Community-Based Intervention for Children Exposed to Intimate Partner Violence: An Efficacy Trial

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A community-based intervention program was tested with 181 children ages 6–12 and their mothers exposed to intimate partner violence during the past year. A sequential assignment procedure allocated participants to 3 conditions: child-only intervention, child-plus-mother intervention (CM), and a wait-list comparison. A 2-level hierarchical linear model consisting of repeated observations within individuals and individuals assigned to conditions was used to evaluate the effects of time from baseline to postintervention comparing the 3 conditions and from postintervention to 8-month follow-up for both intervention conditions. Outcomes were individual children’s externalizing and internalizing behavior problems and attitudes about violence. Of the 3 conditions, CM children showed the greatest improvement over time in externalizing problems and attitudes about violence. There were 79% fewer children with clinical range externalizing scores and 77% fewer children with clinical range internalizing scores from baseline to follow-up for CM children.

Keywords: violence, family, community intervention, group therapy, child adjustment

The annual rate of intimate partner violence (IPV) in America is conservatively estimated at between 17% and 28% of all married or cohabiting couples (Jones et al., 1999; Kessler, Molnar, Feuer, & Applebaum, 2001). Estimates are that 11%–16% of children will be exposed to IPV each year (Wolak & Finkelhor, 1996). Exposure to IPV has been associated with decrements in children’s optimal development in the areas of social behavior, academic performance, physical, and mental health (Graham-Bermann & Seng, 2005; Kitzmann, Gaylord, Holt, & Kenny, 2003). Children exposed to IPV also suffer disproportionately high levels of child abuse and physical injuries (Johnson et al., 2002). Approximately 40%–60% of children exposed to IPV are in the clinical range of internalizing and externalizing behavioral problems, indicating the need for treatment (Grych, Jouriles, Swank, McDonald, & Norwood, 2000).

In longitudinal studies, IPV has been associated with externalizing behavior problems for boys and internalizing behavior problems for girls (Yates, Dodds, Sroufe, & Egeland, 2003), and risk for developing delinquency, substance abuse/dependence, and problems in social relationships with others, inclusive of dating violence as adolescents and IPV as adults (Ehrensaft et al., 2003). Hence, interventions for children exposed to violence should aim to improve a range of child behavioral and mental health outcomes where problems exist.

Evaluating Interventions for Children Exposed to IPV

Compared with the number of studies in which interventions for child abuse have been evaluated, there is little adequate research on intervention for children exposed to IPV. The few studies that do exist are beset with design and method problems, for example, poorly defined samples, inappropriate or no comparison groups, and reliance on small samples that reduce confidence in results (Graham-Bermann, 2000; Graham-Bermann & Hughes, 2003). There are few interventions in which treatment manuals are used that offer consistency in implementing protocols and/or goals.

Moreover, a number of studies rely on children living in shelters for battered women, despite researchers’ estimates that (a) only approximately 2% of children exposed to IPV have mothers who reside in such shelters and (b) these families have inordinately higher levels of violence than abusive families living in the community (Straus & Gelles, 1995). When Jouriles and colleagues...
(Jouriles et al., 2001) tested a program based on social learning principles that targeted parenting skills and children’s aggressive behavior, they recruited children and mothers departing shelters. Thirty-six children diagnosed with oppositional defiant disorder or conduct disorder (a subset of children in sheltered families) were randomly assigned to intervention and comparison groups. This program was found to be effective in reducing behavioral problems for children exposed to IPV by enhancing parenting skills and lessening children’s aggression. These gains were maintained at 16-month follow-up.

The diverse range of possible outcome behaviors and treatment modalities also makes it difficult to compare across studies. For example, 50 weeks of psychotherapy outperformed case management in reducing trauma symptoms in a small sample of preschoolers exposed to “marital violence” (Lieberman, Van Horn, & Ippen, 2005). Unfortunately, this study, as in many others, fails to report follow-up to ascertain whether reported findings were stable over time, whether findings were the result of participation in the intervention program, or the result of subsequent life experience.

The fact that most children exposed to IPV exhibit a broad range of behavioral problems, inclusive of internalizing problems as well as trauma stress reactions (and not just aggression), and do so in families living in the community (and not just in shelters), makes it clear that additional intervention outcome research is needed. Particularly lacking are studies of interventions for children with subclinical- as well as those with clinical-level problems. Indeed, researchers have recently identified the critical need for empirically sound research using a psychopathology model that identifies both diagnosed and at-risk children as being in need of services that are comprehensive and community based (Weisz, Sandler, Durlak, & Anton, 2005).

Theoretical Bases for Intervention

The intervention program assessed in the present study relies on the theoretical assumptions that children may be distressed or made anxious by exposure to IPV as well as learn deleterious patterns of behavior, attitudes, and beliefs as a result of observing violence (e.g., engage in aggressive behavior with others; believe that violence is acceptable). Research emanating from social-cognitive, social learning, and trauma theories converges to suggest that children exposed to IPV may develop harmful paradigms and expectations for themselves and others, have heightened worries and concerns as well as difficulty managing aggression, and intense affect following exposure to IPV (Dodge, Laird, Lochman, & Zelli, 2002; Graham-Bermann, 1996; Graham-Bermann & Brescoll, 2000; Graham-Bermann & Levendosky, 1998; Grych, Harold, & Miles, 2003; Guerra, Huesmann, Tolan, Van Acker, & Eron, 1995; Patterson, 1982). The intervention program described herein aims to promote alternatives to aggression and address children’s beliefs about violence.

