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Child Involvement in Interparental Conflict and Child Adjustment Problems: A Longitudinal Study of Violent Families

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Abstract

This study examined whether child involvement in interparental conflict predicts child externalizing and internalizing problems in violent families. Participants were 119 families (mothers and children) recruited from domestic violence shelters. One child between the ages of 7 and 10 years in each family (50 female, 69 male) completed measures of involvement in their parents' conflicts, externalizing problems, and internalizing problems. Mothers completed measures of child externalizing and internalizing problems, and physical intimate partner violence. Measures were completed at three assessments, spaced 6 months apart. Results indicated that children's involvement in their parents' conflicts was positively associated with child adjustment problems. These associations emerged in between-subjects and within-subjects analyses, and for child externalizing as well as internalizing problems, even after controlling for the influence of physical intimate partner violence. In addition, child involvement in parental conflicts predicted later child reports of externalizing problems, but child reports of externalizing problems did not predict later involvement in parental conflicts. These findings highlight the importance of considering children's involvement in their parents' conflicts in theory and clinical work pertaining to high-conflict families.

Keywords

Intimate Partner Violence; Interparental Conflict; Child Externalizing Problems; Involvement in Parents' Conflicts

In the United States, millions of children live in families in which there has been an incident of physical intimate partner violence (IPV) in the past year (Hamby, Finkelhor, Turner, & Ormrod, 2009; McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). Every day, over 36,000 victims of domestic violence (adults and their dependent children) in the U.S. stay in shelters or other forms of transitional housing, because their homes are not safe due to the violence (National Network to End Domestic Violence, 2011). Exposure to IPV in childhood, as well as exposure to other destructive forms of interparental conflict (IPC)¹,

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¹Intimate partner violence (IPV) and interparental conflict (IPC) are conceptualized as different, but overlapping, constructs. Acts of IPV (e.g., push, slap, hit with a fist) sometimes occur during IPC, but IPC often does not include any IPV.

has consistently been linked to a wide range of child adjustment problems (see Evans, Davies, & DiLillo, 2008; Kitzmann, Gaylord, Holt, & Kenny, 2003; Margolin & Gordis, 2000; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003, for reviews). Prominent theories on the association between IPC and child adjustment problems (Davies & Cummings, 1994; Grych & Fincham, 1990) highlight the possible role of children's involvement in their parents' conflicts—a child's attempts to get his/her parents to stop fighting by doing things such as yelling at them, distracting them, or telling them to stop—in helping to explain this association. The present research examines associations between involvement in IPC and adjustment problems among children (between the ages of 7 and 10 years) in families who had recently departed a domestic violence shelter.

A common thread among theories on child involvement in IPC is that IPC can be so distressing to children that it sometimes prompts them to try to stop it. According to emotional security theory (EST), for example, when children's confidence in the integrity and stability of their parents' relationship is threatened by IPC, children will try to regulate or control their exposure to the IPC, and at times they may do so by intervening to try to stop the conflict (Cummings & Davies, 2010; Davies & Cummings, 1994). Similarly, according to the cognitive-contextual framework, certain appraisals that children make, such as how threatening the IPC is or who is responsible for it, helps determine how children will respond (Fosco, DeBoard, & Grych, 2007; Grych & Fincham, 1990). Self-blame appraisals, such as holding themselves responsible for causing the IPC or for stopping it, are thought to prompt children to intervene in their parents' conflicts (Grych, 1998; Grych & Fincham, 1993).

Involvement in IPC is theorized to increase children's risk for externalizing and internalizing problems through a variety of processes. For example, intervening can put children in the middle of intense and hostile parental interactions. Contagion theories and related research suggest that children who are repeatedly exposed to these situations may take on their parents' angry, aggressive feelings and behaviors themselves (Cummings & Cummings, 1988; Cummings, Goeke-Morey, & Papp, 2004). In addition, involvement in IPC sometimes includes aggressive behavior, such as yelling at or arguing with a parent to attempt to stop the conflict (Shelton & Harold, 2008), which sometimes works to stop it (Jenkins, Smith, & Graham, 1989). Through negative reinforcement, this process may increase the probability that the child will continue to aggressively intervene in IPC, and it may contribute to the development of a more generalized aggressive response pattern (Davis, Hops, Alpert, & Sheeber, 1998; Emery & Kitzmann, 1995; Patterson, 1982). On the other hand, children who perceive their involvement to be ineffectual may experience anxiety or depressive symptoms (O'Brien, Margolin, & John, 1995).

