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Child appraisals of interparental conflict: The effects of intimate partner violence and the quality of parent-child relationships

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Child appraisals of interparental conflict: The effects of intimate partner
violence and the quality of parent-child relationships.

A Thesis

Presented in

Partial Fulfillment of the

Requirements of the Degree of

Master of Arts

By

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Department of Psychology

College of Science and Health

DePaul University

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Thesis Committee

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Biography

The author was born in Salt Lake City, Utah, October 23rd, 1990. He graduated from Park City High School and received his Bachelor of Science degree in Psychology from the University of Utah in 2012. He is currently pursuing a PhD in Clinical-Child Psychology at DePaul University in Chicago, Illinois.

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Abstract

Children's appraisals of parental conflict, particularly perceived levels of threat, self-blame, and coping efficacy, have consistently been shown to mediate the association between conflict exposure and maladaptive outcomes. However, few studies have examined factors that may contribute to children's use of these maladaptive appraisals, particularly among children exposed to more severe forms of interparental conflict. The current study will examine the influence of intimate partner violence (IPV) exposure and parent-child relationship quality on children's appraisals of conflict, evaluating if these factors have independent effects, if they interact (i.e., parent-child relationship quality buffers the effect of IPV) or if parent-child relationship quality mediates the association between IPV and maladaptive appraisals. Participants were 118 mother-child dyads from a larger longitudinal study of IPV, recruited from a mid-size Midwestern town. Independent multiple linear regressions revealed that IPV predicted worse appraisals for all dimensions examined (i.e., threat, frequency, intensity, stability, coping efficacy, self-blame, content and resolution) and parent-child relationship quality predicted coping efficacy appraisals above and beyond the effect of IPV. Mediation analyses revealed the association between IPV and levels of coping efficacy was significantly mediated by parent-child relationship quality. Findings help delineate the pathways that lead to maladaptive appraisals and identify potential protective factors that can guide intervention efforts for children exposed to IPV.

Introduction

In the United States, approximately 15.5 million children live in a home in which intimate partner violence (IPV) has occurred in the previous year (McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). These children represent a population particularly at risk for an array of early psychosocial problems that often persist into adulthood (for a review, see Holt, Buckley, & Whelan, 2008). Multiple theories have been proposed to account for the negative effects of IPV, including the cognitive contextual framework (Grych & Fincham, 1990), which proposes that child cognitive appraisals of the home conflict shape their emotional and behavioral outcomes.

Research supports the importance of maladaptive cognitive appraisals such as high threat or self-blame on the development of psychopathology (e.g. Cummings et al., 1994), and these maladaptive appraisals are more likely to develop in the context of angry and aggressive interactions between parents (for a review, see Grych & Fincham, 2001), such as those that characterize IPV. However, few studies have examined the factors that contribute to more use of maladaptive appraisals among children exposed to IPV. These studies report that IPV that is more chronic or frequent leads to more maladaptive appraisals (e.g. McDonald, Jouriles, Tart, & Minze, 2009). On the other hand, findings with children living in non-violent households report a protective impact of strong parent-child relationships on child appraisals (e.g. DeBoard-Lucas et al., 2010). Based on the cognitive contextual model and previous

empirical research, the proposed study will extend the literature regarding children's cognitive appraisals to a population who has experienced more severe forms of interparental conflict, namely IPV. This study will examine the influence of IPV exposure and the quality of parent-child relationships on child appraisals of interparental conflict. The proposed study also will evaluate if parent-child relationship quality can moderate the effects of IPV on child appraisals, such that a positive parent-child relationship can protect against the negative effects often associated with IPV exposure on child appraisals of conflict. Third, the current study aims to examine whether IPV directly influences parent-child relationship quality, which, in turn, influences child appraisals of interparental conflict. Findings may help delineate the pathways that lead to maladaptive appraisals and identify potential protective factors that can guide intervention efforts for children exposed to IPV.

Impact of Intimate Partner Violence

Intimate partner violence (IPV) refers to a severe form of conflict between romantic partners that involves instances or threats of physical violence (pushing, shoving, punching, etc.), sexual violence (use of physical force to compel a person to engage in sexual act, abusive sexual contact, etc.), and psychological violence (humiliation, isolation, harassment, etc.; Saltzmann, Fanslow, McMahon, & Shelley, 2002). Decades of research have clearly established the association between IPV exposure and maladaptive child outcomes, including externalizing (like disruptive behavior or aggression; e.g. Fantuzzo et al., 1991) and internalizing symptoms (like

depression or anxiety; e.g., Grych, Jouriles, Swank, McDonald, & Norwood, 2000), as well as Posttraumatic Stress Disorder and dissociative symptoms (e.g. Bogat, DeJonghe, Levendosky, Davidson, & von Eye, 2006). Further, some studies suggest 40-60% of 8-12 year old children that have witnessed IPV display clinically diagnosable levels of emotional and/or behavioral problems (Graham-Bermann, Gruber, Howell, & Girz, 2009; Grych et al., 2000).

The mechanisms via which IPV results in behavioral or emotional problems are still unclear. Kitzmann, Gaylord, Holt, and Kenny (2003) concluded that there is strong evidence linking IPV exposure with diverse psychosocial problems in children, but the existing state of the literature does not delineate the processes through which IPV leads to psychological problems. Varied theoretical frameworks have been applied to help uncover this association, including trauma theories (e.g. Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004), ecological theories (e.g. Levendosky & Graham-Bermann, 2001), social learning (e.g. Graham-Bermann, 1998), and attachment theory (e.g. Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998). In the present study we will focus on Grych and Fincham's (1990) cognitive contextual framework, a theoretical model that has garnered considerable empirical support to explain differences in adjustment among youth exposed to parental conflict, which will be reviewed in the following section.

Child Appraisals of Interparental Conflict

According to the cognitive contextual model (Grych & Fincham,

1990), differences in the child's cognitive appraisal of conflict may result in differential functioning due to their greater proximity to the child's psychological adjustment (Grych & Fincham, 1990). The model integrates affect and cognition as central to appraisals (as opposed to purely cognitive definitions of appraisals) aligning more closely to functional definitions that highlight the importance of both emotion and cognition in the process of making meaning from salient events (Barret & Campos, 1987).

According to this model, when children witness conflict between caregivers, they undergo a two-stage process in attempts to understand and make sense of the conflict. During the primary processing stage, children both recognize a stressful interaction is occurring, and experience an initial affective reaction. The severity of this affective reaction is thought to be influenced by the properties of the conflict, including its frequency (e.g., "I often see or hear my parents arguing"), intensity (e.g., "When my parents argue I worry that one of them will get hurt"), content (e.g., "My parent's arguments are usually about me"), and resolution (e.g., "My parents still act mean after they have had an argument"). Also, there are likely to be individual differences in the initial affective response to conflict, with some children being more and others less reactive. Cummings and colleagues (1981) found that although the majority of children exhibit signs of distress when exposed to conflict, there was significant variation in the intensity of the expressed negative affect, which was independent from the characteristics of the conflict.

In the secondary processing stage, the child attempts to understand why the conflict occurred, who is responsible for it, and whether they have adequate skills to successfully cope with the conflict. These cognitive attributions are influenced by the child's initial affective response (Davies & Cummings, 1995) and can be characterized among the dimensions of triangulation (e.g., "I feel like I have to take sides when my parents have a disagreement"), stability (e.g., "My parents have arguments because they are not happy together"), threat (e.g., "I get scared when my parents argue"), degree of self-blame (e.g., "It's usually my fault when my parents argue"), and coping efficacy (e.g., "I don't know what to do when my parents have arguments"). These appraisal dimensions then influence child responses to family violence and conflict. For example, children who view conflict as threatening or feel unable to cope effectively are hypothesized to experience more anxiety and helplessness when conflict occurs, and those who blame themselves for parental disagreements or feel a sense of responsibility in helping resolve the conflict are proposed to experience greater levels of guilt, shame, and sadness (Grych, Harold, & Miles, 2003).

