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Children Exposed to Intimate Partner Violence: Conduct Problems, Interventions, and Partner Contact with the Child

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Abstract

Objective: Children's contact with their mother's violent partner is a potentially important variable for understanding conduct problems among children exposed to intimate partner violence (IPV). Within the context of a treatment study evaluating a parenting intervention (Project Support) for families exiting a domestic violence shelter, this study tested four hypotheses regarding children's post-shelter contact with their mother's violent partner: 1) participation in Project Support decreases the frequency of children's contact with their mother's violent partner; 2) post-shelter contact is positively associated with children's conduct problems and is associated more strongly for girls than boys; 3) frequency of contact mediates Project Support's effects on children's conduct problems; and 4) frequency of contact is positively associated with IPV and partner-child aggression, and these latter associations help explain effects of contact on children's conduct problems.

Method: Participants were 66 women (26 White) with a child (32 girls) between 4 and 9 years. Families were assessed every 4 months for 20 months after departure from a domestic violence shelter.

Results: Project Support reduced the extent of partner-child contact. In addition, within-subject changes in contact over time were associated with girls', but not boys', conduct problems, and it partially mediated effects of Project Support on girls' conduct problems. Higher average levels of contact over time were also positively associated with further incidents of IPV and partner-child aggression, and partner-child aggression helped explain effects of contact on children's conduct problems.

Conclusion: Children's post-shelter contact with the mother's violent partner relates positively to several negative family outcomes.

Keywords

intimate partner violence; child conduct problems; parenting interventions; children's exposure to violence

Each year in the U.S., millions of mothers of young children endure physical violence at the hands of an intimate partner (Finkelhor, Turner, Shattuck, & Hamby, 2015; McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). Children exposed to frequent and severe intimate partner violence (IPV) are at increased risk for mental health problems, especially conduct problems, such as aggression and oppositional behavior (Evans, Davies, & DiLillo, 2008; Kitzmann, Gaylord, Holt, & Kenny, 2003). Conduct problems can be disruptive and costly, and they predict many different social and mental health problems during childhood, adolescence, and adulthood (Foster, Jones, & Conduct Problems Prevention Research Group, 2005; Raudino, Woodward, Fergusson, & Horwood, 2012). Once entrenched, children's conduct problems are often resistant to change, particularly in the context of interparental discord (Reid, Webster-Stratton, & Hammond, 2003). From a public health perspective, it is important to understand the reasons why children from violent families exhibit heightened levels of conduct problems and offer effective interventions for these children.

Frequent and severe IPV prompts many women and children to seek refuge at a domestic violence shelter or some other form of transitional housing (National Network to End Domestic Violence, 2014), and children in these families often exhibit conduct problems (Grych, Jouriles, Swank, McDonald, & Norwood, 2000). Theory and data on the development of aggression and conduct problems point to children's exposure to very high levels of IPV, as well as exposure to harsh parenting, as factors that contribute to the development of such problems (Bandura, 1973; Patterson, 1982). In the broader literature on family interaction and child conduct problems, it has also been demonstrated repeatedly that the frequency of contact with an antisocial father figure (defined as living with and/or having the father involved in caregiving) relates to children's conduct problems (e.g., Blazer, Iacono, & McGue, 2008; DeGarmo, 2010; Jaffee, Moffitt, Caspi, & Taylor, 2003; Thornberry, Freeman-Gallant, & Lovegrove, 2009). Although the violent partner of a mother in a domestic violence shelter is not necessarily an antisocial father figure, it is possible that children's contact with these men following shelter residence relates to a continuation of child conduct problems. For example, this might occur because the man's presence is a proxy for increased levels of IPV and harsh parenting. It might also occur due to other factors, such as the man's direct or indirect encouragement of antisocial child behavior. Within the context of an intervention study conducted with families departing from a domestic violence shelter, the present research evaluates associations between children's contact with their mother's violent partner after leaving a domestic violence shelter and their conduct problems.

Interventions for Children Exposed to IPV and How They Work

Rigorous evaluations of interventions designed to reduce conduct problems among children exposed to IPV are scarce, but those found to be effective often address mothers' parenting (e.g., Graham-Bermann, Lynch, Banyard, DeVoe, & Halabu, 2007; Lieberman, Van Horn, & Ippen, 2005). Project Support (Jouriles et al., 2001; Jouriles et al., 2009; McDonald, Jouriles, & Skopp, 2006) is one example. Project Support was originally designed for families in which the children had accompanied their mothers to a domestic violence shelter, at least one child in the family (4 to 9 years) was exhibiting clinical levels of conduct

problems, and upon leaving the shelter the mothers were transitioning to a home independent of their violent partners. Project Support focuses on teaching mothers ways to improve their relationship with their child and to manage child misbehavior appropriately. It also provides mothers with social and instrumental support during the critical time following shelter departure. Project Support has been shown in two separate randomized controlled trials to reduce children's conduct problems in families departing from domestic violence shelters (Jouriles et al., 2001; Jouriles et al., 2009), with medium-to-large intervention effects maintained for up to two years after shelter departure (McDonald et al., 2006).