Empirical research documenting links between children's or adolescent's involvement in IPC (or variables that include child involvement) and their externalizing and internalizing problems suggests that the association is robust (e.g., Davies, Forman, Rasi, & Stevens, 2002; Davis et al., 1998; Jenkins et al., 1989; Johnston, Gonzalez, & Campbell, 1987; Kerig, 1996; O'Brien, Bahadur, Gee, Balto, & Erber, 1997; O'Brien et al., 1995; Shelton & Harold, 2008). The association has been found for boys as well as girls, for school-aged children as well as adolescents (Rhoades, 2008), and in general community samples (e.g., school

samples; Davies et al., 2002) as well as in the few clinical samples in which it has been examined (e.g., families disputing custody arrangements post-separation or divorce in Johnston et al., 1987). The association between involvement in IPC and adjustment problems also emerges even after accounting for effects of the IPC itself on adjustment problems (Davis et al., 1998; Jenkins et al., 1989; O'Brien et al., 1995; Shelton & Harold, 2008), and it holds cross-sectionally as well as prospectively (Davis et al., 1998; Johnston et al., 1987). For example, adolescents' aggressive responses to their parents' conflict in a laboratory interaction predicted scores on a general measure of adolescent aggression 13 months later, even after accounting for baseline levels of adolescent aggression (Davis et al., 1998).

Although there is compelling evidence of a relation between involvement in IPC and adjustment problems, almost all of the studies in this area of research have been conducted with general community samples, and most have focused on adolescents. Thus, it is not clear whether the relation exists among children (10 years and under) who have been exposed to very high levels of destructive IPC, such as children in families seeking refuge at domestic violence shelters. It might be argued that understanding associations between youth involvement in IPC and adjustment problems is especially important for younger age groups (e.g., children under 10 years). Specifically, children's responses to IPC may change little after age 10 (Cummings, Ballard, & El-Sheikh, 1991); thus a better understanding of these associations with younger age groups may offer insight into a potentially problematic family process, perhaps before it becomes entrenched (Holt, Buckley, & Whelan, 2008). It might also be argued that children's involvement in IPC (i.e., for children 10 years and under) may not be associated with their adjustment problems within extremely violent families. For example, IPV increases risk for child adjustment problems, above and beyond other forms of destructive IPC (e.g., Fantuzzo et al., 1991; Jouriles, Murphy, & O'Leary, 1989; McDonald, Jouriles, Norwood, Ware, & Ezell, 2000). It thus seems plausible that the effects of IPV itself on child adjustment may override the effects of the child's involvement in the conflict. This might be especially true when extreme IPV has occurred, such as beatings and use of weapons (Jouriles et al., 1998). Furthermore, although there are data suggesting that adolescents intervene in violent conflicts that involve their mothers (e.g., Goldblatt & Eisikovits, 2005), there is some indication in the literature that children are less likely to do so (Fosco et al., 2007), although it does happen (Garcia O'Hearn, Margolin, & John, 1997; Holden, 2003). It is not clear whether relatively infrequent involvement in IPC increases risk for problematic child outcomes. Examining the association between children's involvement in IPC and child adjustment problems within violent families, after accounting for IPV, will help document the importance of child involvement in IPC within such families.

On the other hand, the converse can also be argued—that children's involvement in IPC might be especially detrimental within violent families. Specifically, some of the family dynamics in domestic-violence-shelter samples (Fosco et al., 2007; Jaffe, Wolfe, & Campbell, 2012) may make involvement in IPC in those samples especially detrimental to children, as compared with children in general community samples, or even adolescents within domestic violence shelter samples. For example, reviews of the literature indicate that there is a strong association between parental IPV and parents' physical aggression toward children (Appel & Holden, 1998; Jouriles, McDonald, Slep, Heyman, & Garrido, 2008),

especially male children (Jouriles & LeCompte, 1991; Jouriles & Norwood, 1995). In addition, the prevalence of parental aggression toward youth is much higher for children under 10 years, than for adolescents (Straus & Stewart, 1999), and such aggression sometimes occurs *during* violent interparental conflicts (Holden, 2003; Mbilinyi, Edleson, Hagemaster, & Beeman, 2007). Thus, by intervening in the conflicts of their physically violent parents, children literally put themselves in harm's way, which may pose a greater risk for child adjustment problems. In short, the added risks associated with child involvement in IPC in violent families may increase stress for children and generate more problematic child outcomes.

It is also unclear from the empirical literature whether the direction of effects between involvement in IPC and child adjustment problems is consistent with theoretical propositions (Rhoades, 2008). Among the few longitudinal studies on this topic, key variables (child adjustment, involvement in parents' conflicts) have often not been measured at multiple time points. Thus, conclusions about the direction of effects cannot yet be made with confidence—it is possible that children with adjustment problems tend to involve themselves in IPC, rather than vice versa. In fact, some self-report measures of involvement include items such as “I argue with one or both of [my parents],” and “I tell one of my parents that he or she is wrong” (Shelton & Harold, 2008), which could be construed to reflect aggressive or oppositional behavior. It seems reasonable to assume that children with greater levels of aggressive or oppositional behavior would respond to IPC in much the same way that they respond to other interpersonal conflicts or frustrations—with aggressive or oppositional behavior (Cummings et al., 2004).