Meta-analyses of studies that evaluate prevention programs to reduce youth conduct problems consistently indicate that protocols having a multicomponent approach (e.g., parent training with behavior management plus child training in the development of social skills) provide the greatest effects (Kumpfer & Alvarado, 2003; Serketich & Dumas, 1996). Because parents serve as models for relationships and social interaction, as well as emotional anchors for children in times of stress, their coping is vital to their child’s well-being. However, the tasks of parenting may become more challenging when the parent is also under stress as a result of IPV (Davies, Sturge-Apple, & Cummings, 2004; Margolin, Gordis, & Oliver, 2004). Thus, programs that address the mother’s parenting needs may be critical to addressing the needs of the child.

Method

Participants

Children ranged in age from 6 to 12 years ($M = 8.49$, $SD = 2.16$). There were 110 boys and 111 girls. Child ethnicity was diverse, with 52% Caucasian, 34% African American, 9.5% bicultural, and 4.5% from other groups. Mothers’ mean age was 33.10 years ($SD = 5.29$ years), with 57% Caucasian, 35% African American or bicultural, and 8% from other groups. Monthly income varied ($M = $1,366, $SD = $1,315). Most mothers completed high school (84.6%), and 23% were single, 30% separated, 19% currently married, 17% divorced, 9% living with a partner, and 2% remarried. The women’s self-reported history of violence with an abusive partner indicates that the average length of their abusive relationship was 10 years ($M = 125.13$ months, $SD = 71.73$). Only 17% of mothers were currently living with an abusive partner, yet 68% still had some contact with the partner ($M$ contact = 158 days/year, $SD = 141.93$). Some women had had a violent partner before (42%), with a mean of 1.70 violent partners ($SD = 1.23$) in their lifetime. During the study, two mothers moved to shelters for battered women.

The Intervention Programs

The 10-week child intervention (Graham-Bermann, 1992) described herein targeted children’s knowledge about family violence, their attitudes and beliefs about families and family violence, their emotional adjustment, and their social behavior in the small group. The program training manual was phase based such that early sessions were designed to enhance the child’s sense of safety, to develop the therapeutic alliance, and to create a common vocabulary of emotions for making sense of violence experiences.1 Later sessions addressed responsibility for violence, managing emotions, conflict and its resolution, and family relationship paradigms. No new children were added to the group after the second session. Groups were age graded (6–8 years, 9–12 years) and gender mixed. Each intervention group had 5–7 children and two therapists trained to provide support and to serve as models for managing emotions and interpersonal conflict that the child’s family may not have provided. Group lessons were reviewed and repeated each week. This small group format has been used successfully in interventions with children exposed to other forms of violence (Cloitre, Koenen, Cohen, & Han, 2002).

The parenting program (Graham-Bermann & Levendosky, 1994) was designed to support mothers by empowering them to discuss the impact of the violence on their child’s development; to build parenting competence; to provide a safe place to discuss parenting fears and worries; and to build connections for the

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1 Treatment manuals for the children’s and the mothers’ programs are available from Sandra A. Graham-Bermann upon request.
mother in the context of a supportive group. In essence, this 10-week intervention is aimed at improving mothers’ repertoire of parenting and disciplinary skills and enhancing their social and emotional adjustment, thereby reducing the children’s behavioral and adjustment difficulties.

Group therapists were graduate students in clinical psychology and social work at the University of Michigan who were paired with community providers, such as therapists at local mental health clinics. Therapists received intensive training in clinical work with children and women exposed to IPV as well as ethical issues in working with at-risk populations. All therapists received weekly supervision by Sandra A. Graham-Bermann in which process notes were reviewed and treatment adherence discussed and evaluated. Child attendance ranged from 5 to 10 sessions \((M = 7.35, SD = 1.50)\). The number of sessions did not differ significantly for those in the child-only (CO) and child-plus-mother (CM) conditions, \(t(1, 118) = 0.08, p = .94\), nor by child gender, child or mother age, or by outcome variables at baseline. Caucasian children averaged one more session than did minority children \((M = 7.69, SD = 1.38, \text{VS. } M = 6.88, SD = 1.57), t(1, 117) = 2.99, p = .003.\) There was an inverse relationship between the amount of violence witnessed and sessions attended \((r = -.27, p = .003)\).

**Objectives**

The overarching objectives of the present study were to assess the efficacy of a group intervention for children and their mothers exposed to IPV and to identify factors associated with treatment efficacy. The main hypotheses were that (a) children who received the intervention (CM and CO conditions) were posited to have lower levels of externalizing and internalizing problems and improved attitudes about violence posttreatment than wait-list comparison [CG] children, (b) CM children were hypothesized to have lower levels of externalizing and internalizing problems and more improved attitudes about violence following treatment than CO and CG children, and (c) CM children would show greater long-term change than CO children on all outcomes. Also of interest was the question of whether the programs were effective for children with diagnosable problems—reducing the percentage of those who scored within the clinical range of externalizing and internalizing behavioral problems.