Findings that interventions that include a parenting component are effective in reducing conduct problems among children exposed to IPV are noteworthy, but not surprising. Parent training has been identified repeatedly as an efficacious method of intervention for children with conduct problems (Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013; Eyberg, Nelson, & Boggs, 2008). Perhaps the more intriguing question is: How exactly do these parenting programs work in families in which the mother is separating from a violent partner? Theoretically, they work by altering mothers' responses to their children in such a way as to promote prosocial child behavior. However, researchers have begun to question whether changes in parenting actually account for most of the observed changes in children's conduct problems (Forehand, Lafko, Parent, & Burt, 2014; Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011). Jouriles and colleagues (2009) found that changes in mothers' inconsistent and harsh parenting partially accounted for Project Support's effects on children's conduct problems during treatment. In addition, consistent with the results of research on other interventions for children exposed to IPV (Graham-Bermann et al., 2007; Overbeek, De Schipper, Willemen, Lamers-Winkelmann, & Schuengel, 2015), reductions in mothers' trauma symptoms and psychological distress contributed to treatment effects. Yet, a sizable proportion (46.4%) of Project Support's effects on children's conduct problems cannot be attributed to changes in maternal parenting and maternal symptoms of trauma and distress, raising the question of what else might account for the improvements in child conduct problems.

Project Support might be hypothesized to reduce children's conduct problems, in part, because it reduces the amount of contact children have with their mother's violent partner following the shelter residence. In other words, if reduced contact with the partner is a goal of the mothers, post-shelter programs that include regular home visits from a service provider might help mothers in achieving this goal. For example, if service providers are conducting regular home visits in which they are offering mothers emotional support and instrumental help (e.g., money, clothing, food), this might obviate mothers' need to contact others, including former partners, for such support and help. As a result, the frequency of contacts with the partner might be reduced. It is also possible that men might perceive greater risk to themselves (e.g., arrest) if they force contact with mothers who are involved in regular mental health or social services in which a service provider is regularly visiting the homes.

By definition, women who go to a domestic violence shelter with their children have physically separated, at least temporarily, from a violent partner. These separations typically are part of a longer process of ending the relationship (Anderson & Saunders, 2003), and

mothers, as well as their children, may continue to have contact with the violent partner long after shelter departure (McDonald, Jouriles, Rosenfield, & Corbitt-Shindler, 2011). It is presently unclear if children's continued contact with the partner leads to problematic child outcomes. However, there are reasons to believe that it might. For example, children's contact with the partner is likely related to mothers' contact, and mothers' reports of involvement with the partner (operationalized as continuing to live with and/or have a romantic relationship with the partner) after a domestic violence shelter stay relate to the recurrence of IPV (Tan, Basta, Sullivan, & Davidson, 1995). Similarly, according to mothers' reports, frequency of partners' in-person contact with a child after a shelter stay relates to partner-child aggression (McDonald et al., 2011). Although not yet tested, it seems reasonable to assume that continued IPV and partner-child aggression contribute to continued child conduct problems. On the other hand, at least one study (DeGarmo, 2010) found that antisocial fathers' coercive parenting did not account for the association between children's contact with the father and children's conduct problems.

Continued contact with the mother's violent partner might be especially troubling for female children. Girls often are socialized to be more "other oriented" than boys (Helgeson, 1994), and may be more aware of possible consequences of the family's continued contact with the partner (e.g., additional violence between parents and harm to the mother). As a result, girls may be more vigilant or on edge, perhaps setting the stage for more oppositional and aggressive behavior. This hypothesis is consistent with findings from a group treatment program directed toward children with experiences of IPV, suggesting that children's continued contact with their mother's violent partner is more harmful for girls than boys (Georgsson, Almqvist, & Broberg, 2011). It is also consistent with certain findings in the divorce literature suggesting that post-divorce parental conflict might be more important in explaining girls', rather than boys', externalizing problems (Simons, Lin, Gordon, Conger, & Lorenz, 1999).

Current Study

In this secondary analysis of data from a randomized controlled trial evaluating Project Support (Jouriles et al., 2009), we tested four hypotheses regarding children's post-shelter contact with their mother's violent partner: 1) children whose families participated in Project Support would have less frequent contact with the partner, relative to the comparison condition; 2) the frequency of children's contact with the partner would be positively associated with children's conduct problems and child sex would moderate this relation, with frequency of contact more strongly related to girls' conduct problems than boys'; 3) the frequency of contact would partially mediate the effect of Project Support on children's conduct problems, even after accounting for other documented mediators of Project Support effects (mothers' inconsistent and harsh parenting, trauma symptoms, and psychological distress); and 4) the frequency of contact would be positively associated with levels of IPV and partner-child aggression, which in turn would help explain the effects of contact on children's conduct problems. Hypotheses 2–4 are evaluated two ways. The first takes a between-subjects approach, with contact defined as the average amount of contact with the partner across all assessments. The second takes a within-subjects approach, with contact

defined as how much a child's contact with the partner at a given assessment point differs from the child's own average level of contact across all assessments (i.e., a deviation score).

In the present research, we operationalized partner contact by estimating the number of days of contact the target child had with the partner (defined as the partner living with or caregiving for the child). This definition of partner contact is similar to the manner in which other researchers have defined contact between children and antisocial men (Blazei et al., 2008; Jaffee et al., 2003). It is also consistent with our theorizing on how children's contact with mother's violent partner might lead to children's externalizing problems—by increasing IPV and partner-child aggression. Yet, the empirical literature on fathers' residential status suggests potentially meaningful differences in how children will perceive and relate to their mother's violent partner if the partner is actually living with the family/child. For example, residential status relates to how “important” fathers are viewed by their children (Munsch, Woodward, & Darling, 1995). Thus, we explored whether the partner's residential status with the family, as opposed to contact with the child, changed any of our findings. By the same token, the empirical literature on children's views and interactions with biological fathers versus other father figures suggests potentially meaningful differences (e.g., Hofferth & Anderson, 2003). Thus, we also conducted exploratory analyses to evaluate the influence of the partner's biological relationship to the child on each of our four hypotheses.