Using a three-wave, longitudinal design, the present research examines involvement in IPC and child adjustment problems in a sample of families recruited from domestic violence shelters. We hypothesize that involvement in IPC will be positively associated with child externalizing and internalizing problems, in cross-sectional as well as prospective analyses, after controlling for IPV. We expect the relation to emerge both between subjects and within subjects. Although involvement in IPC is expected to predict child adjustment problems prospectively, we also examine the possibility that child adjustment problems predict involvement in IPC prospectively. Because boys' and girls' involvement in IPC may be differentially associated with important family processes (e.g., parental aggression toward children), we examine child sex as a potential moderator of the relation between involvement in IPC and child adjustment problems. Finally, whether a mother resumes her relationship with a violent partner after departing a domestic violence shelter may affect the level of IPV that occurs, as well as other family factors that bear on child adjustment. Thus we also examine mothers' return to her partner as an additional potential moderator of the association.

Methods

Participants

Mothers residing at a domestic violence shelter with at least one child between the ages of 7–10 years were invited to participate in a screening assessment. Eligible families were those in which: a) the mother had lived with a male intimate partner for at least 5 of the 6

months prior to the initial assessment, b) at least one act of IPV had occurred within the past 6 months, c) the child had never received a diagnosis of mental retardation or developmental delay, and d) the mother and child spoke English well enough to participate in an interview conducted in English. If a family had more than one eligible child, the oldest eligible child was invited to participate.

Families were recruited while in the shelter. Mothers were informed that participation would commence once the family exited the shelter and that they would receive financial compensation for their participation. There were 119 mothers and children who completed a baseline assessment. On average, the children (50 female, 69 male) were 8.5 ($SD = 1.13$) years old and mothers were 33.3 ($SD = 8.26$) years old. The sample was 26.2% White, 42.0% Black, 15.1% Hispanic and 16.8% multiethnic or “other”. Mothers had an average of 12.1 ($SD = 2.32$) years of education, and the median monthly family income was \$1,203 ($SD = \853.8), with 89.1% of families reporting an annual income of less than \$30,000, and 100% reporting an annual income of less than \$50,000. Prior to shelter residence, 61.3% of the mothers were married to their violent partner, 20.2% were cohabiting, 2.5% were dating but not cohabiting, and 16.0% of mothers reported their relationship status as “other.” Fifty percent of the partners were the biological father of the participating child.

There were three assessment points, spaced 6 months apart. Of the 119 families who participated at baseline, 99 participated in the 6-month assessment (83.2% retention) and 92 participated in the 12-month assessment (77.3% retention). There were no differences between families that missed one or more assessments and those who missed none on baseline levels of all the study substantive and demographic variables. A number of mothers returned to live with their violent partner at some point after shelter departure: 21.8% returned to the partner at baseline (immediately after shelter departure), 29.6% were living with the partner 6 months after shelter departure, and 39.1% at 12 months after shelter departure.

Assessment Procedures

All procedures had received Institutional Review Board approval. Mothers and children were assessed in separate rooms, and measures were read aloud to children and to mothers by trained interview staff. Research staff spent time playing games with the children to build rapport and engage them in the assessment process before beginning the assessments.

Measures

Involvement in IPC—At each assessment, children reported how frequently they engaged in each of four behaviors when their mom and dad (or mom and her partner) “argue or fight”. The behaviors were: Yell at them; do something to get their attention; tell them to stop fighting; try to make them stop fighting. The frequency of each behavior was reported on a four-point response scale (0 - Never, 1 - Once in a while, 2 - Sometimes, 3 - All the time). The score for the measure was the mean across the four items (range 0–3). Coefficient alpha was .78, .85, and .83 at baseline, 6 months, and 12 months, respectively.

Child externalizing and internalizing problems—At each assessment, mothers completed the Child Behavior Checklist (CBCL; Achenbach, 1991), a widely used measure of child externalizing and internalizing problems, with well-established validity and reliability. Coefficient alpha was .77, .78, and .76 for externalizing problems and .87, .88, and .85 for internalizing problems at baseline, 6 months, and 12 months, respectively. T-scores were used in analyses.

Children reported their externalizing problems on the Children's Disruptive Behavior Scale (CDBS) (McDonald & Jouriles, 1999) at each assessment. The CDBS is a 9-item scale with a three-point response format (0 - Never, 1 - Sometimes, 2 - Often), and it correlates with the CBCL externalizing scale (McDonald & Grych, 2006; Skopp, McDonald, Jouriles, & Rosenfield, 2007). Sample items include: "Do other people think that you don't do what you are told or don't follow the rules?" "Do other people think you break other people's things on purpose?" Coefficient alpha for the CDBS was .89, .88, and .90 at baseline, 6 months, and 12 months, respectively.

