCg), a measure of total cortisol output capturing both intensity and sensitivity to challenge was included in the present analyses (Khoury et al., 2015). Cortisol values were log transformed after calculating AUCg to reduce skew.

Procedure

To reduce the effects of time of day on cortisol sampling results, all study visits commenced between 4:00 and 5:00pm. Upon arrival at the project offices, mothers and children completed informed consent and informed assent procedures together, and then were brought to separate rooms for the remainder of the visit. Mothers completed questionnaires and interviews with a Master's level clinician while children completed questionnaires, the stress challenge task, and saliva sampling procedures with a trained research assistant.

Data Analytic Strategy

The proposed conceptual models were fit using a series of path analyses in Mplus version 8 software (Muthén & Muthén, 1998-2017). Two models were fit, one with PTSD symptoms as the outcome, and the other predicting to children's cortisol production (Hayes, 2018). Missing data were handled using full information maximum likelihood estimation (Enders & Bandalos, 2001). Model fit was assessed using multiple indices including the chi-square index (Bollen, 1989), the comparative fit index (CFI; Bentler, 1990), and the root mean square error of approximation (RMSEA; Hu & Bentler, 1999). CFI values above .90 and RMSEA values below 0.08 indicate acceptable model fit (MacCallum, Browne & Sugawara, 1996). Indirect effects were tested using the percentile bootstrap method with 1,000 resamples to produce 95% confidence intervals around the product coefficients (Falk, 2018). Using this method, effects are considered significant if the confidence interval does not contain zero. The conditional indirect effect of self-blame on PTSD symptoms via child gender was also tested by implementing the percentile bootstrap method with 1,000 resamples.

Results

Descriptive Statistics and Bivariate Associations

In the present sample, 60.4% of children reported that there had been at least one incident of physical or psychological aggression by their father towards their mother in the past year and 50.4% had one or more trauma symptoms. Descriptive statistics, sample size, and correlations among study variables are presented in Table 1. Maternal reports of IPV experiences when children were ages 1-7 were significantly positively correlated with children's reports of parental IPV exposure at age 10. Past and current IPV exposure were both also significantly associated with children's reports of the quality of their relationships with parents such that more IPV exposure was related to poorer ratings of parent-child relationship quality. Amount of children's conflict. Self-blame was significantly positively associated with threat appraisals about parent's conflict. Self-blame was significantly positively associated with mother's reports of children's reports of children's reports of children's positively associated with threat but not with IPV exposure. Male gender was significantly positively associated with mother's reports of children's reports of children's reports of children's positively associated with mother's reports of children's PTSD symptoms.

IPV Exposure and Trauma Symptoms

The first model tested examined the association between IPV exposure and PTSD symptoms through threat and self-blame appraisals about parent's conflict. Multiple fit statistics indicated that the model was a good representation of the data, $\chi^2(14) = 16.66$, p = 0.27, CFI = 0.98, TLI = 0.97, RMSEA = 0.04. Standardized coefficients are presented in Figure 1, and unstandardized parameter estimates are presented in Table 2. The hypothesis that greater exposure to parental IPV within the past year would predict more PTSD symptoms was not supported, 95% CI [-0.285, 0.137]. Indirect effects through threat and self-blame appraisals were likewise nonsignificant (95% CI [-0.024, 0.203]; 95% CI [-0.103, 0.082]). There was a

significant direct effect of age 10 IPV exposure on children's perceived threat such that more recent IPV exposure was associated with children rating themselves as more threatened by parent's arguments and less able to cope effectively, 95% CI [0.170, 0.538]. However, the indirect effect of IPV exposure on threat appraisals through parent-child relationship quality was nonsignificant, 95% CI [-0.001 0.106], as was the sequential indirect effect of IPV exposure on PTSD symptoms through relationship with parents and threat appraisals, 95% CI [-0.004, 0.034]. The self-blame by gender interaction was also nonsignificant (B = -0.11, p = 0.66).