**Measures**

**Family violence.** IPV was assessed with the Conflict Tactics Scales (CTS; Straus, 1979) and the Severity of Violence Against Women Scales (SVAWS; Marshall, 1992). The CTS was first used to assess the prevalence of domestic violence in national samples of American families and is the most commonly used measure of children’s exposure to family violence (Jouriles, McDonald, Norwood, & Ezell, 2001; Straus & Gelles, 1995). The SVAWS consists of 46 items designed to measure the amount of emotional maltreatment and coercion experienced by both battered women and women who were not battered (Marshall, 1992). In the present study, the CTS Physical Violence subscale alpha was .84, and the SVAWS Emotional Maltreatment scale alpha was .86. Mothers were asked to report the number of both physical abuse and emotional abuse tactics that occurred during the past year and whether the child was eyewitness to those events. Given the overlap in child abuse when there is also IPV (Johnson et al., 2002), harm to the child was assessed with three questions asking whether the child was intentionally harmed or injured by the abusive partner. Mothers reported the frequency of any physical harm to the child over the past year and recalled the most violent episode within the past year and whether the child was intentionally harmed then. If harm was characterized as abusive, then it was reported to child protective services.

**Social desirability bias.** It is difficult to ascertain the validity of self-reports of violence exposure because these events most often occur within the home and do not eventuate in public records, such as police reports or emergency room visits. The Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964) was used to test for the contaminating effects of self-report bias and has been correlated with the Minnesota Multiphasic Personality Inventory (MMPI) Psychopathic Deviate subscale \((r = .41)\) and Lie scale \((r = .54)\). A short form of 10 items with a 7-point Likert scale format has similar reliability (Greenwald & Satow, 1970). In the present study, the alpha was .70.

**Child adjustment problems.** Mothers reported child behavioral adjustment problems using the Child Behavior Checklist (CBCL; Achenbach, 1991a), which has proved both valid and reliable in research with clinical populations. Mothers completed this 113-item inventory using 3-point rating scales ranging from 0 (not true) to 1 (somewhat or sometimes true) to 2 (very true or often true). The Externalizing scale consists of aggression and delinquency syndrome subscales, whereas the Internalizing scale consists of anxiety/depression, withdrawal, and somatic complaints subscales. In the present study, \(\alpha = .93\) for Externalizing and .91 for Internalizing scales. Teachers evaluated the child’s behavior using the Teacher Report Form (TRF; Achenbach, 1991b), a measure for children ages 4–18, similar to the CBCL. In the present study, TRF externalizing \(\alpha = .94\), and internalizing \(\alpha = .91\). Mothers’ CBCL reports were significantly and positively intercorrelated with mean TRF externalizing \((r = .315, p < .001)\) and internalizing \((r = .230, p < .01)\) behavior problems scores. Because just 61% of teachers completed the TRF at baseline and less than 50% at Time 1, only mothers’ reports were used in the subsequent analyses.

**Attitudes and beliefs.** Children’s attitudes and beliefs about the acceptability of family violence were measured with the Attitudes About Family Violence (AAFV) scale (Graham-Bermann, 1994), an instrument created for use in this study. The child was asked to rate 10 statements using a 5-point Likert-type scale on how much each statement reflects the child’s beliefs and is true. After reverse scoring positive items, the summary score indicates more negative attitudes \((\alpha = .75)\). Sample items that reflect the attitude that violence is acceptable include the belief that “people get hit because they deserve it” and that “fighting is the only way to solve a problem.” Items that reflect beliefs that violence is wrong include “family violence is against the law”, “children are upset by violence in the family”, and “children feel powerless to stop the violence.”

**Procedures, Sample Size, and Assignment to Groups**

Following institutional review board approval, mothers were recruited for participation in the study through flyers and newspaper advertisements, at social service agencies, and through shelters for battered women in five urban locations in Michigan. The
intervention programs were conducted in settings available in each community, such as existing mental health clinics, education centers, and shelter outreach programs. Notably, only 4% of the women were living in a shelter at the beginning of the study. Mothers who experienced physical conflict in their relationship with an intimate partner during the past year and who had children of either gender between the ages of 6 and 12 were invited to participate in an interview and support groups for themselves and/or their children.

A sequential assignment procedure was used to assign children to the three conditions. That is, the first 7 children were assigned to the CO condition by the project coordinator, who did not provide either intervention or evaluation. The next 7 were assigned to the CM condition, whereas the following 7 children were assigned to the CG condition in which children were put on a wait list for treatment but did not participate in either intervention. This group was systematically oversampled because of an anticipated greater drop-out rate. This mode of assigning children to conditions continued throughout the study. Data were collected at three time intervals. Note that all CG families were offered the opportunity to participate in the intervention at the end of the 10-week period and, thus, were not interviewed a third time. After mothers gave permission and children gave assent, they were interviewed at baseline by researchers blind to group assignment and separate from those who provided the intervention. They were interviewed again following the intervention (Time 1). A third interview (Time 2) was conducted approximately 8 months later for the CM and CO conditions. Mothers received $20, teachers were paid $10, and children were given a gift ($5 value) at each interview.