Method

Participants

This study is a secondary analysis of data from a randomized controlled trial evaluating Project Support (Jouriles et al., 2009). Participants were 66 children (34 boys, 32 girls) and their mothers. In each family, the mother: 1) had sought refuge at a domestic violence shelter and reported at least one act of physical IPV from a male partner during the previous 12 months; 2) did not resume living with her partner immediately after shelter departure; and 3) had at least one child between 4 and 9 years who, according to a structured interview conducted with the mother, met diagnostic criteria for oppositional defiant disorder or conduct disorder, as described in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (DSM-IV; American Psychiatric Association, 1994). The age range of the children in this study is well matched to our hypotheses because multiple studies have pointed to the importance of early intervention for child conduct problems (e.g., McNeil, Capage, Bahl, & Blanc, 1999) as well as father involvement during this developmental period (e.g., Flouri & Buchanan, 2003).

Families began participating in the study as soon as possible after shelter departure (typically within one month). Of the 66 families, 32 were randomized to the Project Support condition and 34 to the comparison condition after completing their baseline assessment. Assessments were conducted in families' homes every 4 months for 20 months (baseline, 4, 8, 12, 16, and 20 months after baseline). Information on demographics and pre-shelter IPV was obtained during their shelter stay and is summarized for the two conditions in Table 1. T-tests and chi-square tests indicated no between-group differences at baseline on any of the

variables ($ps > .32$). Additional details about the sample and assessments can be found in Jouriles et al. (2009).

Experimental Conditions

Project Support condition.—Families in the Project Support condition received a home-based family intervention for up to 8 months following shelter departure. The intervention included two primary components: 1) teaching mothers child management skills, and 2) providing instrumental and emotional support to mothers. The child management skills included 12 components (e.g., listening to your child, praising, reprimanding). The skills were taught to mothers through didactic instruction accompanied by written materials, role plays, in vivo practice, corrective feedback, between-session homework, and mastery checks. For the instrumental and emotional support component of the intervention, therapists regularly assessed and addressed safety concerns, provided emotional support to mothers, assessed families' current needs and offered referrals and help (e.g., delivered donated goods) as indicated. Families in the Project Support condition received an average of 20 home-based treatment sessions during the intervention period, and there were additional brief contacts with project staff by phone.

Comparison condition.—Research staff attempted to contact families in the comparison condition monthly to offer support (e.g., information about referrals) and facilitate sample retention. No restrictions were placed on comparison families' receipt of services from other sources. Families in the comparison condition received an average of 3.7 contacts with project staff (almost all of which were by phone) during the eight months following shelter departure.

Additional details about the services received by families in the Project Support and comparison conditions can be found in Jouriles et al. (2009).

Measures

The measures described below were administered at each assessment.

Contact with the partner.—Mothers indicated how frequently the target child had contact with the partner (the individual she was with prior to shelter entry) over the past four months. Mother's reports of child contact with the partner were collected on a 9-point scale (0 = none, 1 = less than once a month, 2 = once a month, 3 = twice a month, 4 = once weekly, 5 = twice weekly, 6 = every other day, 7 = daily, and 8 = partner lives with family) and from any statements made by the mother about the frequency and nature of contact (e.g. *child saw former partner twice a month for two months, and then the former partner started living with the family; partner watched the children while the mother was working*). Similar to other researchers' efforts to document contact between children and antisocial men (Blazei et al., 2008; Jaffee et al., 2003), we used these data to estimate the number of days of contact the target child had with the partner (defined as living with or caregiving for the child, with caregiving defined as involvement in extended visitations, preparing meals, or watching/babysitting the child). Such estimates have been found to be associated with children's conduct problems in past research (Blazei et al., 2008; Jaffee et al., 2003).

Because there is some subjectivity involved in deriving such estimates, two raters coded 14% of the data to establish inter-rater agreement on the estimates (there was 100% agreement). For exploratory analyses, we also estimated the number of days the partner lived with the child (95% agreement).

Child conduct problems.—Mothers completed the externalizing problems scale of the Child Behavior Checklist (CBCL; Achenbach, 1991), rating how well each item (e.g., *disobedient at home*) described their child's behavior in the past 4 months on a 3-point scale (0 = not true, 1 = sometimes or somewhat true, and 2 = very true or often true). T-scores were used in the analyses. Coefficient alpha across the 6 assessments ranged from .85 to .87. The CBCL is widely used and has strong psychometric properties (Achenbach, 1991).

Mothers also completed the *Eyberg Child Behavior Inventory* (ECBI; Eyberg & Ross, 1978), reporting the frequency of conduct problems (e.g., *has temper tantrums*) over the previous 4 months on a 7-point scale (1 = never to 7 = always). The ECBI correlates with the CBCL externalizing problems scale (Boggs, Eyberg, & Reynolds, 1990). Coefficient alpha across the 6 assessments ranged from .92 to .95.

Observational data on oppositional child behavior were collected at three time points: baseline, 8 months, and 16 months. At each assessment, child behavior was recorded for 45 minutes on each of three days (a total of 135 minutes of observational data at each time point). As little structure as possible was imposed on families during the recording periods, other than all families were recorded during and shortly after a meal or snack and were asked to remain within the camera's view as much as possible. A code originally developed by Hetherington and Clingempeel (1986), which reflects the degree to which the child disrupts family interactions or actively defies authority figures by being inconsiderate, noncompliant, hostile, or aggressive, was used. Ratings were made each minute on a 5-point scale (1 = not at all characteristic, 2 = mainly uncharacteristic, 3 = somewhat characteristic, 4 = mainly characteristic and 5 = highly characteristic). Reliability data were collected on approximately 10% of the observational data used in analyses; inter-rater reliability for this code was $r = .81$. The one-minute ratings were summed to derive an oppositional behavior score for each assessment point.