Empirical evidence shows that perceptions of conflict may be measured with adequate reliability even among young children and represent valid predictors of child outcomes (Miller et al., 2012; Rhoades et al., 2008). Research also shows that, as proposed by the cognitive contextual model, children actively attempt to understand and derive meaning from interparental violence. DeBoard-Lucas and colleagues (2011) conducted a semi-structured

interview of children (ages 7-12) in a domestic violence shelter assessing the child's perception of interparental conflict and violence. Most children perceived the cause of family violence to be primarily the perpetrator's lack of control of anger or the perpetrator's personal characteristics, and children often attempted to stop and/or withdraw from fights.

Child appraisals of parental conflict have been studied as a mediator of the association between parental conflict and internalizing problems (Gerard et al., 2005), externalizing problems (Grych & Cardoza-Fernandez, 2001), negative affect, self-esteem problems, and other maladaptive developmental outcomes (Cummings, Davies, & Simpson, 1994; Rhoades, 2008). However, it is difficult to ascertain whether maladaptive appraisals of interparental conflict lead to internalizing/externalizing problems using a cross-sectional methodological design. Longitudinal findings help identify the directionality of the relationship between interparental conflict appraisals and maladaptive outcomes. Results suggest bidirectional influences. Grych and colleagues (2003) found that exposure to higher levels of interparental conflict was predictive of greater perceived threat and self-blame 12 months later. Further, perceived threat was associated with increased internalizing problems 12 months later, and self-blame was associated with externalizing problems 12 months later.

Appraisals of Interparental Conflict and Child Outcomes

Overall, appraisals of threat, self-blame, and coping efficacy have received most attention and may have the most profound effects on

developmental outcomes. Findings specific to each dimension will be reviewed below.

Threat. Appraisals of threat include both psychological and physical threats to the child's safety (Grych, Harold, & Miles, 2003). The majority of studies examining appraisals of threat as a predictor of maladjustment have found a link to internalizing, but not externalizing problems (Dadds, Atkinson, Turner, Blums, & Lendich, 1999; Kerig, 1998; Grych et al., 2003).

Perceptions of threat have substantial potential to evoke intrusive thoughts or feelings surrounding personal safety, family stability, or being drawn into parental conflict, which is likely to result in fear and anxiety (Gerard, Buehler, Franck, & Anderson, 2005). Over time, holding high appraisals of threat chronically may tax social and emotional functioning, as well as the psychological health of the child. Children may also perceive less severe situations as threatening. Gerard and colleagues (2005) directly tested a mediation model, and found that perceived threat mediated the effects of both youth perceptions of interparental conflict (comprised of youth-reported conflict intensity, overt hostility, and degree of triangulation) and parent-report of overt hostility during conflict on internalizing problems.

Self-Blame. Self-blame refers to the extent to which children perceive themselves as personally responsible for their parents' conflict (Grych, Harold, & Miles, 2003). Children who blame themselves for parental conflict might experience increased levels of guilt and anger in response to their perceived responsibility, as compared to youth who attribute blame to the

parents or external circumstances (Gerard et al., 2005).

Child appraisals of self-blame increase risk for anxiety symptoms (Cummings et al., 1994; Grych et al., 2000). Skopp and colleagues (2005) found that differences in internalizing symptoms between siblings with similar exposure to interparental conflict were related to differential levels of self-blame and threat appraisals. Findings also suggest self-blame and threat account for greater differences in adjustment when compared to conflict properties, such as frequency or intensity (Stocker & Youngblade, 1999), suggesting that self-blame and threat predict child outcomes above and beyond the conflict characteristics studies often examine. Grych and colleagues (2000) examined two large samples of children, one sample drawn from the community and the other from a battered women's shelter, and found that threat and self-blame independently mediated the association between children's exposure to conflict and internalizing problems.

Coping Efficacy. Children experiencing normative parental conflict may feel capable to cope appropriate with interparental conflict, using problem-solving strategies (efforts to do something that alleviates stressful circumstances) and/or emotion-focused coping strategies (efforts to regulate the emotional consequences of stressful events; Folkman & Lazarus, 1980). In contrast, children raised in violent homes often face a difficult decision: a choice of either intervening to help the victim or leaving the situation to keep themselves safe. Since children may not be able to protect both themselves and the victim, they may feel less capable to respond appropriately in these

situations, and more generally powerless, inadequate, and helpless (Fosco, DeBoard, & Grych, 2007). Thus, repeated exposure to parental violence may foster anxiety and depression due to the child's perceived inability to effectively respond and consequent perceptions of inadequacy or helplessness (Fosco et al., 2007). Grych and Fincham (1990) referred to a child's perception of the effectiveness of their coping as *efficacy expectation*, and this might impact the effect of parental conflict on children (Covell, & Miles, 1992).

Few studies examine the effects of coping efficacy on developmental outcomes for children exposed to IPV. Although scarce, preliminary findings support the notion of coping efficacy as an important mechanism for maladaptive outcomes. For example, one study found that diminished coping efficacy mediated the association between overt parental conflict hostility and child internalizing problems independently and when paired with threat (Gerard et al., 2005). The scarcity of research is partly because appraisals of threat and coping efficacy are often highly correlated and merged into one score. However, the theoretical views reviewed suggest appraisals may contribute to child adjustment outcomes through distinct pathways, highlighting the need to evaluate the effects of threat and coping efficacy separately.

Risk Factor: Intimate Partner Violence

IPV is often an objectively dangerous situation for the child, mother, and/or, father (Appel & Holden, 1998). To a certain extent, appraising interparental conflict as threatening when IPV has occurred in a household is

adaptive, as it may motivate and guide the child to take steps to protect themselves or others. In this case, elevated perceptions of threat during interparental conflict may enhance safety (Grych & Cardoza-Fernandes, 2001). Community children with past exposure to IPV are more likely than children without a history of IPV to be distressed by later non-violent conflict (Garcia, O'Hearn, Margolin, & John, 1997), display greater withdrawal and anxiety during non-violent conflict (Gordis et al., 1997), and are more likely to engage in distracting, support-seeking behaviors during non-violent conflict (Gordis et al., 1997; O'Brien, Margolin, John, & Kreuger, 1991).

Observing hostile, aggressive forms of interparental conflict may sensitize children to later conflict. Children's prior experience with IPV will shape their expectations of the conflict's characteristics, their role in the conflict, and their ability to cope. Research suggests that increased exposure to violence may augment child sensitivity to stress, such that children become increasingly reactive to future interparental hostility after witnessing IPV (Grych & Fincham, 2001) and less able to use adaptive emotion regulation strategies during interparental conflict (DeJonghe, Bogat, Levendosky, von Eye, & Davidson, 2005; Grych et al., 2003). This sensitization is also apparent in physiological processes, including dysregulation of the sympathetic, parasympathetic, and Hypothalamic-Pituitary-Adrenal axis among children exposed to IPV (Bair-Merritt, Johnson, Okelo, & Page, 2012; El-Sheik & Erath, 2011). Several studies have examined child appraisals of interparental conflict specifically in the context of IPV. For example, Miller and colleagues

(2012) noted maternal and children's reports of IPV were associated with increased appraisals of threat for both girls and boys in a preschool sample, which aligns with other findings of increased threat appraisals in older samples exposed to IPV (e.g. 8-12 year olds; McDonald, Jouriles, Tart, & Minze, 2009).

Davies and Cummings' (1994) propose that parental violence that leads to chronically high perceptions of threat decreases the child's emotional security, an important component of a child's ability to regulate emotions (Cummings & Davies, 1994). Emotional insecurity, on the other hand, promotes less effective coping and greater emotional and behavioral dysregulation. Emotional insecurity leads to (1) emotional reactivity characterized by fear, distress, vigilance, and covert hostility, (2) either an over-involvement or avoidance of parental conflict, and (3) increased negative representations of family conflict, such that conflict will become violent or spill-over into parent-child relationships (Davies & Cummings, 1998). This hypothesis suggests, in the context of interparental conflict, a bidirectional association between emotional security and the parent-child attachment. In turn, interparental conflict (and accompanying emotional insecurity) may directly contribute to attachment insecurity, a parent-child dynamic consistently linked to maladaptive outcomes (Bowlby, 1969).