Children reported their anxiety symptoms on the anxiety subscale of the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), a 28-item subscale with a Yes/No (0 - No, 1 - Yes) response format. Coefficient alpha in the present sample was .80, .81, and .83 at baseline, 6 months, and 12 months, respectively.

Physical intimate partner violence—At each assessment, mothers completed the 12-item physical assault subscale of the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy & Sugarman, 1996), indicating how often she and her partner had each engaged in the 12 acts of IPV during the past 6 months. Responses were made on a 10-point response scale ranging from: 0 - Not in the past 6 months to 9 - Every day. Items were summed to obtain an overall measure of IPV for the family. The CTS2 and its predecessor, the CTS (Straus, 1979), are the most widely used measures of violence in research on IPV (Teten et al., 2010). Coefficient alpha for the CTS2 was .91, .91, and .92 at baseline, 6 months, and 12 months, respectively.

Data Analysis

The data were analyzed using multilevel models (MLM). MLM includes all subjects regardless of missing data on the outcome variable, thereby increasing power and generalizability, and it allows nesting of repeated assessments within subjects. We employed maximum likelihood estimation, and used the Satterthwaite approximation to calculate degrees of freedom for significance tests for the regression coefficients.

Between-subjects and within-subjects effects of involvement in IPC on child adjustment problems: the "concurrent" model—We used the following formula to disaggregate the between- and within-subjects effects of involvement in IPC on children's adjustment problems (Hedeker & Gibbons, 2006):

$$X_{ij} = X_{\text{mean}_i} + X_{\text{deviations}_{ij}}$$

where X_{ij} is the value of a predictor X for individual i at time point j , X_{mean_i} is the mean of X for individual i over all the time points, and $X_{\text{deviations}_{ij}}$ is the difference between the value of X_{ij} at assessment j and the mean of X across all assessments for individual i . This formula parses each assessment of X into a between-subjects (X_{mean_i} , the mean level of X for subject i) and a within-subjects component ($X_{\text{deviations}_{ij}}$, the deviations of X at each assessment from its average across the assessments). $X_{\text{deviations}_{ij}}$ over time are modeled as a time-varying predictor of outcome in level 1 of the MLM, with each child's deviation from his/her average predicting that child's concurrent child adjustment problems. On the other hand, X_{mean_i} is used as an individual level variable, modeled in level 2 of the MLM. The "concurrent" MLM model for the relation between child involvement in IPC and concurrent child adjustment problems was:

$$\begin{aligned}\text{Level 1: } & \text{ChildAdjustment}_{ij} = \beta_{0i} + \beta_{1i} * \text{ChildInvolmentDeviations}_{ij} + \varepsilon_{ij} \\ \text{Level 2: } & \beta_{0i} = \gamma_{00} + \gamma_{01} * \text{ChildInvolvementMean}_i + \mu_{0i} \\ & \beta_{1i} = \gamma_{10} + \mu_{1i}\end{aligned}$$

Because level-1 involvement in IPC and child adjustment problems are measured at each assessment, level 1 models the relation between child adjustment and deviations in child involvement within subjects, over time. Level 2 effectively models the relation between the average level of child involvement and the average level of child adjustment problems between subjects. Since the relation between involvement in IPC and child adjustment problems might merely be due to their mutual relation with IPV, we disaggregated the between- and within-subjects effects of IPV (following Hedeker & Gibbons, 2006, as above) and added both the deviations_{ij} and mean_i of IPV to our model in order to control for the violence. Figure 1 illustrates this model. Child sex and age were included as additional level-2 control variables (covariates) in all initial analyses, but each was dropped from an analysis if it was not a statistically significant predictor.

In exploratory analyses, we also investigated whether child sex and/or mother returning to live with her previous partner moderated the relations between child involvement and child outcomes. Child sex was a level-2 moderator. However, mothers' return to a violent partner can vary across time. For example, she might return, only to leave again at a later point. Thus, whether the mother had returned to live with her previous partner was a level-1 moderator. In these exploratory analyses, the hypothesized moderator variable and its interaction with all of the other predictors in the model were added to each analysis.