Intimate partner violence.—Mothers indicated how often she and her partner committed each of the 12 acts of violence in the past 4 months (e.g., *How often did a partner beat you up?*) on the physical assault subscale of the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy & Sugarman, 1996). Responses were made on a 7-point scale (0 = never to 6 = more than 20 times). Coefficient alpha across 6 assessments ranged from .74 to .95. The CTS2 relates to many theorized correlates of IPV (Straus et al., 1996).

Partner-child aggression.—Mothers reported on partner-child aggression on the psychological aggression, minor assault, severe assault, and very severe assault subscales of the Revised Conflict Tactics Scales Parent to Child Version (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). Sample items for each subscale are: psychological aggression: *swore or cursed at child*; minor assault: *hit child on the bottom with something like a belt, hairbrush, stick, or some other hard object*; severe assault: *threw child or knocked*

child down; very severe assault: *beat child up, that is hit child over and over as hard as he could*. Mothers reported the frequency of each act during the previous 4 months on a 7-point scale (0 = never to 6 = more than 20 times). Item scores were summed to create a total partner-child aggression score; coefficient alpha across the 6 assessments ranged from .74 to .88. The CTSPC is commonly used as a measure of corporal punishment and child maltreatment, and it relates to theorized correlates of parent-child aggression (Straus & Hamby, 1997).

Mediators of Project Support effects.—In the original study (Jouriles et al., 2009), inconsistent parenting, mother-child psychological aggression, mothers' trauma symptoms, and mothers' psychological distress mediated effects of Project Support on children's conduct problems. Thus, measures of these variables were included in the present research to test the third hypothesis. For *inconsistent parenting*, mothers completed the consistency subscale of the Parenting Dimensions Inventory (PDI; Power, 1993), reporting the degree of inconsistency in their responses to child misbehaviors (e.g., *I always follow through on discipline for my child, no matter how long it takes*) on a 6-point scale (1 = not at all descriptive of me to 6 = highly descriptive of me). Coefficient alpha across the 6 assessments ranged from .62 to .83. The PDI is correlated with child behavior problems as measured by the CBCL (Slater & Power, 1987). For *mother-child psychological aggression*, mothers reported the frequency of acts of aggression toward their children during the previous four months on the psychological aggression scale of the CTSPC, which was described above (Straus et al., 1998). Coefficient alpha across the 6 assessments ranged from .42 to .62. For *mothers' trauma symptoms*, mothers reported symptoms in the previous week in relation to past incidents of IPV on the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979). The IES contains 15 items assessing the frequency of avoidant (e.g., purposeful avoidance or efforts to dull emotional reactions to a stressful event) or intrusive (e.g., unwanted thoughts, feelings, or images of a stressful event) experiences. Sample items include: *I thought about the abuse even when I didn't want to* and *I stayed away from reminders of the abuse*. Responses are rated on a 4-point scale (0 = not at all, 1 = rarely, 2 = sometimes, 3 = often). Coefficient alpha across the 6 assessments ranged from .91 to .95. The IES is correlated with IPV frequency (Griffing et al., 2006). For *mothers' psychological distress*, mothers reported the level of distress caused by psychiatric symptoms (e.g., *worrying too much about things*) in the previous week (0 = not at all to 4 = extremely) on the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, Rickels, & Rock, 1976). The Global Severity Index of the SCL-90-R was used. The SCL-90-R correlates with other measures of psychological distress (Derogatis et al., 1976). Coefficient alpha across the 6 assessments ranged from .96 to .98.

Data Analysis

We conducted multilevel modeling (MLM) analyses because MLM includes all subjects, regardless of missing data, hence increasing power and generalizability of results. For univariate outcomes (contact, partner-to-child aggression, and IPV), repeated measures of each outcome (at each of the 6 assessments) were nested within individuals. MLM allows these repeated measures to be correlated through modeling the covariance structure of the errors of the repeated measures.

Analyses involving the three measures of child conduct problems (the second, third, and fourth hypotheses) were conducted using multivariate MLM (MMLM). MMLM allows for multiple dependent variables in one model (avoiding inflation of Type 1 error) and does not require that they be assessed on the same schedule (the observational measure was assessed every 8 months, the two self-report measures were administered every 4 months). The MMLM analyses involved 3-level MLM models, with the multiple measures of conduct problems nested within assessments, which were nested within individuals.

As recommended by Heck, Thomas, and Tabata (2013), we explored various growth curve models for each outcome variable in each analysis, including linear, quadratic, logarithmic, and piecewise (separate models for treatment and follow-up phases of the study) models. We used piecewise models in all analyses because it fit the data best (based on AIC and BIC scores). Dependent variable raw scores were converted to z-scores for MMLM analyses (Hox, 2010).

First, we examined whether children's contact with the partner differed across the Project Support and the comparison condition (hypothesis 1). To determine whether contact was related to conduct problems (hypothesis 2), we used contact (at each assessment) as a time-varying predictor (TVP) of conduct problems. Recent research shows that both "between-subjects" and "within-subject" effects of a TVP (e.g., contact) need to be included in prediction models to accurately assess the TVP's effect on outcomes (e.g., Hamaker, Kuiper, & Grasman, 2015; Wang & Maxwell, 2015). Failure to "disaggregate" between-subjects and within-subject effects can lead to erroneous estimates of TVP effects (e.g., Wang & Maxwell, 2015). Following the approach suggested by Hoffman (2015), we disaggregated these effects into orthogonal (uncorrelated) variables. The score for the between-subjects variable was calculated as the average amount of contact across all assessments for each child (we refer to this as "average contact"). The scores for the within-subject variable, calculated at each time point for each child, reflect the difference in the amount of contact at each time point from that child's average amount of contact across all time points (we refer to this as "deviations in contact"). As required for accurate estimation of the effect of a TVP, both the average contact and deviations in contact were included as simultaneous predictors in the MMLM. Since we hypothesized child sex to moderate the effects of contact on child conduct problems, we also included child sex, Child Sex $\times$ Average Contact, and Child Sex $\times$ Deviations in Contact as additional predictors.