Protective Factors: Parent-Child Relationship Quality

Given the substantial number of findings for maladaptive outcomes associated with children exposed to IPV, it is important to recognize a notable population of children exhibit resilience after exposure to IPV. For example,

one study found that approximately 40–50% of preschool children exposed to IPV display clinical levels of internalizing and externalizing behavioral problems, but as many as 50% of children did not show evidence of psychopathology (Edleson, 2001). Similarly, a meta-analysis of studies with children exposed to family violence found that 37% of children who are witnesses or personally experience violence fare equally as well or better than those without violence exposure (Kitzmann, Gaylord, Holt, & Kenny, 2003). More recently, in a community sample of children exposed to domestic violence, 54% displayed resilience (Martinez-Torteya, Bogat, von Eye, & Levendosky, 2009). These findings suggest positive adaptation is common in the face of adversity.

Research suggests the protective role of at least one supportive parent-child relationship in the context of multiple forms of adversity, including IPV (Reis, Colbert, & Hébert, 2004). Previous research has provided multiple frameworks to understand the interplay between IPV exposure and the parent-child relationship. Three models will be examined:

Additive Model. A child's experience of IPV and their relationship with parents may independently influence appraisals of interparental conflict. Although more exposure to IPV is consistently linked to appraisals of conflict, a strong parent-child relationship may increase a child's repertoire of coping strategies and thus, decrease maladaptive appraisals of interparental conflict (Grych and Fincham, 2001). Parents who are responsive and sensitive to their child's distress may also provide coping support during and/or after the

conflictual interaction that helps diminish a child's use of maladaptive appraisals. An analog study found that parents who explicitly told the child the conflict was not their fault perceived they were less to blame, that they would be able to help resolve the conflict, were less likely to be drawn into the conflict, and tended to endorse appropriate coping strategies (Grych & Fincham, 1993). Although studies of parent-child relationship quality have been shown to buffer the effects of interparental conflict on social/emotional outcomes, there is little research examining the importance of this association for children exposed to more severe forms of parental conflict, such as IPV.

Moderation Model. Other findings suggest the predictive power of interparental conflict on child appraisals and outcomes may depend on levels of parent-child relationship quality. For example, studies suggest that at least one supportive parent-child relationship is protective in the context of multiple forms of adversity, including IPV (Reis, Colbert, & Hébert, 2004). DeBoard-Lucas and colleagues (2010) found that mother's negative parenting practices magnified the relation between interparental conflict and self-blame. More specifically, this study found children who had been exposed to more conflict reported higher levels of self-blame, but the association was amplified by coercive, controlling behavior, and dismissive or punitive responses to children's distress. In the presence of emotionally supportive parenting, this association diminished.

Mediation Model. Other studies suggest IPV may directly lead to differences in parent-child relationship quality, which may then lead to

differences in child appraisals and outcomes. Attachment theory suggests children with secure attachments maintain working models of their parents characterized by availability, responsiveness, and a source of comfort in the face of stressful events (Bowlby, 1969; Kerns, Klepac, & Cole, 1996).

Further, these children are more likely to view interparental conflict as a transitory, limited disruption to family harmony and stability, as shown by findings that adolescents who reported secure attachments to their mothers appraised interparental conflict as less threatening (Grych, Raynor, & Fosco, 2004). For example, insecure representations of family relationships have been shown to mediate the association between parental conflict and adjustment problems, including depression and adolescent delinquency (Buchanan, Maccoby, & Dornbusch, 1991).

Individual and Contextual Factors

Variation in child appraisals of conflict may be influenced by broader individual and contextual factors, many of which have been implicated in shaping child outcomes in response to conflict and violence by previous research.

Gender. Studies of gender differences in child appraisals of interparental conflict have produced mixed results. Several cross sectional studies have found that, when compared to girls, boys tend to interpret conflict as more threatening (Cummings et al., 1994; Kerig, Federowicz, Brown, Pataneude, & Warren, 1998b). In contrast, a longitudinal study found an association between interparental conflict and threat appraisals existed for

both boys and girls, but the association was stronger for girls (Richmond & Stocker, 2007). Further, Grych (1998) found that girls viewed greater conflict intensity as more threatening, while boys reported similar levels of perceived threat for conflicts of greater and lesser intensity. Also, self-blame appraisals have been shown to have greater influence in shaping girls' emotional responses to interparental conflict than for boys (e.g. Kerig, 1998; Kerig et al., 1998b).

Biopsychosocial models that highlight socialization processes may help illuminate the gender differences found in interparental conflict appraisals. Specifically, Davies and Lindsay (2001) have hypothesized that as children grow older, boys tend to develop a greater focus on themselves as individuals, and accordingly display behaviors that perpetuate self-preservation and independence. Therefore, boys may interpret parental conflict as more threatening and harmful to their personal safety. On the other hand, it is believed that girls are encouraged to emphasize relatedness and connectedness, particularly within close relationships. Thus, in the face of interparental conflict, girls may feel greater concern toward how the conflict may threaten the family level of cohesion and perceive themselves as having an increased role in the conflict. In support of this hypothesis, girls have been shown to report greater levels of perceived self-blame when compared to boys (Miller et al., 2012). Also Kerig and colleagues (1998) reported that as IPV exposure increased, boys reported higher levels of threat and girls reported increased levels of self-blame. These findings emphasize the need to

recognize gender as a contextual factor that may affect child appraisals of interparental conflict.

Prior Internalizing/Externalizing Problems. Although considerable research suggests maladaptive child appraisals of conflict leads to internalizing and externalizing problems, it is important to consider the bidirectional associations between internalizing problems and child appraisals. Children with depressive symptomatology may be more inclined to view themselves as at fault when problems arise in the family, and children experiencing higher levels of anxiety may tend to view many situations, including family conflicts, as more threatening (Grych, Harold, & Miles, 2003). Accordingly, Grych and colleagues (2003) found that internalizing symptoms predicted threat appraisals 12 months later, suggesting earlier and concurrent adjustment problems can impact child appraisals of interparental conflict.

Maternal Depression. Mothers who are victims of IPV are disproportionately at risk of experiencing psychological problems. A meta-analysis found strong associations between IPV and suicidality, depression, alcohol and drug abuse or dependence, and PTSD symptoms (Golding, 1999). Women reporting frequent and stressful IPV experiences may be particularly at risk for heightened impairment, reflected by comorbid problems with PTSD and depression (Martinez-Torteya, Bogat, von Eye, Levendosky, & Davidson, 2009). Research suggests children of mothers who are victims of IPV exhibit dysfunctional behavior closely aligned to their mothers' functioning (Symes,

2011; Symes, McFarlane, Nava, Gilroy, & Maddoux, 2012). For example, a recent study found that abused mothers with internalizing disorders (i.e., anxiety, depression, withdrawal, somatic complaints) in the clinical range of severity were 7 times more likely to have a child with the same internalizing disorders in the clinical range of severity (McFarlane, Symes, Binder, Maddoux, & Paulson, 2014).

Further, maternal psychopathology may foster difficulties in bonding with the child, potentially leading to insecure and disorganized attachment styles (Wan & Green, 2009). When exposed to IPV, children with insecure attachment styles may be particularly at risk for developing a variety of psychopathological problems, including depression, anxiety, PTSD, and aggression (Graham-Bermann et al., 2009; Holt, Buckley, & Whelan, 2008). Considering the bidirectional influences between adjustment problems and child appraisals mentioned above, increased internalizing problems in IPV-exposed youth may lead to increased perceptions of self-blame and perceived threat.