Direction of the longitudinal relations between involvement in IPC and child adjustment problems—Our multiple assessments over time allowed us to examine the cross-lag relations between involvement in IPC and adjustment problems over time, thus providing information about the prospective relations between these variables. The cross-lag analysis included only the relations among the deviations in these variables over time, controlling for deviations in IPV. Our cross-lag MLM analysis modeled current child adjustment problems as a function of the previous level of involvement in IPC and controlling for the previous levels of child adjustment problems and IPV, as shown in Figure 2 and in our MLM model (our "cross-lag" analytic model):

$$\text{ChildAdjustmentDeviations}_{ij} = b_{0i} + b_{1i} * \text{ChildInvolvementDeviations}_{ij-1} + b_{2i} * \text{ChildAdjustmentDeviations}_{ij-1} + b_{3i} * \text{ViolenceDeviations}_{ij-1} + \varepsilon_{ij}$$

In this model, the predictors of child adjustment at assessment j were their levels measured at the previous assessment, $j-1$. Thus, this model examines the within-subject, cross-lag relation between the variables over time.

To examine the possibility that child involvement in IPC follows from child adjustment problems, rather than the opposite, we repeated the cross-lag analysis, reversing the role (i.e., predictor vs. outcome) of child adjustment and involvement in IPC in the models.

Results

Descriptive Analyses

Means and standard deviations for the study variables at each assessment are displayed in Table 1. Mixed-effects ANOVA analyses, using the Bonferroni correction for multiple comparisons, showed that the frequency of IPV decreased after the family departed the shelter, with baseline levels (i.e., which spanned the 6-month period prior to shelter entry) considerably higher than those at both subsequent assessments ($ps < .001$). At baseline, 56.3% of mothers reported having been beaten up, and 7.6% reported victimization that involved either a knife or a gun. Child and mother reports of child externalizing and internalizing problems were higher at baseline than at both subsequent assessments, but there were no mean differences in either type of child problems across the 6- and 12-month assessments except for mothers' reports of child internalizing problems (i.e., mothers reported more child internalizing problems at the 6-month assessment than the 12-month assessment; $p < .05$). Child involvement in IPC scores at baseline and 6 months ($p = .18$) did not differ, but were greater at baseline than at 12 months ($p = .01$). It should be kept in mind that involvement in IPC reflects how often the child was involved "when their parents were arguing or fighting"; it is not a count of the absolute number of times a child intervened. Correlations among the study variables at each assessment are displayed in Table 2².

Involvement in IPC as a predictor of child adjustment problems

The "concurrent" model examining relations between involvement in IPC and child adjustment problems included the following predictors: mean child involvement in IPC across the three assessments (a between-subjects, level-2 predictor), deviations (at each time point) of children's involvement in IPC from their mean level of involvement in IPC (a

²Scores for all but two of the study measures (children's report of their externalizing problems and IPV) were normally distributed. Specifically, children's report of externalizing problems was positively skewed (skewness = 1.12), as was our control variable, IPV (skewness = 1.89). In addition, examining the histograms of each variable indicated that none of the distributions had outliers (i.e., no raw scores greater than three SDs from the mean), with the exception of IPV, which had one outlier. As a result, in the statistics reported in this paper, we used robust standard errors to determine the significance of all of our regression coefficients (they are robust to violations of multivariate normality including the presence of skewness [Singer & Willett, 2003]). To be conservative, we performed additional analyses in which we log-transformed the scores on the two skewed measures. The log transformations reduced skewness below .256, and the outlier on IPV was no longer an outlier when the scale was transformed. We then repeated all of the analyses from the beginning, including child sex and age as covariates (but dropping each if it was not significant). The results of the analyses using the log-transformed variables mirrored those of the analyses using the raw variables.

within-subjects, level-1, time varying covariate), mean level of IPV over the three assessments (between-subjects, level-2), and deviations (at each assessment) from the mean level of IPV (see Figure 1). Results indicated that children with greater involvement in IPC (i.e., those with a higher mean level of involvement across the three assessments) had greater adjustment problems on three of the four measures of child adjustment: mothers' reports of child externalizing problems, $b = 2.43$, $t(122) = 2.00$, $p = .05$, and children's reports of their externalizing problems, $b = 1.23$, $t(120) = 2.01$, $p < .05$, and internalizing problems, $b = 1.24$, $t(118) = 2.02$, $p < .05$, across the three assessments. Deviations (at each assessment) in the level of child involvement over time were related to child adjustment over time (a within-subjects relation) for three of the four child adjustment measures: involvement was positively related to mothers' reports of child externalizing problems, $b = 1.50$, $t(179) = 2.04$, $p < .05$, and internalizing problems, $b = 1.66$, $t(170) = 2.06$, $p < .05$, and children's self-reports of externalizing problems, $b = 1.64$, $t(177) = 2.62$, $p = .01$.