In all, 221 mothers and children were interviewed at baseline. There were 62 CO, 61 CM, and 58 CG children. On the basis of 0.8 power to detect a significant difference (p = .05, two-sided), approximately 60 participants were required for each study condition. A fourth group of 40 children and mothers (18%) who were interviewed at baseline did not continue participation in the study and were not assigned to either intervention condition. Of these 40, 2 were dropped for unrepresentative high income, 3 moved out of state, 12 lost housing and contact with the study, 3 lost child custody, 14 declined the second interview once contacted, 1 child developed cancer, and 1 was injured in a fire. Four moved to foster care and were not permitted to continue in the study. Analyses comparing those who dropped out of the study and those who remained showed no significant differences in terms of child age, gender or ethnicity, family income, mother’s age, marital status, or level of education, the frequency of family violence, or behavioral adjustment at baseline.

Of the 123 children in the intervention program, 7 (5.7%) were not interviewed a third time (one from each intervention condition stayed in the program but refused the interviews, and 5 dropped out after the intervention—4 of whom were from the CO group). Thus, 56 CO and 60 CM participants completed the intervention and third interview. CM and CO did not differ from CG participants on ethnicity, income, maternal age or marital status, education, child age or gender, or exposure to IPV.

Statistical Methods

Data were analyzed using hierarchical linear modeling (HLM6 software; Raudenbush, Bryk, Cheong, & Congdon, 2004). In the first model, we analyzed change that children exhibited over the course of 10 weeks for those in the CO and CM conditions relative to the CG condition. In this model, conditions were compared, and patterns associated with time were identified. Following the HLM approach, variants and commonalities in change between children could be described. This information was used to identify those children who were most helped by the program and under which conditions the program was most helpful.

Following descriptive analyses, the first model fitted the three dependent variables using full maximum likelihood (FML). By using this model, we were able to compare the two treatment groups (CM and CO) with the control group in terms of change from baseline to Time 1 (posttreatment). Repeated measures of observations were nested within individuals. Thus, the Level 1 analysis assessed main effects, or the change in a specified dependent variable from baseline to postintervention for an individual child, taking error of prediction into account. The dependent variables were internalizing behavior problems, externalizing behavior problems, and attitudes toward violence. The model, fit using HLM, was specified as follows:

$$ Y_{it} = P_{0i} + P_{1i} \times (\text{Time } t_{it}) + E_{it}, $$

where $Y_{it}$ is the value on the dependent variable for Individual $i$ at Time $t$, where $P_{0i}$ is the expected status of Individual $i$ at baseline, $P_{1i}$ is the expected change in the dependent variable, and $E$ is the within-person error of prediction for Individual $i$ at Time $t$, conditional on the individual’s change parameters. Time (Time $t_{it}$) was measured as 0 for baseline and 1 for postassessment, or time point 1.

The Level 2 analysis was designed to build on the first level by accounting for assigned treatment conditions on individual change in the outcome variables. At the second level, we specify the individual effects at Level 1 as follows:

$$ P_{0i} = \beta_{00} + \beta_{01} \times (\text{CM Group}) + \beta_{02} \times (\text{CO Group}) + R_{0i} $$

$$ P_{1i} = \beta_{10} + \beta_{11} \times (\text{CM Group}) + \beta_{12} \times (\text{CO Group}), $$

where the Level 1 effect $P_{0i}$ is defined using the main effects of the condition assignments, which were time invariant. The random term $R_{0i}$ allows each individual to vary around the average intercept and is assumed to be distributed with mean zero and variance $V_0$, and where Level 1 effect $P_{1i}$ is also defined using the main effects of the condition assignments.

In using the second model, we compared the two treatment conditions only from postintervention (Time 1) to follow-up (Time 2), controlling for baseline score. The model was specified in the same manner as the first except that time was now measured as 0 for the Time 1 postintervention assessment and as 1 for the follow-up assessment. The dependent variables were internalizing and externalizing behavior problems and violence attitudes.

A third model was added post hoc to test for the effects (variability) of nesting of individuals within groups when comparing the two treatment conditions from postintervention to follow-up on the three outcome variables, controlling for baseline score. There were 24 groups in all—12 within each treatment condition. The third model builds on the second model and was fit using HLM3:
Level 1: \( Y_{i} = P_{0i} + P_{li} \times (\text{Time } 2_{i}) + E_{i} \)

Level 2: \( P_{0i} = \beta_{00} + \beta_{01} \times (\text{CM group}) + \beta_{02} \times (\text{baseline outcome variable}) + R_{0i} \)

\( P_{li} = \beta_{10} + \beta_{11} \times (\text{CM group}) + \beta_{12} \times (\text{baseline outcome variable}) \)

Level 3: \( \beta_{00} = G_{000} + U_{00} \)
\( \beta_{01} = G_{010} \)
\( \beta_{02} = G_{020} \)
\( \beta_{10} = G_{100} \)
\( \beta_{11} = G_{110} \)
\( \beta_{12} = G_{120} \)

Pearson chi-square statistics were used to calculate the significance of change in the percentage of children in the clinical range on internalizing and externalizing behavior problems scales for each of the three treatment conditions at three time points.