IPV Exposure and Challenged Cortisol

The second model examined the association between IPV exposure and children's cortisol production over the course of an acute laboratory stressor. Path model and standardized coefficients are depicted in Figure 2 and unstandardized coefficients are reported in Table 3. Child gender was not included in this model as there were no specific hypotheses about gender's impact on HPA-axis activity. Fit statistics indicated that the model was a good fit to the data $\chi^2(6) = 4.66, p = 0.59$, CFI = 1.00, TLI = 1.07, RMSEA = 0.00. There was a significant direct effect of IPV exposure on cortisol, however, the effect was in the opposite of the hypothesized direction, with more IPV exposure leading to lower overall levels of cortisol production, 95% CI [-0.409, -0.013]. Indirect effects through threat and self-blame were both nonsignificant (Threat 95% CI [-0.101, 0.241]; Self-blame 95% CI [-0.162, 0.163].

Discussion

The present study sought to further elucidate the influence of children's appraisals of perceived threat and self-blame about parental conflict on the development of behavioral and physiological trauma symptoms in a community sample of school-aged children over-sampled for IPV exposure. Maternal reports of past IPV experiences in the child's lifetime predicted children's reports of physical and psychological aggression against their mothers by male partners within the past year, suggesting that by middle childhood, children are able to report reliably on their exposure to parental IPV. In addition, children who reported greater IPV exposure rated themselves as more personally vulnerable and less able to cope effectively during parent's arguments. This finding is consistent with the notion that for children, witnessing parental IPV is a frightening and overwhelming experience that threatens their sense of personal safety and emotional security within the family system.

Higher levels of IPV exposure were also associated with poorer quality parent-child relationships, which supports the idea that IPV negatively impacts the parent-child subsystem. This is likely to occur via a combination of direct and indirect insults that IPV incurs on parentchild relationships. For example, child witnesses of parental IPV are at risk themselves of becoming targets of parent's violence (Hamby, Finkelhor, Turner & Ormrod, 2010), which would be likely to result in a fraught relationship with the perpetrating parent. In addition, the toll of IPV on maternal parenting stress and mental health might leave mothers less emotionally available to children and more likely to utilize negative parenting practices such as corporal punishment and psychological control (Huth-Bockes & Hughes, 2008; Levendosky et al, 2003; Levendoksy, Leahy, Bogat, Davidson, & Von Eye, 2008; Kolhn et al., 2012). As expected, worse child-rated relationships with parents also predicted greater threat appraisals about parental conflict. Taken together, these findings lend credence to the idea that IPV can be simultaneously detrimental to children's sense of emotional security within both the interparental and parent-child subsystems, leading children to perceive themselves as more vulnerable and helpless during parental conflict, which is ultimately thought to confer increased risk for psychopathology (Davies et al., 2006). As the measure of parent-child relationship quality used

in this study did not distinguish between children's relationships with individual caregivers, and instead referred to parents as a unit, it was not possible to examine the specific impact of IPV on mother-child and father-child relationships in this sample. Examining the gender-specific role of parent-child relationships would be an important future direction for research.

Unexpectedly, in the current sample a direct association between more frequent and intense IPV exposure in the past year and number of PTSD symptoms was not observed. There was however an association between children's reports of the frequency and intensity of IPV against their mother in the past year and cortisol production during the laboratory social stress task such that more IPV predicted lower levels of cortisol. This association was in the opposite direction than expected. Based on prior studies which found that potentially traumatic experiences in childhood, including IPV exposure, are associated with increased cortisol reactivity (e.g. Saltzman et al., 2005) it was hypothesized that children who reported more IPV exposure would secrete more cortisol in response to the social stress task. However, blunted HPA-axis responding in trauma-exposed children has also been reported in the literature. For example, in a nationally representative sample of 12-year-olds, bullied and maltreated children showed lower levels of cortisol production following the TSST-C compared to controls (Ouellet-Morin et al., 2011). This blunting of HPA axis reactivity may in fact represent an adaptation to living in a chronically stressful environment and help protect children against the harmful effects of chronically high levels of glucocorticoids (Fries, Hesse, Hellhammer & Hellhammer, 2005). Cortisol hyporeactivity in the context of parental aggression has also been hypothesized to reflect an attempt on the part of the child to dissociate from the psychological experience of threat in order to maintain some control or security in the midst of a frightening situation (Davies, Struge-Apple, & Cicchetti, 2012). If that is indeed the case, and decreased cortisol production in

children from violent households may serve a protective function, which could help to explain the null association between IPV exposure and behavioral trauma symptoms.