To determine whether contact mediated Project Support effects on child conduct problems over and above other previously documented mediators (hypothesis 3), we added the other mediators to the MMLM model. Figure 1 summarizes the mediation model; note that although effects of time are not represented in the figure, all the coefficients in the model come from the MLMs and MMLMs discussed above. Mediation was tested using the distributions of products test (Tofighi & MacKinnon, 2011).

To examine whether contact related to IPV and partner-child aggression (hypothesis 4), we added average contact and deviations in contact (as well as child sex and Sex $\times$ Contact) as predictors to the growth curve model for IPV and partner-child aggression. To determine if IPV and partner-child aggression mediated effects of contact on children's conduct problems

(hypothesis 4), we used the effect of contact on IPV and partner-child aggression as “a” paths, and we added IPV and partner-child aggression (both the average and deviations for each) as additional predictors in the MLM model used to test hypothesis 3 to determine the “b” paths for the mediation analysis (Figure 2). Mediation was tested using the distribution of products test. Effect sizes were calculated using the t to d conversion.

Power analyses using the MLM power analysis program PinT 2.12 (Power in Two-Level Models; Snijders & Bosker, 1993) indicated that power exceeded .90 for detecting a medium effect ($d = .50$). Thus, we had sufficient power to detect the possible interaction effects, as long as they were at least medium in size.

Results

Means and standard deviations for the study variables are summarized by condition in Table 2. The third assessment (8 months post-shelter) was the post-treatment assessment. The raw contact scores were skewed (skewness = 1.80), thus we log-transformed them prior to analysis and prior to calculating the average contact and deviations in contact scores.

Project Support Effects on Mothers' Contact with the Partner (Hypothesis 1)

Frequency of contact did not differ between conditions at baseline, $p = .36$, but there was less contact at the five later assessments for Project Support families than for comparison families, even after controlling for baseline contact, $t(64) = 2.05$, $p < .05$, $d = .51$. Growth curve models indicated no change in contact over time, and no difference between conditions in the change in contact over time.

Partner Contact, Children's Conduct Problems, and Child Sex (Hypotheses 2)

For descriptive purposes, we first report the results for the change in conduct problems as a function of Project Support; similar analyses and additional details on this are provided elsewhere (Jouriles et al., 2009). Conduct problems improved more quickly for children in the Project Support condition than for those in the comparison condition, both during active treatment, $b = .24$, $t(173) = 2.78$, $p < .01$, $d = .42$, and during follow-up, $b = .26$, $t(269) = 2.30$, $p < .05$, $d = .28$. Conduct problems in the Project Support condition diminished substantially during treatment, $b = -.42$, $t(124) = -6.87$, $p < .001$, $d = 1.23$, with continued improvements observed across the follow-up period, $b = -.22$, $t(265) = -2.65$, $p < .01$, $d = .33$. In the comparison condition, conduct problems diminished to a lesser extent (compared to Project Support) during the treatment period, $b = -.19$, $t(175) = -3.14$, $p < .005$, $d = .47$, and did not change during the follow-up period, $b = 0.05$, $t(273) = 0.58$, $p = .57$, $d = .07$. These changes resulted in lower levels of conduct problems in Project Support than in the comparison condition at the end of the study, $b = .48$, $t(197) = 2.38$, $p < .05$, $d = .34$. Child sex did not moderate any of these effects, $ps > .69$.

To investigate whether contact influenced child conduct problems, average contact, Average Contact $\times$ Child Sex, deviations in contact, and Deviations in Contact $\times$ Child Sex were added to the model. Average contact did not predict conduct problems over time, but deviations in contact did. This relation was moderated by child sex, $b = -.16$, $t(249) = -3.06$, $p < .005$, $d = .39$, with positive deviations (more contact at a given time point than the

child's average level of contact) being positively related to girls' conduct problems, $b = .11$, $t(249) = 2.58$, $p = .01$, $d = .33$ ¹ but not boys', $p = .10$. Exploratory analyses found no indication of a non-linear relation between contact and conduct problems and no indication that the effects of contact varied by treatment condition.

Contact as a mediator of the effects of Project Support (Hypothesis 3)

To investigate whether contact mediated the effect of Project Support on children's conduct problems, after accounting for the previously documented mediators, we added the previously documented mediators (inconsistent parenting, mother-child psychological aggression, mothers' trauma symptoms, mothers' psychological distress, and Condition $\times$ Mothers' Psychological Distress) to the model for hypothesis 2 (see Figure 1 for a visual summary of this model). MMLM results indicated a Deviations in Contact $\times$ Child Sex interaction effect, $b = -.16$, $t(241) = -3.45$, $p < .001$, $d = .44$; positive deviations in contact related positively to conduct problems for girls (the "b" path in the mediation model), $b = .11$, $t(239) = 3.00$, $p < .005$, $d = .39$ ², but not for boys. Each of the previously documented mediators predicted child conduct problems as well, $ps < .005$. The distribution of products test (Tofighi & MacKinnon, 2011) indicated that for girls, deviations in contact with the partner mediated treatment condition effects on conduct problems, $a*b = .10$, 95% CI: [.003, .25]. However, for boys, deviations in contact did not mediate treatment condition differences on conduct problems, nor did they mediate treatment condition differences for the sample as a whole, collapsing across child sex.