Since these analyses included the frequency of IPV (mean and deviations) as control variables, they also tested the relation between IPV and child adjustment problems. Mean level of IPV (a between-subjects, level-2 variable) was positively associated with mothers' reports of child externalizing and internalizing problems, $b = .17$, $t(128) = 1.94$, $p = .05$, and $b = .18$, $t(132) = 2.62$, $p = .01$, respectively, and deviations (at each time point) in IPV (from mean levels) were positively associated with mothers' reports of child externalizing and internalizing problems, and child self-reports of internalizing problems, $b = .09$, $t(167) = 3.46$, $p = .001$, $b = .17$, $t(180) = 5.89$, $p < .001$, $b = .07$, $t(181) = 3.34$, $p = .001$, over time (within-subjects).

Prospective relations between children's involvement in IPC and child adjustment

Involvement in IPC as a predictor of later child adjustment—These analyses examined whether deviations in involvement in IPC, defined as the difference in involvement at each assessment from the child's average level of involvement across the three assessments, are associated with corresponding deviations in adjustment problems at the subsequent assessment point. Prior deviations in IPV and child adjustment problems were controlled in these analyses (see Figure 2). Results showed that the extent of deviation from a child's own average level of involvement at one assessment was associated with a corresponding deviation from that child's average in child-reported externalizing problems at the subsequent assessment, $b = 1.20$, $t(175) = 2.24$, $p < .05$. As in the previous analysis, the lagged relations between deviations in IPV and deviations in child adjustment were also tested, since prior deviations in IPV were included as control variables. No associations between prior IPV deviations and later child adjustment problems emerged ($ps > .55$).

Child adjustment as a predictor of later involvement in IPC—We repeated the previous analysis, reversing the roles of child adjustment and children's involvement in IPC in the models, to test whether children with greater levels of adjustment problems later involved themselves more in IPC, controlling for prior involvement in their parents' conflicts. No associations between child adjustment problems and later involvement in IPC emerged for any of the four child adjustment measures ($ps > .25$).

Exploratory analyses

We repeated the analyses reported above twice, once examining child sex and once examining mothers' return to her violent partner as potential moderators of the relations between children's involvement in IPC and child adjustment problems. No moderating effects emerged. We also explored the bivariate association between children's involvement in IPC and whether or not the mother was living with the previous partner (the one prior to shelter entry) or a new partner. Children's involvement in IPC was not related to whether or not the mother had returned to her previous partner at any of the three assessments ($r_s = .12$, $p_s = .20$).

Discussion

In families with recent IPV, greater child involvement in IPC was associated with greater child adjustment problems. The association emerged for child externalizing as well as internalizing problems, between-subjects as well as within-subjects, and after controlling for IPV. Furthermore, concurrent associations between involvement in IPC and child externalizing problems emerged for both mother and child reports of these problems, with more consistent relations between involvement and externalizing problems than between involvement and internalizing problems. The magnitude of the relations between children's involvement in IPC and child adjustment problems was generally modest, but commensurate with those observed in non-clinical samples (e.g., Davies et al., 2002; Jenkins et al., 1989; O'Brien et al., 1997). Results of our cross-lag analyses, while sparse, indicate that involvement in IPC increases risk for later child-reported externalizing problems, but not vice-versa. Given that many children reported intervening in IPC only occasionally or sometimes, it appears that involvement does not have to be frequent to be problematic.

Perhaps our most important finding is that involvement in IPC predicts child reports of externalizing problems prospectively. This is generally consistent with Davis and colleagues' (1998) finding that involvement in IPC during a lab interaction predicted adolescent aggression 13 months later. Furthermore, both Davis et al. and the present study accounted for baseline child adjustment problems and IPC (IPV in the present study). This replication is especially noteworthy because of the differences in the samples and methods across studies (adolescents versus school-aged children, community sample vs. domestic violence shelter sample, and lab observation vs. self-report of involvement in IPC). It might be argued that *because* of such differences, their convergent findings offer persuasive evidence that involvement in IPC increases the risk for subsequent externalizing problems. However, in the present study this was true for children's, but not mothers' reports of externalizing problems. This might be because (1) shared method variance partially inflated the association between children's reports of involvement in IPC and their reports of externalizing problems, or (2) the nature of the externalizing problems assessed by the child-report measure was more closely associated with involvement in IPC than the broader, parent-report measure of child externalizing problems. It should be reiterated, however, that the bivariate correlations between the child reports of involvement and externalizing problems were modest in magnitude and most were not statistically significant (Table 2), which suggests that method variance probably does not account for a substantial portion of

the variance in the prospective relation between the two variables. With respect to the second reason, it is noteworthy that mother and child reports of child externalizing problems correlated with one another at only one of the three assessment points, which suggests that different aspects of externalizing problems were perhaps assessed by mother and child reports. This is consistent with the broader literature on child psychopathology, in which correlations between parent and child reports of adjustment problems typically are low, and often fail to reach statistical significance (Achenbach, McConaughy, & Howell, 1987; Loeber, Green, Lahey, & Stouthamer-Loeber, 1989).