However, the lack of apparent association between IPV and trauma symptoms contrasts with previous findings reported in the literature (e.g., Levendosky et al., 2013; Graham-Bermann et al., 2006; Levendosky, Huth-Bocks, Semel, & Shapiro, 2002). Because of children's relatively low endorsement of witnessing more severe forms of IPV, such as physical assault and use of weapons, it is possible that trauma symptoms in this sample were driven primarily by other kinds of traumatic exposures not included in the model, for example experiences of direct victimization and community violence. It is also possible that earlier or chronic exposure to parental IPV has a greater influence on the development of trauma symptoms than exposure in middle-childhood. Additionally, prior research contends that the CBCL-PTSD subscale used to measure trauma in this study may not be sufficiently sensitive to capture trauma symptoms in school-aged children and may in fact be capturing overall distress rather than PTSD symptoms specifically. Sim and colleagues (2005) found that maternal reports of trauma symptoms on the CBCL-PTSD subscale did not significantly correlate with school-aged children's self-report of trauma symptoms, leading the authors to conclude that parents may not be good raters of their preadolescents' trauma symptoms. This problem may be exacerbated in the present sample, as mothers who are experiencing IPV and related mental health concerns themselves may be even less attuned to their children's functioning. For example, maternal reports of children's PTSD symptoms have been found to be more closely associated with mother's own trauma symptoms than with children's self-reports of trauma symptoms (Valentino, Berkowitz, Smith Stover, 2010). These findings highlight the difficulty of assessing trauma in children, and the necessity for future

researchers to use well validated measures of trauma symptoms and to include reports from multiple informants.

Furthermore, the hypothesized indirect effects of IPV exposure on PTSD symptoms through children's perceived threat and self-blame appraisals were not significant. This finding replicates the results of Kilpatrick and Williams (1998), who also failed to find support for selfblame and threat as mediators of trauma in a community sample. Prior research which found that negative attributions of self-blame/guilt and personal vulnerability contributed significant variance to the likelihood of having a PTSD diagnosis (Lehmann, 1997) was conducted in a shelter-residing sample in which children were likely to have been exposed to more severe forms of violence than those residing primarily in the community. Thus, it is possible that only children exposed to more severe forms of violence show this pattern of associations.

Despite prior reports of gender differences regarding the impact of self-blaming appraisals on adjustment outcomes in children exposed to interparental conflict and IPV (Cummings et al., 1994; Davies & Lindsay, 2001; Grych et al., 2003; Kerig, 1998; Grych et al., 2000a), a significant interaction effect of gender and self-blame on PTSD symptoms was not observed in the present sample, and mean levels of threat and self-blame were similar for boys and girls. Gender differences were observed, however, in regard to trauma symptoms, with mothers endorsing more symptoms for male children on average than for female children. This result is surprising given that girls are generally thought to be more susceptible to developing PTSD, though this difference may emerge primarily after puberty (Garza & Jovanovic, 2017). It is possible too that using the CBCL as a measure of trauma symptoms may bias reporting as it relates to gender. For example, it is possible that mothers may more readily perceive and thus rate boys as being "too fearful or anxious" due to gender role stereotypes which prize courage

and assertiveness in boys, whereas anxiety and fearfulness in girls may be seen as unremarkable and go unnoticed.

Several strengths of the present investigation should be noted. First, the inclusion of a racially and socioeconomically diverse community sample enhanced the generalizability and ecological validity of the findings as compared to studies with samples recruited only from shelter or clinical settings. Second, utilizing both behavioral and physiological indicators of trauma allowed for examination of the effects of parental IPV exposure on multiple domains of children's functioning. Additionally, a strength of the present study was its inclusion of children's self-reports about their exposure to parental IPV instead of relying on mother's reports of children's witnessing, which may be inaccurate or biased by demands of social desirability. However, the present study is not without methodological limitations. One such limitation is the potential violation of the assumption that all variables included in the path analyses are observed and free from measurement error (Cole & Preacher, 2014). Future research should include multiple measures of each construct such that latent variable models, which correct for measurement error, can be employed. Second, the cross-sectional nature of the data means that the directionality of variable relationships over time cannot be inferred. Finally, sample size made it difficult to include all of the relevant variables in the same model.