Partner Contact, IPV, and Partner-Child Aggression (Hypothesis 4)

The relations between average contact and IPV, and between deviations in contact and IPV, were not moderated by child sex. However, across sexes, higher average contact was associated with higher IPV, $b = .76$, $t(48) = 2.33$, $p < .05$, $d = .67$, and positive deviations in contact were related to higher IPV, $b = .90$, $t(29) = 3.15$, $p < .005$, $d = 1.17$ ³.

The relations between average contact and partner-child aggression, and between deviations in contact and partner-child aggression, were not moderated by child sex. However, across sexes, higher average contact, $b = 4.61$, $t(45) = 6.96$, $p < .001$, $d = 2.08$, as well as positive deviations in contact, $b = 3.77$, $t(49) = 8.99$, $p < .001$, $d = 2.57$ were related to more partner-child aggression⁴.

We next examined whether IPV and/or partner-child aggression mediated the association between deviations in contact and child conduct problems. We added IPV and partner-child aggression to the previous MMLM model. Because these variables are also time-varying predictors, we disaggregated them into between-subjects and within-subject variables

¹These analyses were repeated using contact at each assessment predicting child conduct problems at the next assessment rather than child problems at the concurrent assessment. There was no significant relation between contact at the current assessment and child conduct problems at the next assessment, nor were there any interactions between sex and contact.

²Again, duplicating this analysis using contact to predict child conduct problems at the next assessment, we found no significant relation between contact and next assessment conduct problems, and no significant interaction between contact and sex.

³Since contact is expected to influence concurrent IPV and not next assessment IPV, we did not assess the effect of current contact on next assessment IPV.

⁴Since contact is expected to influence concurrent partner-child aggression and not next assessment partner-child aggression, we did not assess the effect of current contact on next assessment partner-child aggression.

(between subjects component = average score across assessments; within-subject component = deviations from the individual's own average score). This provided the paths for the effect of both IPV and partner-child aggression on conduct problems (see Figure 2). First, we note that child sex did not moderate the relations between IPV and conduct problems, nor between partner-child aggression and conduct problems. IPV was not related to conduct problems, $ps > .77$, but deviations in partner-child aggression were related, $b = .02$, $t(113) = 2.79$, $p < .01$, $d = .52$. Higher than average levels of partner-child aggression were related to greater child conduct problems. Since the path linking deviations in contact to deviations in partner-child aggression was also significant, with positive deviations in contact being related to positive deviations in partner-child aggression, $b = 1.85$, $t(157) = 5.57$, $p < .001$, $d = .89$, deviations in partner-child aggression partially mediated the effect of deviations in contact on child conduct problems, $a*b = .03$, 95% CI: [.009, .058]⁵ (see Figure 2).

Average contact was not directly related to child conduct problems (see analyses for hypothesis 2 above), so we examined whether it might be indirectly related through changes in either IPV or partner-child aggression. Average contact was positively related to average partner-child aggression, which were positively related to child conduct problems, and this indirect, mediated pathway was significant, $a*b = .03$, 95% CI: [.009, .058].

Exploratory analyses

The estimated number of days that the partner resided with the family was less than the number of days the partner had contact with the family (see Table 2). We repeated our analyses using partner's residential status (number of days the partner lived with the family) as the measure of contact instead of our broader contact measure. The pattern of results was the same, with one exception: For hypothesis 4, deviations from average partner's residential status were not related to IPV.

Next, we explored whether the partner's biological relationship to the child influenced contact and child conduct problems, by adding the interaction of the partner's biological relationship (coded 0 = biological father, 1 = not biological father) with contact to the MLM and MLM models in hypotheses 1, 2, and 3. Results indicated that partners' relationship to the child did not influence the effect of Project Support on contact with the partner, $p = .54$ (hypothesis 1), but it did influence the relation between contact and child conduct problems (hypotheses 2 and 3). Deviations in contact were related to (and mediated) child conduct problems whether or not the partner was the child's biological father, but the relation was stronger when the partner was not the child's biological father, $p < .05$ (hypothesis 2), even after controlling for other previously identified mediators, $p < .05$ (hypothesis 3).

Discussion

This study evaluated four hypotheses about children's contact with their mother's violent partner following a shelter stay. We first hypothesized that Project Support, a post-shelter intervention, would decrease the frequency of children's contact with the partner. Results

⁵Analyses of the effect of deviations in partner-child aggression moderating child conduct problems at the next assessment showed no significant relations, and hence, there was no significant mediation of next assessment child problems.

were consistent with this hypothesis: Project Support reduced the amount of contact with the partner during the 20 months following shelter departure. Our second hypothesis focused on relations between the frequency of contact and children's conduct problems. We found that deviations in contact (i.e., within-subject changes in contact over time) were associated with girls' but not boys' conduct problems. Specifically, higher than average contact at a given time point was associated with greater conduct problems at that time point. Our third hypothesis was that the frequency of contact might help explain Project Support's effects on child conduct problems, and we found support for this hypothesis with girls. Specifically, within-subject changes in girls' contact with the partner partially mediated Project Support's effects. Our fourth hypothesis was that contact would be positively associated with IPV and partner-child aggression, and that these variables would partially mediate the relation between contact and child conduct problems. Average contact and deviations in contact were both positively associated with IPV and with partner-child aggression. Although IPV did not help explain the relation between deviations in contact and child conduct problems, deviations in partner-child aggression did. Further, we also found that children with higher average contact experienced higher average partner-child aggression, and higher average partner-child aggression was related to greater child conduct problems.