This research was not designed to explain why involvement in IPC might lead to child externalizing problems, but several hypotheses can be offered. Learning theories suggest that if involvement in IPC is successful, from the child's perspective, then the behavior is reinforced and thus more likely to be repeated (Patterson, 1982). Neither children's judgments about the effects of their involvement nor the outcomes of those behaviors (e.g., whether or not the conflict stopped) were assessed in this study. The idea that involvement in IPC may be maintained by principles of reinforcement is potentially important, because the measure of children's involvement included items that involve aggressive or disruptive behavior (e.g., Yell at them when they argue or fight). Investigators have demonstrated in cross-sectional research that aggressive behavior by children in response to IPC is associated with broader patterns of externalizing problems (Cummings et al., 2004).

Other explanations for how involvement in IPC may lead to externalizing problems could also be offered. Contagion theories, for example, suggest that children who intervene in IPC may experience their parents' angry, aggressive feelings and exhibit aggressive behaviors themselves (e.g., Cummings & Cummings, 1988; Cummings et al., 2004). It is also quite possible that involvement in IPC is a proxy for or part of broader family processes that contribute to the development of child externalizing problems. For example, emotional security theory (Cummings & Davies, 2010; Davies & Cummings, 1994) posits that emotional insecurity about the parents' relationship can be inferred from several observable child behaviors, including attempts to stop IPC (Davies et al., 2002), and that this insecurity can contribute to the development of child problems. Similarly, advances in the formulation of emotional security theory suggest that involvement in IPC might reflect a broader dominant response pattern to IPC, which is hypothesized to lead to more generalized conduct-disordered child behavior (Davies & Forman, 2002; Davies & Sturge-Apple, 2007). Family systems theory suggests that involvement in IPC may reflect family processes (e.g., parentification, triangulation, the formation of a cross-generational alliances) that contribute to the development of child adjustment problems (Johnston et al., 1987; Kerig, 2005; Peris et al., 2008).

The findings in this study, together with those of other studies on this topic, have implications for clinical work with families. In highly conflictual families, clinicians are well advised to attempt to reduce destructive IPC, and particularly children's exposure to it. However, given the prevalence and frequency of IPV and other destructive forms of IPC (Hamby et al., 2009; McDonald et al., 2006), it seems inevitable that children will sometimes observe it. In those cases, helping parents to develop strategies for curtailing children's involvement in IPC seems advisable. It is noteworthy that among the clinical

interventions that have been empirically demonstrated to be effective in helping children who have been exposed to IPV, most address parenting (e.g., Graham-Bermann, Lynch, Banyard, Devoe, & Halabu, 2007; Jouriles et al., 2001; Jouriles et al., 2009). Providing information about the adverse effects of children's involvement in IPC and teaching effective strategies for preventing its occurrence may be useful enhancements to such services, as well to other interventions that target violent couples with children.

Several limitations of this study are worth noting. First, involvement in IPC was measured only with children's self-reports, the accuracy of which may have been affected by a number of variables, including difficulties in recall, characteristics of the measure itself (e.g., the absence of a time frame for assessing when involvement occurred), or by social desirability influences (e.g. children may have been reluctant to admit yelling at a parent or, conversely, eager to portray themselves as someone who tries to stop family conflict). An observational measure of children's involvement in IPC would have increased the rigor of the present study's measurement strategy. Second, we did not collect information on the reasons for children's involvement in IPC, which would be useful for understanding why and how involvement and child adjustment are related, and how to address this issue clinically. For example, children who blame themselves for IPC may be more inclined to intervene (Grych, 1998; Grych & Fincham, 1993), and may fare worse as a result, compared to children who do not blame themselves. In addition, although the longitudinal design in this study helps elucidate the temporal nature of the association between involvement in IPC and child externalizing problems, causal conclusions cannot be made on the basis of this study. Finally, the families in this research had experienced extreme levels of IPV, and we followed these families during their transition from living in a domestic violence shelter. Although some of our findings replicate those of other investigators, it not clear how generalizable our results are to other populations.

This study nonetheless contributes to knowledge on this topic in important ways, both methodologically and substantively. The three-wave longitudinal design, measurement of key variables at all time points, and consideration of between- and within-subjects effects of children's involvement in IPC on child adjustment are strengths that researchers in this area have consistently called for (e.g. Jenkins et al., 1989; O'Brien et al., 1995; Shelton & Harold, 2008). They allow for a more nuanced analysis of the relations in question, and can help bolster conclusions regarding the nature and direction of effects over time. Substantively, this study provides empirical knowledge on involvement in IPC and its link to child adjustment among a population of children who are exposed to very frequent and severe intimate partner violence. Our findings indicate that involvement in IPC has effects on child adjustment over and above those of IPV, that even relatively low levels of involvement in IPC can be detrimental to child adjustment, and that fluctuations in involvement and child adjustment covary. This points to involvement in IPC as a potentially important target for future research.