**Results**

**Baseline Data**

The prevalence of IPV tactics experienced by the women within the year prior to their entering the study varied from 1 event to 252 events. The mean number of psychological maltreatment events was 69.22 (SD = 59.47), and the mean number of physical violence events was 14.87 (SD = 23.71). Children observed 89% of the incidents of psychological maltreatment and 82% of the physical violence. In order to take possible reporting bias into account, intercorrelations were calculated between IPV tactics and social desirability. There were no significant associations among the frequency of physical violence or emotional violence tactics, and whether the child witnessed these same acts, and social desirability. Mothers also reported that 30% of children were physically harmed within the last year. Of these, about 33% were harmed one time, 6 were harmed twice a week, and 9 were harmed each day. Although many mothers considered spanking as harmful to the child, three reports of suspected child abuse were filed with child protective services.

According to mothers’ reports, many of the women (70%), some of the children (12%), but only 0.5% of the abusers sustained a physical injury as a result of the most violent episode in the last year. Of mother injuries, 31% were mild and required no intervention (bruises, swelling), 33% were moderate (cuts, sprains, bite marks), and 20% were severe, requiring immediate medical attention (broken bones, stabbings, concussions).

Table 1 shows the means and standard deviations for the outcome variables of externalizing and internalizing behavior problems and attitudes toward violence and the percentage of children in the clinical range for each of the three conditions at baseline, posttreatment, and at follow-up. There were no significant gender differences at baseline in outcome variables. There were significant differences at baseline in mean externalizing and internalizing problems scores when comparing the CM with the CO condition such that those in the CM condition had higher scores for each of these outcomes. Significant change in the percentage of children in the clinical range on externalizing problems from baseline to posttreatment (Time 1) was found only for those in the CO condition, \( \chi^2(1, 60) = 4.03, p < .05 \), and the CM condition, \( \chi^2(1, 59) = 22.28, p < .001 \). There was a 48% reduction of those in the clinical range for the CM condition and a 28% reduction for the CO condition. At follow-up, there was a 77% reduction for the CM condition and a 50% reduction for the CO condition. Long-term change in the percentage of children in the clinical range on externalizing problems at follow-up was significant for the CM condition, \( \chi^2(1, 59) = 17.35, p < .001 \), but not for the CO condition, \( \chi^2(1, 55) = 0.92, p = .338 \), with the CM group showing a 79% reduction from baseline to follow-up (Time 2). All three conditions showed significantly fewer children in the clinical range.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Child + mother (CU)</th>
<th>Comparison group</th>
<th>Child only (CO)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M ) ( SD ) %</td>
<td>( M ) ( SD ) %</td>
<td>( M ) ( SD ) %</td>
</tr>
<tr>
<td>Externalizing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>14.79</td>
<td>8.38*</td>
<td>34</td>
</tr>
<tr>
<td>Post</td>
<td>12.79</td>
<td>8.50</td>
<td>21</td>
</tr>
<tr>
<td>Follow-up</td>
<td>10.41</td>
<td>7.19</td>
<td>7</td>
</tr>
<tr>
<td>Internalizing</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Baseline</td>
<td>17.10</td>
<td>12.34*</td>
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<tr>
<td>Post</td>
<td>11.29</td>
<td>10.94</td>
<td>11</td>
</tr>
<tr>
<td>Follow-up</td>
<td>10.66</td>
<td>8.91</td>
<td>7</td>
</tr>
<tr>
<td>Attitudes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>30.60</td>
<td>5.52</td>
<td>29.14</td>
</tr>
<tr>
<td>Post</td>
<td>27.71</td>
<td>4.41</td>
<td>30.06</td>
</tr>
<tr>
<td>Follow-up</td>
<td>27.94</td>
<td>4.37</td>
<td>28.58</td>
</tr>
</tbody>
</table>

* CM versus CO, \( p < .01 \).  * CM versus CO, \( p < .001 \).
range on internalizing problems posttreatment: CO, $\chi^2(1, 60) = 10.67, p < .001$; CM, $\chi^2(1, 59) = 23.02, p < .001$; CG, $\chi^2(1, 59) = 30.30, p < .001$, with further significant reductions for children in the intervention program at follow-up. Although there was a 24% reduction in the percentage of children with clinical range internalizing scores without treatment from baseline to Time 1, there was a 65% reduction for the CM condition and a 35% reduction for the CO condition.

**Results of Analyses Comparing Three Treatment Conditions From Baseline to Posttreatment**

In order to compare the three conditions simultaneously from baseline to posttreatment, we used a two-level fully unconditional HLM in the first analysis to determine the amount of variance in outcomes both between conditions and over time. These results are shown in Table 2. When fitting the model, there were significant differences at baseline in the mean internalizing problems scores for the CM and the CO conditions compared with the CG condition ($\beta_{01}$, $\beta_{02}$). No significant mean differences between the CO and the CG conditions and the CM and CG conditions were found at baseline for externalizing problems or attitudes. The variance of the random intercepts in the HLM was found to be significantly greater than zero after fitting this model.

The effect of the CM condition relative to the CG condition over time was negative and significant for externalizing problems and attitudes about violence ($\beta_{11}$). Therefore, individual CM children displayed significantly greater improvement from baseline to postintervention relative to controls in externalizing behavior problems and attitudes in the two-level model comparing change in individuals assigned to different conditions. There was a significant difference in time slope for individual CG children when compared with the CG children on the internalizing outcome, indicating higher scores over time without intervention ($\beta_{10}$).

Analyses showed a trend for greater time slope, indicating improvement for CO relative to CG children on attitudes about violence ($\beta_{12}$).