The present study sought to extend the literature on childhood exposure to parental IPV by exploring whether children's appraisals about parental conflict might constitute a mechanism mediating the development of trauma symptoms. While no evidence for indirect effects of threat or self-blame appraisals on trauma symptoms was found, the results do suggest that IPV exposure affects the regulation of children's physiological response to stress. In addition, IPV may have negative consequences for the quality of children's relationships with their parents,

which can leave them even more vulnerable to the deleterious effects of adversity within and outside the home. The lack of a direct effect between IPV exposure and trauma symptoms was unexpected. While this finding may serve as a reminder of children's remarkable resilience in the face of challenging circumstances, it should not negate or diminish the need for continued attention, research, and support for issues of family violence. Clinically, these findings highlight the need for interventions with children and families experiencing IPV that have a focus not only on enhancing safety and reducing psychiatric symptoms in children and caregivers, but also on supporting positive relationships between children and non-perpetrating caregivers (e.g. Child-Parent Psychotherapy; Leiberman, Van Horn, & Ippen, 2005; Mom Power; Muzik et al., 2015). Although children's appraisals about parental conflict did not mediate the amount of trauma symptoms in the current sample, there is evidence for the efficacy of cognitive processing and reframing, techniques used in Trauma-Focused Cognitive Behavioral Therapy for reducing PTSD symptoms in children exposed to violence (de Arellano et al., 2015). The findings of this study highlight the need for additional research to elucidate the complex pathways that link childhood experiences of interparental violence to altered stress physiology and trauma symptoms.

Table 1.

Intercorrelations and Descriptive Statistics of Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.
1. Past IPV (SVAWS 1-7)	-							
2. Age 10 IPV (CTS)	.420**	-						
3. Relations with Parents (BASC)	260**	268**	k _					
4. Threat (CPIC)	.206*	.400**	·265**	k _				
5. Self-Blame (CPIC)	.068	.194	.038	.226*	-			
6. Trauma Symptoms (CBCL)	.103	039	098	.172	.089	-		
7. Cortisol (AUCg)	073	168	048	017	028	.004	-	
8. Male Gender	153	132	.080	.068	.148	.186*	.088	-
Valid N	119	96	100	97	97	119	99	119
Mean	25.83	4.32	21.92	.62	.12	1.40	4.50	.55
SD	50.94	6.46	4.54	.47	.24	2.17	3.21	.50
Minimum	0	0	9	0	0	0	.83	.00
Maximum	335	36	27	2	1.43	11	17.76	1.00

*p < 0.05, **p < 0.01

Table 2.

Path coefficients for the effects of IPV exposure on PTSD Symptoms

Unstandardized Parameters	Estimate	SE	р	
Threat \rightarrow PTSD Symptoms	.968	.688	.159	
Blame \rightarrow PTSD Symptoms	1.148	2.496	.646	
Age 10 IPV→ PTSD Symptoms	033	.037	.377	
Gender \rightarrow PTSD Symptoms	.795	.445	.074	
Gender*Blame→ PTSD Symptoms	-1.129	2.666	.672	
Relationship w/ Parents \rightarrow Threat	019	.009	.031*	
Age 10 IPV \rightarrow Threat	.026	.008	.001**	
Age 10 IPV→ Blame	.005	.003	.047*	
Age 10 IPV→Relationship w/ Parents	189	.058	.001**	
Ages 1-7 IPV→ Age 10 IPV	.057	.015	.000**	
Covariances				
Threat with Blame	.006	.005	.274	
Gender*Blame with Gender	.037	.009	.000**	
Gender*Blame with Blame	.038	.018	.038*	
Gender with Blame	.019	.011	.092	

 $\overline{*p < 0.05, **p < 0.01}$

Table 3.