From a practical perspective, our results might be interpreted to suggest that reducing the extent to which children have contact with their mother's partner following a shelter stay can protect against several negative outcomes, including IPV and partner-child aggression. In each of the families participating in this study, the mother initially was attempting to remain separated from her partner after leaving the shelter. In addition, children's contact with the partner is likely a proxy for mothers' contact, and Project Support reduced the amount of children's contact with the partner following shelter departure. Thus, one implication of our findings is the potential utility of offering post-shelter support to mothers who wish not to return to their partners after leaving the shelter. In addition to Project Support, there are several demonstrably helpful outreach programs for women who are departing from a domestic violence shelter that might help women maintain a desired separation from a former violent partner (e.g., DePrince, Labus, Belknap, Buckingham, & Gover, 2012; Sullivan & Bybee, 1999).

Our findings that within-subject changes in partner-child aggression partially accounted for the association between deviations in contact and child conduct problems, and that average contact was indirectly related to child conduct problems through its association with average partner-child aggression, are consistent with speculation that children's contact with an antisocial father figure relates to children's conduct problems due to social interaction and coercive family processes (Blazei et al., 2008; DeGarmo, 2010; Jaffee et al., 2003; Thornberry et al., 2009). These findings suggest that it is partner-child aggression, and not necessarily the amount of contact the child has with the mother's partner, that is important to focus on with respect to reducing child conduct problems. In other words, it is important to identify ways to reduce partner-child aggression following shelter departure. This can potentially be achieved by educating mothers, partners, and others (e.g., judges) about the detrimental influences of partner-child aggression under these circumstances. This can be achieved by decreasing or eliminating contact with the mother's violent partner. However, the latter solution may also have risks for children's wellbeing. For example, some children

may love these men, especially if the man is the child's father, and the loss of this relationship could cause significant emotional distress. There also may be legal implications to consider (i.e., men's legal rights as fathers) when thinking about reducing children's contact with the mothers' violent partner.

It is intriguing that deviations in contact related to girls' conduct problems, but not boys', which is generally consistent with other findings in the IPV literature on children's contact with the partner (Georgsson et al., 2011). It is possible that girls are more sensitive than boys to their mothers' plight and to the possible consequences for their mothers and their family of continued contact with the partner. This sensitivity might cause girls to be more vigilant or on edge in general, and perhaps contribute to oppositional and aggressive behavior. Alternatively, this result may be due to family processes that were not measured in this study (e.g., emotional or psychological aggression between the mother and the partner), to which girls may be more sensitive than boys. Another hypothesis stems from the idea that boys experience these contacts with the mother's partner very differently than girls. For example, research on nonresidential fathers suggests they are more likely to visit and engage with their sons than their daughters (Cooksey & Craig, 1998; Harris & Morgan, 1991). In addition, boys tend to place greater importance on the father-child relationship than girls (Lamb, 1981). It is possible that some boys enjoy these contacts, or aspects of them, and this enjoyment might counteract some of the negative events associated with them.

It is noteworthy that the pattern of results remained essentially the same whether we used the frequency of the child's contact with the partner or whether the partner lived with the family as the measure of contact. This suggests the robustness of our findings across the two different conceptualizations of children's contact. Exploratory analyses also suggested that contact may be more likely to lead to problems when the partner is *not* the biological father of the child. Additional research will be necessary to attempt to replicate and understand this finding.

It should also be highlighted that the majority of our findings emerged in analyses focusing on within-subject changes in children's contact with the partner, as opposed to between-subjects differences in the amount of contact. Analyses of within-subject change are more sensitive than those of between-subjects differences, because the subject (in this case family) serves as its own control, allowing one to rule out uncontrolled third variables (Bolger & Laurenceau, 2013). However, generalizations about problematic levels of contact across families cannot easily be made from within-subject analyses. Yet, one important result did replicate for both within-subject deviations in contact and between-subjects average contact: both were indirectly related to child conduct problems through their relation with partner-child aggression.

There are several limitations of this study to note. First, because the study was correlational, causal inferences cannot be made, and unmeasured variables may account for some of the findings. In addition, we were not able to establish the exact sequence of events in our mediation analyses, since there was no evidence for a cross-lagged effect of our predictors on later outcomes. On the other hand, the absence of certain cross-lagged effects is not surprising—it might be expected that children's contact would be associated with IPV,

partner-child aggression, and even conduct problems during the time of the contact, as opposed to 4–8 months later. A second limitation pertains to our measurement strategy. Although we included observational and mother-report measures, most of the measures were mother-report, and the internal consistency of some of the measures was low. In addition, our measures of contact and residential status were fairly simple estimates of the number of days. It would be more informative to have data on the nature of the contact. A third limitation was our sample. Although there was sufficient power to test our hypotheses and the sample was diverse with respect to ethnicity, the sample included only 66 families, and some of our findings pertained only to the 32 girls in the sample. In addition, our findings emerged in the context of a randomized controlled trial evaluating effects of a specific intervention and specific mediators of the intervention, and the comparison condition received some support services, which may have mitigated between-group differences. In short, the generalizability of our findings may be limited.

The study also included a number of strengths, such as a lengthy follow-up period with multiple assessment points, a population that is very difficult to recruit and retain in longitudinal research, and a multi-method assessment of child conduct problems. Our findings indicate that children in the comparison group had approximately 3 times as much contact with their mother's partner in the 20 months following shelter departure than did children in families receiving Project Support. Deviations in contact over time were associated with conduct problems in girls and with family violence (both IPV and partner-child aggression). In addition, partner-child aggression appears to be important in explaining associations between children's contact with the partner and their conduct problems. This is one of the few studies to examine such relations after the mother has left a domestic violence shelter and attempted to separate from her partner. Identifying ways to prevent the IPV, partner-child aggression, and child conduct problems that follow from continued contact will be important.