Income. Low-income mothers face considerable stress in their everyday lives, and are at disproportionate risk for mental health problems, including increased depressive symptoms (Lennon, Blome, & English, 2002), and rates of IPV have been found to be particularly high among low-income women. Research shows that rates of current or recent violence among women receiving welfare range from 10% to 77% (Tjaden & Thoennes, 2000), and lifetime rates of violence range from 22% to 83% (Tolman & Raphael, 2000).

The effects of IPV may exacerbate stressful living conditions, and places mothers at greater risk for mental health problems (Goodman, Smyth, Borget, & Singer, 2009) that may impact a child's perceptions of parental conflict. Low income has also shown to be directly linked to the development of aggression, delinquency, and anxiety and depression symptoms among youth, as poverty-related stress tends to invoke feelings of uncertainty and demoralization (Snyder, Reid, & Patterson, 2003). Further, those in low-income families tend to face neighborhood disadvantage such as low residential mobility (a predictor of delinquency, withdrawal, and thought problems; Sampson & Laub, 1994) and low neighborhood education levels (a predictor of worsening attention and social problems over time; Santiago, Wadsworth, & Stump, 2011) which aligns with prior research demonstrating that children in more affluent neighborhoods have fewer social, behavioral, and educational problems than those in poor neighborhoods (e.g., Brooks-Gunn et al., 1997; Harding, 2003).

Rationale

Few, if any, studies have examined the association between IPV, parent-child relationships, and child appraisals of the conflict. Given the robust link between children's cognitive appraisals of interparental conflict and maladaptive social, emotional, and behavioral outcomes, it is important to examine the factors that shape child cognitive appraisals. Children's cognitive processing of interparental conflict may be particularly problematic if exposed to more extreme levels of conflict (IPV), increasing risk for psychopathology.

The present study also aims to examine, through 3 separate models, how parent-child relationship quality and IPV jointly influence child cognitive appraisals of interparental conflict. Findings that positive parental relations are a protective factor in the association between IPV and interparental conflict appraisals may help target intervention efforts to help protect IPV-exposed children from the adverse effects of parental violence.

Statement of Hypotheses

Hypothesis I. Higher levels of IPV exposure will be associated with more perceptions of maladaptive cognitive appraisals of interparental conflict.

Hypothesis II. For children exposed to IPV, stronger parent-child relationship quality will be associated with less maladaptive cognitive appraisal use.

Three alternative models were tested:

a. Additive: Higher levels of parent-child relationship quality will be associated with less maladaptive cognitive appraisal use, above and beyond the effect of IPV.

b. Moderation: The association between IPV and child appraisals of interparental conflict will be moderated by parent-child relationship quality, such that positive relations will lessen the effect of IPV on maladaptive appraisals.

c. Mediation: parent-child relationship quality will mediate the association between IPV and maladaptive cognitive appraisal use, such that IPV will lead to more maladaptive appraisals due to its negative effect on the parent-child relationship.

Method

Participants and Procedures

Participants were 118 mother-child dyads (54 girls and 64 boys), drawn from a larger longitudinal study of intimate partner violence conducted at Michigan State University (<https://psychology.msu.edu/mis/>). Participants of the study were recruited from a mid-size Midwestern town using fliers posted at Obstetric/Gynecologic or women's health clinics (39%), libraries, stores, and other public sites (27%), social services programs such as Head Start, the Family Independence Program, Women Infants and Children Program, and Maternal Infant Outreach Program (26%), childbirth classes (5%) and other sites (3%). For the initial interview, inclusion criteria included being in the last trimester of pregnancy, 18 to 40 years of age, involvement in a romantic relationship for at least 6 weeks during the pregnancy, and understanding English well enough to complete questionnaire and interviews.

Women interested in participation contacted the research office and completed a brief telephone screening conducted by advanced undergraduate and graduate research assistants to determine eligibility. Women also received a description of the assessment protocol. The initial interview (T1) was scheduled during the woman's third trimester of pregnancy, and it was followed by another interview two months after the birth of their baby (T2). Subsequent interviews of women and their children occurred every year around the time of the child's birthday starting when the children were one year old and until age 7 (T3, T4, T5, T6, T7, T8, and T9). Interviews lasted

about 3 hours and consisted of a variety of questionnaires and some dyadic tasks (e.g., free-play). Information collected during these assessments will be used to control for children's history of IPV exposure, maternal depression, family income, and internalizing/externalizing problems.

For the present study, mother-child dyads were invited again to complete an evaluation when the children were 10 years of age ($M = 10$ years, 6 months; $SD = 3$ months). Following informed consent and informed assent procedures, mothers and children completed the assessment in separate rooms. The mother completed questionnaires and interviews with a Master's level clinician, while the child completed questionnaires and a stress-induction procedure in a separate room with a research assistant.

The 118 children participating in the research were identified by their mothers as 50% white, 23% Black/African-American, 23% multiracial, 2% Latino, 1% Native American and 1% Asian American. On average, the family income was \$3,196 ($SD = \$2,805$). Average maternal age was 36.3 and 11% of mothers did not complete high school, 28% completed high school, 42% completed some college or trade school, 11% had a bachelor's degree, and 6% had some graduate school or a graduate degree. Among mothers, 24% were single, 53% married, 16% divorced, 5% were separated, and 2% were widowed. In regard to child gender and ethnicity, maternal education, maternal marital status, or maternal age, there were no significant differences between the current sample and the original sample of 206 women. Monthly

family income during pregnancy, however, was significantly lower for those who did not participate in the current study.

Measures

Maternal Report. Severity of Violence against Women Scales (SVAWS; Marshal, 1992). The SVAWS was used to assess maternal report of IPV experiences from pregnancy up to children's age 7. A 46-item questionnaire measures the frequency of threats of violence, actual physical violence, and sexual violence during the past year. Women rate each item on a 4-point frequency scale. Item examples include "Destroyed something belonging to you", and "Punched you." A total frequency score was obtained at each time point by summing all ratings. The scale has high internal consistency ($\alpha = .97$) for the full scale (Huth-Bocks, Levendosky, & Semel, 2001). Internal consistency for the current study was adequate ($\alpha = .79$).

The Child Behavioral Checklist for ages 6-18 (CBCL/6-18; Achenbach & Rescorla, 2001) is a 113-item questionnaire that assesses maternal report of behavioral and emotional problems, which yield broadband internalizing and externalizing scales and 8 subscales. Mothers completed this questionnaire when their children were 7 and 10 years old. Mothers rate their child's behavior in a 3-point Likert scale (0=Never true, 1=Sometimes True, 2=Often True). Internal consistency ranges from $\alpha = .72 - .94$ and reliability ranges from $r = .82-.92$. Validity is supported through correlations with the Behavior Assessment System for Children (BASC) scales ($r = .38$ to $.88$) and a high percentage of correct classification of referred vs. non-referred children

(80–85%; Achenbach & Rescorla, 2001). For the Internalizing and Externalizing scales, the age-normed T-scores (range = 30–100) were used. Higher scores indicate higher levels of psychological/behavioral problems as compared to other children of the same age. Internal consistency for the internalizing subscale in the current study was $\alpha = .86$ and the externalizing subscale was $\alpha = .95$.

The Beck Depression Inventory (BDI; Beck, Mendelson, Mock, & Erbaugh, 1961) is a 21-item self-report questionnaire assessing symptoms of depression. Women completed this questionnaire when their children were 7 and 10 years old. Women select the best evaluative statement that describe their behaviors and feelings during the past week, with values from 1 - 4, (e.g., “I blame myself for everything bad that happens” = 4; “I have no appetite at all anymore” = 3). Good internal consistency has been reported ($\alpha = .86$; Beck, Steer & Garbin, 1988). The total score (range = 0–63) was used; higher scores reflect more severe symptoms. For the current study, the BDI had high internal consistency ($\alpha = .89$).