Path coefficients for the effects of IPV exposure on Cortisol

Unstandardized Parameters	Estimate	SE	р	
Threat→ Cortisol (AUCg)	.039	.055	.478	
Blame→ Cortisol (AUCg)	002	.115	.984	
Age 10 IPV→ Cortisol (AUCg)	009	.005	.097	
Relationship w/ Parents \rightarrow Threat	019	.009	.031*	
Age 10 IPV→ Threat	.025	.008	.001*	
Age 10 IPV→ Blame	.007	.004	.094	
Age 10 IPV→Relationship w/ Parents	188	.058	.001**	
Ages 1-7 IPV→ Age 10 IPV	.057	.015	.000**	
Covariances				
Threat with Blame	.018	.014	.198	

 $rac{p < 0.05, **p < 0.01}{rac{p < 0.01}{ra$



Figure 1. Path model for the effects of IPV exposure on PTSD symptoms through children's appraisals about parental conflict. Variances and residual variances are omitted from the figure for ease of interpretation. *p < 0.05, **p < 0.01.



Figure 2. Path model for the effects of IPV exposure on cortisol production (AUCg) in response to an acute stressor. Variances and residual variances are omitted from the figure for ease of interpretation. *p < 0.05, **p < 0.01.

APPENDICES

Appendix A: Severity of Violence Against Women Scale

INSTRUCTIONS: You and your partner have probably experienced anger or conflict. Below is a list of behaviors he may have done. During the last year, describe how often he has done each behavior to you, how many times your child saw or heard what happened, how stressful the event was for you, and how often did you do each behavior to your partner by choosing a letter from the following scale.

How often:	A= never	B= once	C= a few	times	D= many times	
Stressfulness:	0=	event did r	not occur	1= n	ot at all stressful	2= a little stressful
3= very stress	ful					

Partner did to you

\downarrow	Times your child saw or heard what happened
	\downarrow Stressfulness to you
	$\downarrow \qquad \downarrow$ You did to Partner

1.	 Hit or kicked a wall, door or furniture
2.	 Threw, smashed or broke an object
3.	 Driven dangerously with you in the car
4.	 Threw an object at you
5.	 Shook a finger at you
6.	 Made threatening gestures or faces at you
7.	 Shook a fist at you
8.	 Acted like a bully toward you
9.	 Destroyed something belonging to you
10.	 Threatened to harm or damage things you care about
11.	 Threatened to destroy property
12.	 Threatened someone you care about
13.	 Threatened to hurt you
14.	 Threatened to kill himself
15.	 Threatened you with a club-like object
16.	 Threatened you with a knife or gun
17.	 Threatened to kill you
18.	 Threatened you with a weapon
19.	 Acted like he wanted to kill you

20.	 Held you down, pinning you in place
21.	 Pushed or shoved you
22.	 Shook or roughly handled you
23.	 Grabbed you suddenly or forcefully
24.	 Scratched you
25.	 Pulled your hair
26.	 Twisted your arm
27.	 Spanked you
28.	 Bit you
29.	 Slapped you with the palm of his hand
30.	 Slapped you with the back of his hand
31.	 Slapped you around your face and head
32.	 Kicked you
33.	 Hit you with an object
34.	 Stomped on you
35.	 Choked you
36.	 Punched you
37.	 Burned you with something
38.	 Used a club-like object on you
39.	 Beat you up
40.	 Used a knife or gun on you
41.	 Demanded sex whether you wanted to or not
42.	 Made you have oral sex against your will
43.	 Made you have sexual intercourse against your will
44.	 Physically forced you to have sex
45.	 Made you have anal sex against your will
46.	 Used an object on you in a sexual way

Appendix B: Child Behavior Checklist - PTSD Subscale

INSTRUCTIONS: Below is a list of items that describe children and youth. For each item that decribes your child *now or during the last 6 months*, please circle the **2** if the item is *very true or often true* of your child. Circle the **1** if the item is *somewhat or sometimes true* of your child. If the item is *not true* of your child, circle the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True		Гrue	e 1 = Somewhat or	2 = Very True or			
(As far as you know)		is you	u know) Sometimes True	Often True			
0	1	2	9. Can't get his/her mind off certain thoughts; obsession	18			
0	0 1 2 29. Fears certain animals, situations, or places other than school						
0	0 1 2 45. Nervous, highstrung, or tense						
0	0 1 2 47. Nightmares						
0	0 1 2 50. Too fearful or anxious						
0	1	2	2 76. Sleeps less than most kids				
0	1	2	100. Trouble sleeping				