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Figure 1. Child Contact with Mother's Partner as a Mediator of the Effect of Project Support on Child Conduct Problems.

Note: The coefficient above the "b" path (from Contact to Child Conduct Problems) is for girls, the coefficient below is for boys. All coefficients were taken from the MLM mediation analyses. The full mediation model included other terms (e.g., other growth curve parameters such as slopes during treatment and follow-up, and the average level of contact with the mother's partner). The only individual paths shown here are those that are directly relevant to our study hypotheses. *** $p < .001$; ** $p < .01$; * $p < .05$.

Figure 2. Mediation model for the relation between deviations in Partner-Child Contact and Child Conduct Problems.

Note: All coefficients were taken from the MLM mediation analyses. The full mediation model included other terms (e.g., other growth curve parameters such as slopes during treatment and follow-up, and the average level of the variables shown here). The only individual paths shown here are those that are directly relevant to our study hypotheses. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 1

Characteristics of the Project Support and Comparison Groups

<i>Variable</i>	<i>Project Support (%)</i>	<i>Comparison (%)</i>
Child sex (male)	56.3	41.2
Mother employment (employed)	37.5	32.4
Mother ethnicity		
White	37.5	41.2
Black, not of Hispanic origin	40.6	38.2
Hispanic	18.8	20.6
Asian or Pacific Islander	3.1	0
Partner is biological father	55.2	60.6
Women reported being beaten in the year prior to shelter entry (%)	81.3	61.8
	<i>M (SD)</i>	<i>M (SD)</i>
Child age	6.15 (1.53)	6.14 (1.82)
Mother age	29.70 (6.22)	29.09 (4.17)
Mother education (years)	11.62 (1.52)	11.61 (2.05)
Mother monthly income (\$)	551.17 (522.27)	519.18 (570.72)
Frequency of physical IPV in the year prior to shelter entry	44.33 (36.68)	43.80 (44.12)

Note. Responses on the 12-item physical assault subscale of the CTS2 during the shelter screening interview were summed to approximate the number of acts of physical IPV experienced by the mother in the year prior to shelter entry. For each item, the response options for frequency were: 0 = *never*, 1 = *once*, 2 = *twice*, 4 = *3–5 times*, 8 = *6–10 times*, 15 = *11–20 times*, 20 = *more than 20 times*.

Table 2
Means and Standard Deviations of Major Study Variables across Assessments for Project Support and Comparison Conditions

Variable	Assessment					
	Baseline	4 months	8 months	12 months	16 months	20 months
<i>Project Support Condition</i>						
Child's contact with partner (days)	18.84 (31.82)	9.54 (23.40)	10.27 (18.69)	6.93 (23.05)	9.48 (24.84)	9.96 (26.19)
Partner residing with family (days)	9.53 (25.98)	1.07 (5.67)	2.92 (9.70)	0.00 (0.00)	0.56 (2.80)	1.30 (6.26)
Externalizing problems (CBCL)	67.91 (7.78)	61.36 (9.83)	57.38 (8.48)	56.93 (9.77)	56.63 (9.78)	53.30 (12.45)
Problem behaviors (ECBI)	142.12 (39.89)	118.95 (39.45)	102.48 (34.03)	106.60 (35.89)	95.82 (30.68)	82.80 (33.21)
Oppositional child behavior	57.64 (10.03)	—	54.15 (6.78)	—	53.51 (5.93)	—
Intimate partner violence (CTS2)	22.69 (32.70)	3.38 (9.35)	4.86 (16.76)	0.13 (0.61)	2.68 (11.72)	1.82 (6.38)
Partner-child aggression (CTSPC)	11.87 (13.58)	3.64 (5.97)	3.89 (4.54)	2.20 (3.58)	0.50 (1.58)	1.07 (2.70)
<i>Comparison Condition</i>						
Child's contact with partner (days)	23.03 (32.09)	17.44 (33.85)	34.52 (45.94)	46.04 (53.43)	36.50 (52.45)	38.08 (51.09)
Partner residing with family (days)	16.59 (30.89)	5.28 (21.42)	18.62 (42.74)	26.71 (49.07)	28.96 (51.23)	27.20 (46.22)
Externalizing problems (CBCL)	65.85 (8.09)	61.03 (9.41)	61.55 (9.21)	58.04 (9.42)	59.96 (8.69)	58.96 (11.15)
Problem behaviors (ECBI)	129.76 (32.78)	110.55 (31.43)	102.68 (29.74)	100.60 (32.13)	104.63 (33.69)	103.82 (35.51)
Oppositional child behavior	55.87 (8.13)	—	57.43 (9.38)	—	57.21 (9.03)	—
Intimate partner violence (CTS2)	29.09 (33.92)	5.27 (18.97)	1.00 (2.37)	1.56 (4.55)	0.57 (1.56)	2.77 (9.80)
Partner-child aggression (CTSPC)	15.93 (12.55)	3.45 (5.09)	6.88 (6.83)	5.68 (7.48)	3.14 (5.46)	3.59 (4.95)

Note. Means are computed from participants for whom data was available at each particular assessment. Child's contact with partner = raw score for number of days; Partner residing with family = raw score for number of days; CBCL = Child Behavior Checklist (Achenbach, 1991); ECBI = Eyberg Child Behavior Inventory (Eyberg & Ross, 1978); CTS2 = Revised Conflict Tactics Scale-Physical Assault Subscale (Straus et al., 1996); CTSPC = Revised Conflict Tactics Scale-Parent-Child (Straus et al., 1996).