Income. Mothers reported their average family monthly income for the past year when their children were 7 and 10 years old.

Child Report. All child report measures were collected during the age 10 assessment interview.

The BASC-2 Self-Report of Personality (SRP; Reynolds & Kamphaus, 2002) is a 131-item self-report measure assesses behavioral and emotional problems among 8 to 11 year-old children. The depression, attention

problems, and hyperactivity subscales were used to evaluate children's internalizing and externalizing symptoms. This measure of thoughts and feelings is valid among 8 to 11 year old children, with adequate internal consistency ($\alpha = .72$ to $\alpha = .86$) and test-retest reliability ($r = .64$ to $r = .82$; Reynolds & Kamphaus, 2004). SRP scores are also correlated with the Minnesota Multiphasic Personality Inventory scales (Flanigan, 1995). For the current study, the Relations with Parents subscale was used assess parent-child relationship quality. Good internal consistency was found for the Relations with Parents subscale ($\alpha = .87$) in the current sample.

The Children's Perception of Interparental Conflict Scale (CPIC; Grych et al. 1992) is a 51-item questionnaire designed to measure children's perceptions of four dimensions of marital conflict and five types of reactions to (or interpretations of) the conflict (0 = false, 1 = sort of true, 2 = true). Dimensions of conflict include: Frequency ("I often see my parents arguing."), Intensity ("When my parents have an argument they yell a lot."), Resolution ("Even after my parents stop arguing they stay mad at each other."), and Content ("My parents often get into arguments about things I do at school."). Reactions to conflict include: Threat ("I get scared when my parents argue."), Coping Efficacy ("I don't know what to do when my parents have arguments."), Self-Blame ("It's usually my fault when my parents argue."), Triangulation ("I feel like I have to take sides when my parents have a disagreement."), and Stability ("My parents have arguments because they are not happy together.")

Test-retest correlations range from .68 to .76 (Grych et al., 1992). Validity is supported in that CPIC scores correlate with parent report of both interparental conflict and child adjustment (Cummings et al. 1994). In the current sample, alphas ranged from .69 to .86 for seven subscales. Internal consistency for the Content and Self-Blame subscales were below acceptable thresholds ($\alpha = .54$ and $.36$, respectively). Therefore, the Content and Self-Blame subscales were dropped from hypothesis testing analyses.

The Conflict Tactics Scale—Child Report (CTS-Form N; Straus, 1979) is a modified 14-item verbal/symbolic and physical aggression scales from the Conflict Tactics Scale—Form N which measures children's report of the frequency with which their mother and her male partner use aggression to resolve conflict, using a 7-point scale, ranging from 0 (never) to 6 (more than 20 times over the past year). Item examples include “Father pushed or shoved mother” and “Father insulted or swore at mother”. Internal consistency for this adapted measure is high ($\alpha = .87$, O'Brien, Bahadur, Gee, Balto, & Erber, 1997). For the present study a total score was obtained by summing all items; higher scores represent more IPV. Internal consistency was adequate ($\alpha = .79$).

Results

Missing Data and Descriptive Statistics

Ninety-eight (~83%) mother-child dyads had complete data, and 20 (~17%) had missing data. Patterns of missing data were assessed using Little's MCAR test, which revealed the data was Missing Completely At Random (X^2

= 5.374, $p > .05$). To make full use of all available data, Expectation Maximization imputation methods were used, which have been shown to be superior to listwise deletion approaches, resulting in less biased estimates (Widaman, 2006). Imputed datasets were used for all analyses. To assess the assumption of normality, q-q plots, and skewness and kurtosis values were used. Maternal report of IPV exposure at age 7 and child report of IPV exposure at age 10 were positively skewed (Skewness = 3.37 and 2.34, respectively) and the square root transformation was conducted. Following transformation, both variables were rendered normally distributed with both skewness values < 1.58 (Tabachnick, & Fidell, 2007).

Means, standard deviations, and correlations for all variables at age 7 and age 10 are presented in Table 1. On average, children were exposed to over 4 ($M = 4.37$, $SD = 5.99$) incidents of IPV during the past year, and mean family income ranged from $M = 2,953$ (age 7; $SD = 2,634$) to $M = 3,216$ (age 10; $SD = 2,808$). Average internalizing and externalizing problem T-scores were well within the normative range, with internalizing $M = 47.22$ (age 7; $SD = 9.28$) and $M = 45.50$ (age 10; $SD = 9.91$), and externalizing $M = 43.77$ (age 7; $SD = 8.38$) and $M = 47.14$ (age 10; $SD = 9.83$). As predicted, exposure to IPV at Age 10 was negatively associated with all assessed appraisals of interparental conflict (i.e., more IPV linked to less adaptive appraisals), with moderate to high correlations ($r = -.39$ to $-.69$). Exposure to IPV was also negatively correlated with income (i.e., more IPV linked to less family income) at age 7 and 10 ($r = .23$, $.29$ respectively) and positively associated

with externalizing problems and maternal depression (i.e., more IPV linked to more externalizing problems and more maternal depression) at the age 10 assessment ($r = .28, .21$ respectively).

Parent-child relationship quality at age 10 was moderately positively associated ($r = .24$ to $.30$) with all assessed appraisals of interparental conflict (i.e., stronger parent-child relationship linked to more adaptive appraisals), except appraisals of Stability ($r = .12$) and Frequency ($r = .11$). Further, parent-child relationship quality was negatively associated with externalizing symptoms at age 10 (i.e., stronger parent-child relationships linked to less externalizing symptoms; $r = .26$).

Maternal depression at age 7 was negatively associated with child appraisals of Frequency, Intensity, Resolution, and Stability ($r = -.22$ to $-.27$) and maternal depression at age 10 was negatively associated with child appraisals of Intensity, Resolution, Threat, Triangulation, and Stability ($r = -.20$ to $-.26$), such that greater maternal depression is linked to less adaptive child appraisals of interparental conflict.

Table 1. Intercorrelations, Means, and Standard Deviations of all variables tested.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. IPV	-																	
2. P/C Relationship Quality	-.29*	-																
3. Frequency	-.54*	.114	-															
4. Intensity	-.69*	.30*	.71*	-														
5. Resolution	-.69*	.24*	.75*	.76*	-													
6. Threat	-.44*	.25*	.56*	.57*	.52*	-												
7. Coping Efficacy	-.39*	.26*	.54*	.67*	.61*	.50*	-											
8. Triangulation	-.65*	.28*	.63*	.84*	.73*	.69*	.55*	-										
9. Stability	-.41*	.12	.68*	.52*	.58*	.49*	.47*	.50*	-									
10. IPV (Age 7)	.25*	-.10	-.10	-.11	-.10	-.14	-.01	.12	-.26*	-								
11. Income (Age 7)	-.23*	.15	.11	.25*	.25*	.10	.08	.24*	.25*	-.18	-							
12. Int. Symptoms (Age 7)	-.03	-.13	-.06	-.08	-.11	-.05	-.04	.06	-.02	.10	-.11	-						
13. Ext. Symptoms (Age 7)	.06	-.11	-.08	-.17	-.12	.13	-.20*	.10	-.08	.27*	-.18*	.68*	-					
14. Maternal Dep. (Age 7)	.15	-.14	-.22*	.23*	-.27*	-.07	-.13	-.03	-.22*	.51*	-.30	.52*	.50*	-				
15. Income (Age 10)	-.29*	.15	.25*	.41*	.41*	.19*	.25*	.39*	.23*	-.06	.76*	-.12	-.22*	-.28*	-			
16. Int. Symptoms (Age 10)	.11	-.17	.02	-.07	-.12	-.14	-.05	-.08	-.01	-.02	-.16	.42*	.24*	.18*	-.13	-		
17. Ext. Symptoms (Age 10)	.28*	-.26*	-.13	-.25*	-.22*	-.22*	-.08	-.22*	-.19*	.13	-.34*	.29*	.35*	.20*	-.303*	.64*	-	
18. Maternal Dep. (Age 10)	.21*	-.12	-.21	-.21*	-.26*	-.20*	-.08	-.25*	-.20*	-.02	-.32*	.02	-.01	.26*	-.32*	.40*	.53*	-
Mean	4.4*	21.91	1.15	1.38	1.49	1.48	1.34*	1.34	1.76	2.75	2853	47.22	43.77	4.96	3216	45.50	47.14	5.96
Standard Deviation	5.99	4.23	.40	.49	.51	.50	.52	.43	.43	7.54	2634	9.28	8.38	7.30	2808	9.91	9.83	6.59

* = $p < .05$; ^a = Mean and SD reported using observed values for ease of interpretation. Correlations were computed using square-root transformed scores.