Appendix C: Conflict Tactics Scale

INSTRUCTIONS: No matter how well parents get along, there are times when they disagree, get annoyed with each other, want different things from each other, or just have fights because they are in a bad mood, are tired, or for some other reason. Parents also have many different ways of trying to settle their differences with each other. This is a list of things that might happen when your mothers and "_____" had differences or were angry with each other.

Please circle how many times they did the things on this list in the past year.

How often did this happen in the past year?

- 0 = This has never happened
- 1 = Once during the past year
- 2 =Twice during the past year
- 3 = 3-5 times during the past year
- 4 = 6-10 times during the past year
- 5 = 11 to 20 times during the past year
- 6 = More than 20 times during the past year

How often did this happen in the past year?	0	1	2	3	4	5	6
1. Father showed he cared about mother even when they disagreed	0	1	2	3	4	5	6
2. Father explained his side of a disagreement to mother	0	1	2	3	4	5	6
3. Father insulted or swore at mother	0	1	2	3	4	5	6
4. Father threw something at mother that could hurt	0	1	2	3	4	5	6
5. Father twisted mother's arm or hair	0	1	2	3	4	5	6
6. Mother had a sprain, bruise, or small cut because of fight with father	0	1	2	3	4	5	6
7. Father showed respect from mother's feelings about an issue	0	1	2	3	4	5	6
8. Father pushed or shoved mother	0	1	2	3	4	5	6
9. Father used knife or gun on mother	0	1	2	3	4	5	6
10. Mother passed out from being hit on the head by father in a fight	0	1	2	3	4	5	6
11. Father called mother fat or ugly	0	1	2	3	4	5	6
12. Father punched or hit mother with something that could hurt	0	1	2	3	4	5	6

13. Father destroyed something belonging to	0	1	2	3	4	5	6
14. Mother went to a doctor because of a fight with father	0	1	2	3	4	5	6
15. Father choked mother	0	1	2	3	4	5	6
16. Father shouted or yelled at mother	0	1	2	3	4	5	6
17. Father slammed mother against a wall	0	1	2	3	4	5	6
18. Father said we was sure they could work out a problem	0	1	2	3	4	5	6
19. Mother needed to see a doctor because of a fight with father, but didn't go	0	1	2	3	4	5	6
20. Father beat up mother	0	1	2	3	4	5	6
21. Father grabbed mother	0	1	2	3	4	5	6
22. Father stomped out of the room/house/yard when he had a disagreement with mother	0	1	2	3	4	5	6
23. Father slapped mother	0	1	2	3	4	5	6
24. Mother had a broken bone from fight with father	0	1	2	3	4	5	6
25. Father suggested a compromise to a disagreement with mother	0	1	2	3	4	5	6
26. Father burned or scalded mother on purpose	0	1	2	3	4	5	6
27. Father did something to spite mother	0	1	2	3	4	5	6
28. Father threatened to hit or throw something at mother	0	1	2	3	4	5	6
29. Mother felt physical pain that still hurt the next day because of a fight with father	0	1	2	3	4	5	6
30. Father kicked mother	0	1	2	3	4	5	6
31. Father agreed to try a solution to a disagreement suggested by mother	0	1	2	3	4	5	6

Appendix D: Children's Perception of Interparental Conflict Scale

INTSRUCTIONS: In every family there are times when the parents don't get along. When parents argue or disagree, kids can feel a lot of different ways. We would like to know what kinds of feelings *you* have when your mother and "_____" have arguments or disagreements.