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Figure 1.

Concurrent Model: Examining child involvement in IPC as a predictor of child adjustment problems. Note: t_n is the score for a given measure reflecting the difference of the individual's score at time n from the mean of that individual's score across all three time points.

Figure 2.

Cross-lag Model: Examining the direction of effects of child involvement on child adjustment problems over time, and vice versa. Note: t_n is the score for a given measure reflecting the difference of the individual's score at time n from the mean of that individual's score across all three time points.

Table 1

Means and standard deviations of the study variables at each assessment.

	Baseline (N = 119)	6 months (N = 99)	12 months (N = 92)
Variable	M (SD)	M (SD)	M (SD)
Involvement in IPC	1.35 (0.95) ^a	1.16 (0.98) ^{ab}	1.04 (0.90) ^b
Physical intimate partner violence	23.90 (19.59) ^a	4.90 (10.44) ^b	4.14 (9.29) ^b
Mother-report externalizing	60.87 (12.08) ^a	57.81 (12.49) ^b	56.87 (11.95) ^b
Mother-report internalizing	60.99 (10.42) ^a	55.62 (9.61) ^b	53.98 (9.45) ^c
Child-report externalizing	8.14 (7.48) ^a	6.15 (6.10) ^b	5.72 (6.50) ^b
Child-report internalizing	18.61 (6.29) ^a	14.67 (6.25) ^b	13.53 (6.49) ^b

Note. Superscripts within the same row that differ from one another reflect mean differences ($p < .05$).

Table 2

Correlations among the study variables within and across assessments.

Variables	Time 1						Time 2						Time 3				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Time 1																	
1. CI-IPC	--																
2. CTS2	.18 [†]	--															
3. CBCL Ext.	.16 [†]	.12	--														
4. CBCL Int.	-.07	.23 ^{**}	.63 ^{**}	--													
5. CDBS (Ext.)	.13	-.10	.15 [†]	.07	--												
6. RCMAS (Int.)	.14	.10	.06	.04	.23 ^{**}	--											
Time 2																	
7. CI-IPC	.61 ^{**}	.13	.22 [*]	.07	.22 [*]	.13	--										
8. CTS2	.04	.27 ^{**}	.09	.03	-.08	-.09	.06	--									
9. CBCL Ext.	.15	.13	.79 ^{**}	.46 ^{**}	.13	-.02	.29 ^{**}	.20 [*]	--								
10. CBCL Int.	.04	.12	.43 ^{**}	.65 ^{**}	.06	-.06	.19 [†]	.11	.62 ^{**}	--							
11. CDBS (Ext.)	.13	.04	.07	.02	.44 ^{**}	.23 [*]	.20 [†]	.01	.13	.11	--						
12. RCMAS (Int.)	.17 [†]	.09	.14	.13	.13	.56 ^{**}	.25 ^{**}	-.06	.09	.06	.37 ^{**}	--					
Time 3																	
13. CI-IPC	.59 ^{**}	.11	.28 ^{**}	.16	.16	.12	.58 ^{**}	.10	.31 ^{**}	.26 [*]	.05	.15	--				
14. CTS2	.19 [†]	.29 ^{**}	.28 ^{**}	.15	.08	.04	.18	.27 ^{**}	.20 [†]	.07	.15	.10	.08	--			
15. CBCL Ext.	.08	.13	.79 ^{**}	.56 ^{**}	.14	.02	.17	.13	.80 ^{**}	.52 ^{**}	.14	.15	.22 [*]	.26 [*]	--		
16. CBCL Int.	.08	.11	.48 ^{**}	.60 ^{**}	.02	-.05	.08	.00	.51 ^{**}	.63 ^{**}	.14	.16	.18 [†]	.15	.70 ^{**}	--	
17. CDBS (Ext.)	.00	.21 [†]	.27 ^{**}	.19 [†]	.42 ^{**}	.27 ^{**}	-.02	-.03	.24 [*]	.21 [†]	.51 ^{**}	.17	.25 [*]	.0	.30 ^{**}	.20 [†]	--
18. RCMAS (Int.)	-.01	.06	.05	.07	.07	.52 ^{**}	.07	-.05	.04	.03	.33 ^{**}	.63 ^{**}	.01	-.01	.04	-.02	.35 ^{**}

Note. CI-IPC = Children's Involvement in Interparental Conflict; CTS2 = Revised Conflict Tactics Scale (physical intimate partner violence); CBCL Ext. = Child Behavior Checklist externalizing problems subscale; CBCL Int. = Child

Behavior Checklist internalizing problems subscale; CDBS = Children's Disruptive Behavior Scale; RCMAS = Revised Child Manifest Anxiety Scale

p .10,
* p .05,
** p .01