Data Reduction

A Confirmatory Factor Analysis (CFA) using Maximum Likelihood Estimation was conducted using the Lisrel 8.72 program according to the factor analysis performed by Grych and colleagues (1992) for children ages 9-12. In their model, Frequency, Intensity, and Resolution loaded onto the latent variable “Conflict Properties”, Threat and Coping Efficacy loaded onto “Threat”, and Content and Self-Blame loaded onto the latent variable “Self-Blame”. Due to the low internal consistencies of the Content and Self-Blame scales, a 2-factor model with the “Conflict Properties” and “Threat” latent variables was estimated.

The sample size of 118 meets Bentler and Chou’s (1987) recommendation of 5:1 (5 cases: 1 parameter) for 11 parameters. The CFA was conducted on the covariance matrix, as all CPIC scales share the same metric. The analysis converged after 6 iterations and indicate suboptimal model fit for the two-factor structure of the CPIC, $X^2(17, N = 118) = 82.37, p < 0.05$, RMSEA = .017 (CI = 0.14 - .22), CFI = .90, NNFI = .84. Table 2 includes parameter estimates for the CPIC scales. Individual factor loadings of the CPIC subscales did not load strongly onto the designated latent variables ($B < .41$). The results of the CFA indicate the model is not a good fit for the current sample and do not align with the previously reported factor structure (Grych and Fincham, 1992). Thus, for all subsequent analyses, individual subscale scores were used.

Table 2. *Standardized Loadings (Standard Errors) and Variance Explained for 2-Factor Structure of the CPIC.*

	Conflict Properties Factor		Threat Factor	
	Loadings	R ²	Loadings	R ²
Frequency	.32 (.029)	.72		
Intensity	.39 (.036)	.70		
Resolution	.39 (.036)	.70		
Threats			.40 (.044)	.63
Coping Efficacy			.32 (.038)	.53

Hypothesis Testing

Hypothesis I: Higher levels of IPV exposure are associated with maladaptive cognitive appraisals.

Multiple linear regressions were conducted to test whether IPV predicted each of the cognitive appraisals of interparental conflict. To control for the effects of individual and past contextual factors, gender, family income at age 7, internalizing and externalizing problems at age 7, maternal levels of depression at age 7, and IPV exposure at age 7 were included as covariates in the first step of the model. Child-reported concurrent IPV exposure was included in the second step of the regression. IPV significantly and negatively predicted all cognitive appraisals, with a range of small to large effect sizes ($R^2 = .15 - .49$). Table 3 includes overall model statistics and standardized regression weights of IPV. Among the covariates tested, reports of IPV exposure at age 7 significantly predicted child appraisals of Intensity ($\beta = -.010, p = .023$) and Coping Efficacy ($\beta = -.013, p = .012$) and externalizing

symptoms at age 7 significantly predicted appraisals of Coping Efficacy ($\beta = -.011, p = .011$).

Table 3. Standardized Regression Weights, p-values, and Model Statistics for IPV and CPIC scores with age 7 covariates.

Outcome Variable	F	R²	B	p
Threats	4.84	.166	-.440	<.001
Coping Efficacy	5.07	.174	-.410	<.001
Frequency	7.98	.265	-.564	<.001
Intensity	19.68	.491	-.689	<.001
Resolution	11.95	.361	-.602	<.001
Stability	4.39	.149	-.354	<.001
Triangulation	16.26	.441	-.665	<.001

A second set of multiple linear regressions were conducted to assess the effects of IPV exposure while controlling for concurrent contextual factors. To control for concurrent contextual factors as covariates, gender, family income at age 10, internalizing and externalizing problems at age 10, and maternal levels of depression at age 10 were included in the first step of the model, and concurrent IPV exposure was included in the second step of the regression. IPV significantly and negatively predicted all cognitive appraisals with age 10 covariates with effect sizes ranging from small to large ($R^2 = .14 - .51$). Model statistics and regression weights are presented in Table 4. Among the covariates listed, family income at age 10 significantly predicted child appraisals of Triangulation ($\beta = .21, p < .01$), Intensity ($\beta = .23, p < .01$), and Resolution ($\beta = .25, p < .01$).

Table 4. Standardized Regression Weights, p-values, and Model Statistics for IPV and CPIC scores with age 10 covariates.

Outcome Variable	F	R²	B	p
Threats	5.43	.185	-.416	<.001
Coping Efficacy	4.10	.137	-.369	.001
Frequency	9.06	.293	-.520	<.001
Intensity	21.53	.513	-.633	<.001
Resolution	14.15	.403	-.519	<.001
Stability	4.90	.167	-.360	<.001
Triangulation	16.61	.445	-.585	<.001

Hypothesis II: For children exposed to IPV, stronger Parent-Child

Relationship Quality will be associated with less maladaptive cognitive appraisal use.

a. Additive effect of IPV and Parent-Child Relationship Quality on CPIC scores

Multiple linear regressions were conducted to test whether IPV and parent-child relationship quality predicted each of the cognitive appraisals of interparental conflict. To control for past contextual factors as covariates, gender, family income at age 7, internalizing and externalizing problems at age 7, maternal levels of depression at age 7, and IPV exposure at age 7 were included in the first step of the model, and concurrent IPV exposure and parent-child relationship quality were included in the second step of the regression. Parent-child relationship quality did not significantly predict any child appraisals when the age 7 covariates were included in the model. Table 5 includes overall model statistics and standardized regression weights of IPV

and parent-child relationship quality.

Table 5. *Standardized Regression Weights, p-values, and Model Statistics for IPV, Parent-Child Relationship Quality, and CPIC scores with age 7 covariates.*

Outcome Variable	F	R²	IPV B (p-value)	P/C Rel. B (p-value)
Threats	3.95	.13	-.385 (<.001)	.078 (.395)
Coping Efficacy	5.75	.221	-.369 (.001)	.162 (.064)
Frequency	9.38	.30	-.626 (<.001)	.121 (.144)
Intensity	20.79	.53	-.723 (<.001)	.032 (.646)
Resolution	11.84	.36	-.643 (<.001)	.001 (.995)
Stability	4.92	.190	-.360 (<.001)	.020 (.826)
Triangulation	3.50	.115	-.372 (<.001)	.086 (.237)

A second set of multiple linear regressions were conducted to assess the effects of IPV exposure and parent-child relationship quality while controlling for concurrent contextual factors. To control for concurrent contextual factors as covariates, gender, family income at age 10, internalizing and externalizing problems at age 10, maternal levels of depression at age 10, and lifetime history of IPV exposure were included in the first step of the model, and concurrent IPV exposure and parent-child relationship quality were included in the second step of the regression. Among the appraisals tested, parent-child relationship quality predicted appraisals of Coping Efficacy ($\beta = .16, p < .05$), above and beyond the effects of IPV and the concurrent contextual covariates. Model statistics and regression weights are presented in Table 6.

Table 6. Standardized Regression Weights, p-values, and Model Statistics for IPV, Parent-Child Relationship Quality, and CPIC scores with age 10 covariates.