T = TRUE

ST = SORT OF TRUE

F = FALSE

- 1. T ST F I never see my parents arguing or disagreeing
- 2. T ST F When my parents have an argument they usually work it out
- 3. T ST F My parents often get into arguments about things I do at school
- 4. T ST F When my parents argue it's because one of them just had a bad day
- 5. T ST F My parents get really mad when they argue
- 6. T ST F When my parents argue I can do something to make myself feel better
- 7. T ST F I get scared when my parents argue
- 8. T ST F I feel caught in the middle when my parents argue
- 9. T ST F I'm not to blame when my parents have arguments
- 10. T ST F They may not think I know it, but my parents argue or disagree a lot
- 11. T ST F Even after my parents stop arguing they stay mad at each other
- 12. T ST F When my parents argue usually it has to do with their own problems
- 13. T ST F My parents have arguments because they are not happy together
- 14. T ST F When my parents have a disagreement they discuss it quietly
- 15. T ST F I don't know what to do when my parents have arguments
- 16. T ST F My parents are often mean to each other even when I'm around
- 17. T ST F When my parents argue I worry about what will happen to me

- 18. T ST F I don't feel like I have to take sides when my parents have a disagreement
- 19. T ST F It's usually my fault when my parents argue
- 20. T ST F I often see or hear my parents arguing
- 21. T ST F When my parents disagree about something, they usually come up with a solution
- 22. T ST F My parents' arguments are usually about me
- 23. T ST F The reasons my parents argue never change
- 24. T ST F When my parents have an argument they say mean things to each other
- 25. T ST F When my parents argue or disagree I can usually help make things better
- 26. T ST F When my parents argue I'm afraid that something bad will happen.
- 27. T ST F My mom wants me to be on her side when she and my dad argue
- 28. T ST F Even if they don't say it, I know I'm to blame when my parents argue
- 29. T ST F My parents hardly ever argue
- 30. T ST F When my parents argue they usually make up right away
- 31. T ST F My parents usually argue or disagree because of things that I do
- 32. T ST F My parents argue because they don't really love each other
- 33. T ST F When my parents have an argument they yell at each other
- 34. T ST F When my parents argue there's nothing I can do to stop them
- 35. T ST F When my parents argue I worry that one of them will get hurt
- 36. T ST F I feel like I have to take sides when my parents have a disagreement
- 37. T ST F My parents often nag and complain about each other around the house
- 38. T ST F My parents hardly ever yell when they have a disagreement
- 39. T ST F My parents often get into arguments when I do something wrong

- 40. T ST F My parents have broken or thrown things during an argument
- 41. T ST F After my parents stop arguing, they are friendly towards each other
- 42. T ST F When my parents argue I'm afraid that they will yell at me too
- 43. T ST F My parents blame me when they have arguments
- 44. T ST F My dad wants me to be on his side when he and my mom argue
- 45. T ST F My parents have pushed or shoved each other during an argument
- 46. T ST F When my parents argue or disagree there's nothing I can do to make myself feel better
- 47. T ST F When my parents argue I worry that they might get divorced
- 48. T ST F My parents still act mean after they have had an argument
- 49. T ST F My parents have arguments because they don't know how to get along
- 50. T ST F Usually it's not my fault when my parents have arguments
- 51. T ST F When my parents argue they don't listen to anything I say

Appendix E: BASC-2 Relations with Parents Subscale

INSTRUCTIONS: This questionnaire contains sentences that tell how some boys and girls think or feel or act. Read each sentence carefully.

You will have 4 answer choices: N, S, O, and A

Circle N if the sentence never describes how you feel.

Circle **S** if the sentence **sometimes** describes you or how you feel.

Circle **O** if the sentence **often** describes you or how you feel.

Circle A if the sentence almost always describes you or how you feel.

Give the best answer for you for each sentence, even if it is hard to make up your mind. There are no right or wrong answers. Please do you best, tell the truth, and answer every sentence.

89. My mother and father help me if I ask them to	Ν	S	0	А
100. My parents are easy to talk to	N	S	0	А
101. My mother and father like my friends	Ν	S	0	А
109. I am proud of my parents	Ν	S	0	А
112. My parents are proud of me	Ν	S	0	А
117. My parents trust me	N	S	0	А
129. My parents like to help me with my homework	Ν	S	0	А
133. My parents listen to what I say	Ν	S	0	А
137. I like going places with my parents	N	S	0	A

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