The effect size for repeated measures in randomized trials was calculated as the estimated fixed effect divided by the square root of the total variance associated with an outcome, or the sum of the two variance components in the HLM (Raudenbush, Bryk, Liu, & Congdon, 2005). Using Cohen’s (1988) effect size categorization, there was a small effect for the change in the CM condition externalizing slope (ES = 0.23) and the CG condition internalizing slope (ES = 0.29) and a small to medium effect for CM condition change in the attitudes about violence slope (ES = 0.41).

**Results of HLM Analyses Comparing Intervention Groups From Posttreatment to Follow-Up**

Our analyses of long-term change allowed us to compare the CM condition with the CO condition, and we found a fixed (main) effect for baseline score at Level 1 ($\beta_{02}$) for all three outcome variables (see Table 3). However, controlling for baseline score, individual children in the CM condition made significantly greater changes in externalizing behavior problems from posttreatment to follow-up when compared with children in the CO condition ($\beta_{11}$; see Figure 1). The CM condition change in the slope showed a large effect (ES externalizing = 0.65). There was significant effect of the CO condition relative to the CM condition, indicating greater individual child change over time in attitudes about violence for the CO condition ($\beta_{10}$). The change in slope from posttreatment (Time 1) to follow-up was positive and significant, indicating that individual CO children had developed more deleterious attitudes about violence over time (ES = 1.07).

When testing the third model, no significant group-specific effects were found for any of the dependent variables. The final

### Table 2

**Effects of Child-Plus-Mother (CM) and Child-Only (CO) Interventions Compared With Wait-List Comparison (CG) for Externalizing and Internalizing Behavior Problems and Attitudes About Violence (Baseline to Posttreatment)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Externalizing</th>
<th>Internalizing</th>
<th>Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\alpha$</td>
<td>$SE$</td>
<td>ES</td>
</tr>
<tr>
<td><strong>Fixed effect</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intercept, $\beta_0$</td>
<td>2.55</td>
<td>0.12***</td>
<td>2.40</td>
</tr>
<tr>
<td>CM condition, $\beta_{01}$</td>
<td>$-0.23$</td>
<td>0.15</td>
<td>$-0.53$</td>
</tr>
<tr>
<td>CO condition, $\beta_{02}$</td>
<td>0.17</td>
<td>0.16</td>
<td>$-0.06$</td>
</tr>
<tr>
<td>Posttreatment slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slope (control), $\beta_{10}$</td>
<td>$-0.12$</td>
<td>0.12</td>
<td>.11</td>
</tr>
<tr>
<td>CM condition, $\beta_{11}$</td>
<td>$-0.26$</td>
<td>0.14*</td>
<td>.23</td>
</tr>
<tr>
<td>CO condition, $\beta_{12}$</td>
<td>0.01</td>
<td>0.14</td>
<td>.01</td>
</tr>
</tbody>
</table>

| **Random effect** | | | | | | | | | |
| Level 1: Residual Variance | 0.55*** | | | 0.38*** | | | 110.98 |
| Level 2: Intercept (Vo) Variance | 0.69*** | | | 0.53*** | | | 4.66 |

Note. ES = effect size; (Vo) = variance of the random term.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. 
estimations of the Level 3 variance components were 0.0001 (SD = 0.011, p = .500) for internalizing, 0.0003 (SD = 0.017, p > .500) for externalizing, and 0.807 (SD = 0.898, p > .112) for violence attitudes.

Discussion

Short-Term Changes From Baseline to Postintervention in Externalizing Problems and Attitudes

We tested the effects of an ecological approach in this intervention study, in which mothers and children were provided support by addressing their needs with a community program; the expectation was that risks to the child would be reduced when both child and mother received help. The hypothesis that children who received the intervention would have lower levels of externalizing and internalizing problems and more improved attitudes about violence posttreatment than comparison children who did not participate in the intervention was only partially supported. Results of the HLM analyses indicate that only the CM intervention condition was effective in changing children’s externalizing problems in adjustment and their attitudes concerning violence. That is, small to moderate effects were found for changing externalizing behavioral problems and violence attitudes when children were in the CM condition but not in the CO condition relative to those who received no intervention services.

Consonant with other researchers who advocate a multicomponent approach to intervention, we found greater success in improving attitudes and reducing aggression when treating both the parent and child (Kumpfer & Alvarado, 2003). The finding of greater effects for the CM group is not surprising, given that the mothers’ groups were focused on improving parenting skills, including the ability to talk with the child about violence and to respond to the child’s concerns.

We hypothesized that the program also would be effective for children with clinical range behavior problems. The reductions in externalizing behavior problems for diagnosable children echo those found by Jouriles and colleagues (Jouriles et al., 2001), whose IPV intervention successfully treated children diagnosed with oppositional defiant disorder or conduct disorder. Both intervention programs focused on teaching parents to modify the child’s behavior by improving disciplinary skills and strategies. Our findings reflect those of other researchers who examined interventions for children with high levels of specific problems, such as children who are aggressive (Kumpfer & Alvarado, 2003). However, it is important to note that although no children moved from nonclinical to clinical diagnosable levels, approximately one fourth (24%) of the children in the no-treatment condition dropped from the clinical range on externalizing problems over the baseline to the Time 1 period. We know little about the spontaneous remission of children with diagnosable problems of any sort following exposure to IPV.