Outcome Variable			IPV	P/C Rel.
	F	R ²	B (<i>p-value</i>)	B (<i>p-value</i>)
Threats	5.75	.196	-.397 (<.001)	.117 (.191)
Coping Efficacy	5.01	.235	-.362 (<.001)	.177 (.043)
Frequency	8.81	.287	-.545 (<.001)	.032 (.702)
Intensity	16.54	.515	-.653 (<.001)	.103 (.154)
Resolution	11.59	.352	-.552 (<.001)	.062 (.437)
Stability	4.71	.160	-.378 (<.001)	.003 (.977)
Triangulation	14.80	.414	-.603 (<.001)	.097 (.203)

b. Moderation effect of Parent-Child Relationship Quality on IPV

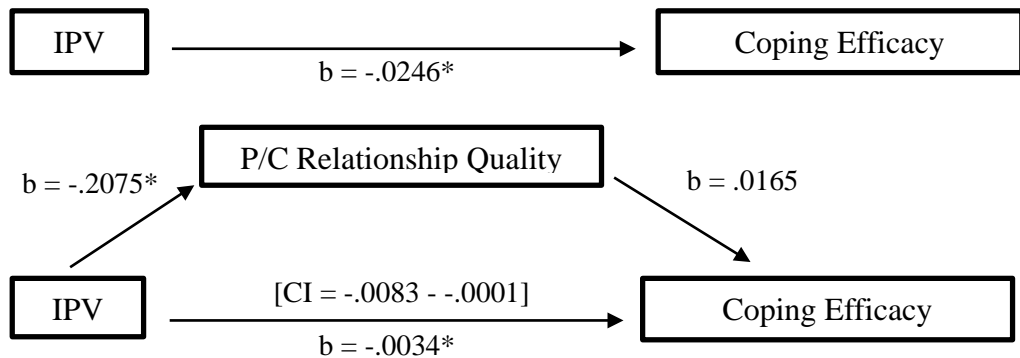
exposure and CPIC scores.

To determine whether parent-child relationship quality moderates the association between IPV exposure and maladaptive appraisals of interparental conflict, the SPSS macro created by Hayes and Matthes (2009) was used. Moderation analyses included individual and contextual factors that emerged as significant predictors of child appraisals as covariates, including family income at age 10 and IPV exposure and externalizing problems at age 7. Models also included the main effect of IPV exposure, the main effect of the parent-child relationship, and the IPV X Parent-Child Relationship interaction term. The interaction terms were not a significant predictor of any of the CPIC subscales. At both low (−1 SD below the mean) and high (+1 SD above the mean) levels of parent-child relationship quality, IPV remained a significant predictor of all child appraisals.

c. Mediation effect of Parent-Child Relationship Quality on IPV exposure and CPIC Scores.

To determine whether Parent-Child Relationship Quality mediates the association between IPV exposure and maladaptive cognitive appraisals, the SPSS PROCESS macro created by Hayes and Matthes (2013) was used. This macro estimates path coefficients in mediator models and generates bootstrap confidence intervals for total and specific direct and indirect effects of X on Y through a mediator variable. This mediation analysis uses the indirect effect coefficient as an indicator of significant mediation, and does not require all paths in the mediation model to be significant (Preacher & Hayes, 2008). Again, the model included family income at age 10 and IPV exposure and externalizing problems at age 7 as covariates. Parent-child relationship quality partially mediated the association between IPV and Coping Efficacy [CI = -.0083 - -.0001]. As figure 1 illustrates, IPV predicted lessened parent-child relationship quality ($\beta = -.21, p = .012$), which in turn predicted more maladaptive appraisals of coping efficacy ($\beta = .02, p = .07$). Comparison of the direct effect and mediation models suggests partial mediation. The direct effect of IPV on coping efficacy is significantly weaker when parent-child relationship quality is included as a mediating variable ($b = -.0034, p = .012$ and $b = -.0246, p = .002$, respectively).

Figure 1. *Indirect Effect of IPV on Coping Efficacy Through Parent-Child Relationship Quality*



Discussion

The current study aimed to examine the effects of IPV exposure and the quality of parent-child relationships on children's cognitive appraisals of interparental conflict. Prior studies consistently find cognitive appraisals to mediate the association between interparental conflict and maladaptive outcomes (i.e., internalizing/externalizing problems; Gerard et al., 2005, Grych & Cardoza-Fernandez, 2001). However, few studies have examined what factors contribute to the use of these appraisals, particularly in a population exposed to more severe levels of interparental conflict, namely IPV. Results of the current study indicate strong negative associations between frequency of IPV exposure and adaptive cognitive appraisals of interparental conflict. Parent-child relationship quality, on the other hand, was positively associated with more adaptive cognitive appraisals. Further, parent-child relationship quality predicted levels of coping efficacy above and beyond the effects of IPV and partially mediated the association between IPV and levels of coping efficacy.

The current study predicted a negative association between IPV exposure and child endorsement of adaptive cognitive appraisals, such as threat, self-blame, and coping efficacy. Results indicate that greater IPV exposure is linked to less adaptive appraisals for all appraisals assessed. These results extend prior findings of interparental conflict and cognitive appraisals to an IPV-exposed sample, and replicate results of other studies examining the

impact of interparental conflict on children's perceptions (e.g. Gerard et al., 2005; Grych & Fincham, 2000).

Recurrent exposure to IPV may alter perceptions of appropriate conflict resolution strategies in interpersonal relationships, including an increased acceptance of violence as a justifiable conflict resolution strategy (O'Keefe, 1997). Child appraisals of the conflict properties (frequency, intensity, resolution, etc.) may provide insight into perceptions of the normalcy of violence as a means of conflict resolution. If children view a violent act as normative or acceptable, they may be less distressed by it and more likely to develop the belief that aggression can be appropriate or effective in close relationships. These perceptions may impact children in the short-term through increases in aggression in their relationships with peers, evidenced by findings that perceptions of aggression as normative mediated the association between interparental conflict and teacher reports of aggressive behavior in elementary school-aged children (Marcus, Lindahl, Malik, 2001). In the long-term, these perceptions may affect later prosocial functioning, such as dating relationships, as beliefs about the justifiability of aggression also have been supported as mediators of partner abuse in adolescent dating relationships, especially for boys (Riggs & O'Leary, 1996).

Parent-child relationship quality was significantly and positively correlated with more adaptive levels of many of the child appraisals of interparental conflict assessed. This is consistent with previous research findings that suggest a strong parent-child relationship may protect children

from maladaptive appraisals of interparental conflict with low-risk samples, and extends the findings by utilizing a higher risk sample, in which about 65% of children have been exposed to IPV.

To disentangle the associations between IPV exposure, parent-child relationship quality, and cognitive appraisals of interparental conflict, several models were tested. To examine the unique predictive ability of parent-child relationship quality on appraisals, an additive model was tested using multiple linear regressions. Experiencing IPV remained a strong predictor of all appraisals assessed when including parent-child relationship and covariates at ages 7 and 10 in the regression. Parent-child relationship quality predicted appraisals of coping efficacy above and beyond the effects of IPV and age 10 covariates (gender, maternal depression, etc.). These findings suggest child perceptions of coping with family violence may be particularly affected by the strength of the parent-child relationship, above and beyond the effects of IPV exposure. A parent's ability to model and teach appropriate coping strategies during and after interparental conflict may be crucial for increasing a child's sense of coping efficacy (Grych & Fincham, 1993), particularly for children who experience IPV, as previous findings show they are less likely to acquire adaptive coping strategies when compared to those who experience normative levels of conflict (Fosco, DeBoard, & Grych, 2007). Few studies have examined coping efficacy as a unique appraisal (as it is often combined with appraisals of threat), and its significant association with parent-child

relationship quality suggest the importance of examining coping efficacy appraisals as an independent outcome for children exposed to IPV.