Figure 1. Comparison of slope change in externalizing problems for child-plus-mother (CM) and child-only (CO) conditions from posttreatment (Time 1) to follow-up (Time 2), controlling for baseline score.
Short-Term Changes From Baseline to Postintervention in Internalizing Problems

Results for reducing internalizing behavior problems are less clear. In the HLM analysis, neither intervention condition was more successful in reducing children’s internalizing problems than the no-treatment condition. This community-based intervention study included children considered to be at risk for developing psychopathology rather than restricting the sample to those with diagnosable problems. Yet, when those in the clinical range in all three groups were compared, significant reductions in the percentage of children with clinical-level internalizing problems were found. There were fewer children in the CM condition (65% fewer clinical range) and in the CO condition (35% fewer clinical range) relative to the no-treatment controls from baseline to Time 1. No significant spontaneous remission was found for children with clinical range internalizing problems without treatment. Once again, the CM condition showed change in clinical range internalizing problems (a 48% reduction), as did the CO condition less so (a 28% reduction).

Other researchers have successfully reduced anxiety in children by increasing their skill in managing affect and interpersonal relationships, tasks similar to those in the programs tested here (Cloitre et al., 2002). Although there is some preliminary evidence that children diagnosed with internalizing difficulties may be helped by this intervention program, there were few children in each category in each condition. Additional research is needed to test the efficacy of this program with children diagnosed with anxiety or trauma.

Long-Term Changes From Baseline to Follow-Up

The third hypothesis, that CM children would show greater long-term changes than CO children, received partial support. The follow-up evaluation showed that slope changes in children’s externalizing problems were maintained over time and that children in the CM condition continued to make significant improvement in externalizing problems relative to the CO condition. There was no significant slope change in internalizing problems or attitudes about violence over time for CM condition children. These findings suggest that the combination of parent training and child therapy is more effective in reducing aggressive behaviors over time than child treatment alone. Once again, our findings are much like those of Jouriles and colleagues (2001), whose program also had a long-term follow-up period. Although the change in attitudes about violence was maintained for CM children, there was significant deterioration in attitudes for individual CO children, suggesting that mothers may influence their children’s beliefs and attitudes about violence after participating in the intervention program themselves. Still, there are few programs for children exposed to IPV with long-term evaluations with which our results can be compared.

Small to moderate level effects were found for the baseline-to-posttreatment analyses, and larger effects were found for the posttreatment-to-follow-up analyses, taking baseline into account. Our findings for externalizing problems approach those reported in meta-analyses of youth psychotherapy treatment studies that typically show unweighted effects in the .71–.77 range (Weisz et al., 2005).

The CM condition was clearly more effective in reducing the percentage of children in the clinical range from posttreatment to follow-up (a 77% reduction in internalizing and 79% reduction for externalizing) relative to the CO condition. These results give support to the hypothesis that the CM treatment program was also effective for children with diagnosable problems. It is important to note that the program was situated in the community, was 10 weeks in length, and was in a group format, which is generally more affordable and accessible than long-term individual or parent–child psychotherapy.

Limitations

A clear pattern of preliminary results emerged to suggest that the intervention program significantly changed the adjustment of children with clinical range scores when both the child and mother participated in treatment. The children in this study were targeted for treatment on the basis of their exposure to an environmental stressor (IPV), with many having no or low diagnosable levels of symptoms. Thus, the approach included both prevention and intervention. In order to further distinguish the program’s treatment value, it should be tested with samples of diagnosed children in both control and treatment groups. Similarly, in order to assess its prevention value, another study of children with no or low symptoms should be included in both intervention and control groups.

Other factors may be considered in interpreting these results. First, the findings of the present study are limited to this sample of children and families—those who were interested in joining the evaluation study and seeking help for their children. The participating communities ranged from small to large cities in the Midwest. The sampled families also were nationally unrepresentative in terms of being low income as well as having a high percentage of ethnic minority families. These features limit generalizability of results.

Several unique features of this study have contributed to our knowledge of both women’s and children’s experiences with IPV. By asking about the women’s history of abuse, we learned that, for this sample, the average length of violence exposure was 10 years, in essence the entire life of most of the children in this study. Although more than half of mothers did not report having a prior violent relationship, the stability of the most recent violent relationship was notable. Furthermore, even though only 17% of the mothers were living with a violent partner at the time of the study, two thirds of the remaining mothers still had contact with their violent partner. These results suggest that even though mothers may leave an abusive relationship, the majority of children remain in contact with the abuser, especially if that person is the child’s parent. The quality of these contacts can vary substantially, as noted by Jaffe, Poisson, and Cunningham (2001), who described the relationships of children and abusive fathers during separation and divorce. Future efforts to describe the child’s experiences would do well to include the child’s relationship with fathers and father figures and to assess significant events that may have taken place between the end of treatment and follow-up.