Next, moderation analyses were conducted to test whether IPV and parent-child relationship quality interact to shape child appraisals of interparental conflict. For all appraisals assessed, no moderation effects were found as IPV was a significant predictor of child appraisals at both high and low levels of parent-child relationship quality. Previous findings of significant moderation for parent-child relationship quality almost exclusively utilize children who have experienced more normative levels of interparental conflict (e.g., DeBoard-Lucas, Fosco, Raynor, & Grych, 2010). Current findings suggest exposure to IPV may be particularly potent in shaping child appraisals, and highlight the importance of implementing interventions aimed at reducing family violence.

Finally, mediation analyses were conducted to examine whether IPV is associated with appraisals of interparental conflict through parent-child relationship quality. Parent-child relationship quality partially mediated the association between IPV and appraisals of coping efficacy. A child's coping strategy repertoire may be acquired through several means reliant upon parent-child relationships. A mother experiencing IPV may have insufficient emotional resources to teach effective coping strategies to their child surrounding IPV experiences. Parents who are responsive and sensitive to their child's distress may also provide coping support during and/or after the conflictual interaction that helps diminish a child's use of maladaptive

appraisals. These findings align with prior studies of children, when told by their parents the conflict was not their fault, maintained less self-blame, greater efficacy regarding their ability to help resolve the conflict, and tendency to endorse appropriate coping strategies (Grych & Fincham, 1993). Further, as mothers experience increasing occurrences of IPV, they may be less likely to model appropriate coping strategies to their children (Hines & Saudino, 2002).

Covariates

To examine and control for individual and contextual factors, covariates were included in the analyses. Family income significantly predicted appraisals of Triangulation, Intensity, and Resolution. Coupled with prior findings of increased rates of IPV and maternal depression in low-income families (e.g. Tjaden & Thoennes, 2000; Lennon, Blome, & English, 2002), the current findings highlight the impact of financial hardship on child appraisals of interparental conflict. Further research on the pathways linking family income, IPV, maternal depression, child appraisals, and child outcomes is warranted to disentangle the directionality and cumulative effects of these domains on child functioning.

Further, externalizing symptoms at age 7 predicted child appraisals of Coping Efficacy at age 10. This finding aligns with prior findings of the potential bidirectionality of children's maladaptive functioning and their appraisals of interparental conflict (e.g. Grych, Harold, & Miles, 2003). However, prior findings have highlighted this effect uniquely for internalizing

symptoms, emphasizing the inclination for children with depressive and anxious symptomatology to view family conflict as more threatening (Grych, Harold, & Miles, 2003). Instead, the current findings of externalizing symptoms predicting appraisals may suggest a different pathway to child symptomatic presentation leading to differences in family violence. Deficits in coping may directly result from externalizing behavior problems, such that children with externalizing behavior may have difficulties in managing emotionally-charged situations in socially adaptive ways. This is evidenced by studies finding greater use of inappropriate coping strategies in attempting to alter negative emotion states by children with externalizing problems as compared to healthy controls (Barret, Rapee, Dadds, & Ryan, 1996; Zeman, Shipman, & Suveg, 2002).

Social and academic problems arising from increases in child externalizing behaviors may also influence levels of family functioning. Externalizing problems are often problematic across settings (school, home, etc.) and necessitate behavioral interventions across settings (e.g. detention, discipline at home, etc.) which may increase family-level stress in regard to differences in parenting style, increased need for school involvement, and other stressors that, similar to financial hardship, may result in greater overall family stress (Mackler et al., 2015). Again, further longitudinal research is warranted to examine the bidirectional association between child internalizing/externalizing symptoms and appraisals of interparental conflict. Specifically, it may be fruitful to examine the effects of parenting stress,

parental disciplinary strategies, the occurrence and characteristics of IPV, and child appraisals to help establish directionality and the effects on the continuity or exacerbation of externalizing behavioral trajectories in children.

Clinical Implications

The above findings can inform clinical efforts. Children's cognitive appraisals of interparental conflict are consistent predictors of later maladaptive behavior, and may highlight a crucial component of therapeutic intervention aimed at reducing maladaptation following exposure to IPV. Although many cognitive-behavioral therapeutic (CBT) approaches target cognitive filters, the Cognitive-Contextual Framework proposed by Grych and Fincham (2002) may provide a more fine-tuned delineation of specific appraisals to be targeted in CBT services for children exposed to IPV. When considering intervention, these findings suggest it is crucial to implement treatments that target both the parents and the children to support family-level dynamics, not only with the goal of decreasing family violence, but also to enhance parent child relationships, which can shape the child's perceptions of the violence characteristics.

Treatments oriented toward family harmony may be particularly beneficial to families with IPV, including trauma-informed interventions (e.g. Child-Parent Psychotherapy, CPP; Lieberman, 2004), cognitive behavioral therapies (e.g. Family Cognitive Behavioral Therapy, FCBT; Maric, van Steensel, & Bögels, 2015) and other modalities oriented toward strengthening parent-child relationships (e.g. Parent-Child Interaction Therapy, PCIT;

Eyberg, 1988). The importance of including both parents and children in intervention efforts is reinforced by findings of parent levels of functioning playing a large role in levels of adaptive coping for children exposed to IPV (e.g. Graham-Bermann, Gruber, Howell, & Girz, 2009), and outcomes for families who have participated in these interventions have included reductions in family violence occurrence, both between parents and violence toward the child (e.g. Chaffin et al., 2004) and reductions in parental stress (Bagner, Sheinkopf, Vohr, & Lester, 2010).

Further, the appraisals assessed in the current study highlight perceptions that may “spill-over” into other domains of functioning. For example, a decreased sense of coping efficacy in regard to experiencing IPV may extend into feelings of coping efficacy in other salient domains, such as academic (Ruus et al., 2007) or prosocial (Prinz, Blechman, & Dumas, 1994) success. Emphasizing these specific appraisal domains (i.e. self-blame, triangulation, stability, coping efficacy, etc.) in interventions provides the opportunity for a comprehensive therapeutic effort in shifting appraisals for the varied cognitive consequences of experiencing IPV.

Limitations and Future Directions

There are some limitations to this study. First, for covariates we relied on maternal reports of IPV, child internalizing and externalizing problems, and depression. Mothers may underrate their IPV experiences and levels of depressive symptomology due to social desirability bias. Further, prior studies finding highly discrepant reporting of a child’s levels of internalizing and

externalizing problems (e.g. Youngstrom, Loeber, & Stouthamer-Loeber, 2000) suggest the use of a multi-informant, multi-method approach. Also, the current study utilized a parent-child relationship measure assessing the child's relationship with both parents. A sample of children exposed to IPV may maintain largely differential relationships with each parent depending on the tendency of the parent to be a victim or perpetrator of violence. This suggests the current reports of parent-child relationship quality may have been "washed out" by a strong relationship with one parent and a poor relationship with another, or children may have responded using one parent as a reference point. Future research should utilize parent-child relationship measures that differentiate between parents, and suggests using a multi-informant, multi-method approach to assessing parent-child relationship quality. It should also be considered that the associations between parent-child relationship quality and child appraisals were assessed at the same time point, which does not allow for inferences of directionality between these variables. This suggests using longitudinal data to examine whether a strong parent-child relationship leads to differences in coping efficacy.

Despite these limitations, the current study has important clinical and research implications. First, few studies have examined child appraisals of interparental conflict in samples exposed to more extreme forms of family violence, namely IPV. The current findings extend prior findings of appraisals of interparental conflict, and highlight the importance of considering both parent-child relationship quality and child appraisals in reducing maladaptive

outcomes in IPV-exposed youth. Clinically, the current study suggests interventions targeting strengthening parent-child relationships may reduce maladaptive outcomes through changes in conflict appraisals, particularly for coping efficacy. Intervention efforts targeting factors that contribute to differences in appraisals may help curtail maladaptive developmental outcomes, given the strong and consistent predictive ability of child appraisals on subsequent internalizing and externalizing problems. Further delineation of factors that increase risk or buffer the effects of IPV on child appraisals may help researchers and clinicians to effectively implement efforts aimed at curtailing maladaptive outcomes in children exposed to family violence.

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