The present study included a measure of reporting bias. However, the alpha of the social desirability scale was only .70, which limited its utility in this study. In addition, rather than assume that the child had been exposed to IPV, as is the case in virtually every study of children exposed to IPV, we tried to ascertain the child’s
actual exposure by asking mothers whether the child was an eyewitness to the conflict tactics the mother reported. Holden (2003) described such efforts as essential for improving work and the comparability of studies in this area. Although the CTS is still used in the majority of studies of family violence, it is limited as a measure of children’s exposure to violence, as it confines a number of different tactics that may occur in the same violent incident. Given that parents are found to underestimate and under-report the amount of violence that their child may have seen (as noted by Jaffe et al., 2001; Jouriles, Mehta, McDonald, & Francis, 1997), children’s reports of their own violence exposure would have strengthened the study. Clearly, other measures that take the child’s perspective and those that distinguish episodes of violence from the frequency of violence tactics are needed.

In the present study, we relied on mothers’ self-report for main constructs (with the exception of child attitudes), which may have limited results. It is also possible that our results could have been influenced by a Hawthorne-like effect, namely that mothers who invested more time and energy may have been more prone to report positive gains than mothers who invested less and who received less attention. In brief, there remains the need for external reports in real settings if this potential bias is to be circumvented.

A measure of treatment fidelity would have enhanced confidence in the implementation of the program. Ideally, videotaped sessions coded by independent researchers would be used to assess therapists’ fidelity to stated treatment manual goals. The study is further limited in its use of participant assignment procedures. The sequential assignment method included gathering groups of children (enough to start a group) into a cluster and may have contributed to the differences in baseline scores. It is possible that participants may have called to signal their interest in the study in clusters or had some groups of families show a stronger response to recruiting efforts in some communities or shelters. However, it was logistically impossible to create groups of children for intervention when they lived in disparate communities. True random assignment would have strengthened the study and, perhaps, eliminated some of the between-groups baseline differences. In the future, studies of intervention for children exposed to IPV could be undertaken in settings with a large population of such children (such as schools in large cities) so as to ensure a more residentially homogenous sample that could then be randomly assigned to conditions.

We identified differences in change between different types of groups. Yet, the processes of change remain unexamined. Group effectiveness could be attributed to many variables beyond the content of the different programs described in this study, such as group leader education and skill, group gender balance or psycho-pathology composition, or within-group processes and chemistry. Similarly, each individual component of the children’s and mothers’ groups was not evaluated to ascertain whether some aspects of the programs were more effective than others. Such process and group demographic variables should be examined in future studies in order to add to researchers’ understanding of why some groups or some sessions may have been more effective than others.

Although the program was successful in retaining families when the child and/or the mother participated in the intervention, there was a significant difference in attrition for those who received treatment compared with those assigned to the comparison group. Clearly, when people received help, they were more likely to stay in the program and to participate in follow-up (94%) compared with those who had to wait for services (82%). The importance of comparison groups cannot be overstated for interpreting change over time in child outcomes, yet there are challenges to asking families in need to wait 10 weeks for their chance to receive intervention, as was the case with the control families in this study. The issue of missing data also needs to be considered here. Perhaps the families who did not participate in the follow-up did not benefit from treatment as much as those who completed all three interviews, thereby leading to an overestimation of treatment effects. Conversely, children and mothers who dropped out of the wait-list condition may have gotten worse, leading to an underestimation of the effect of the intervention. Perhaps many of these families sought help elsewhere. In brief, researchers need to know more about the typical pattern of service use by IPV families and factor this into the intervention evaluation model.

Clinical Implications

Although these results suggest that the intervention program for mothers and children was effective in reducing some negative outcomes for the child and, hence, has promise, it remains to be shown whether this intervention can translate from the community–university partnership model used in this study to other settings. Other studies have suggested that training contexts may differ when someone other than the original author directs the program. Clearly, careful replication and additional evaluation of this program is needed with children in other clinical settings.

Principles of effective prevention and intervention programs are postulated as being comprehensive and theory driven, having varied teaching methods and appropriate timing, providing sufficient dosage, providing opportunities for positive relationships, being socioculturally relevant, and having well-trained staff and extensive evaluations (Nation et al., 2003). Furthermore, evaluation studies of programs designed to enhance parent effectiveness show that minority clients prefer the group format to individual treatment (Webster-Stratton & Hammond, 1997). The program evaluated in this study embodied these principles and aimed to enhance children’s social competence, reduce adjustment problems, and enhance coping in the face of their exposure to family violence.

There is some question as to whether interventions should be provided for all children needing services (so-called one-size-fits-all programs) or whether interventions should be tailored for specific groups of children exposed to IPV (e.g., only aggressive children or only boys). Although there are generally inconsistent findings as to whether adjustment problems differ by gender following exposure to IPV (Yates et al., 2003), no significant gender difference was found in our study at baseline, suggesting that gender-specific interventions may not be indicated. Given the range of problems that have been identified for these children and how little researchers know about the effectiveness of interventions designed to help them, it appears that studies that report...
evaluations for children living in the community as well as those residing in shelters—studies that test specific, targeted interventions and those that address a broader range of problems—are all needed. The field of evidence-based intervention studies for children exposed to IPV has only begun to develop. So little is known that it is too early to indicate whether there is an ideal solution to the multiplicity of problems faced by these children.

In conclusion, the difficulties inherent in evaluating effective interventions for children exposed to IPV are notable, but we believe that the search for appropriate interventions for this population of children can be fruitful. The results of this study give preliminary evidence of some of these children’s specific needs, of distinctions in their behavior, and whether they can be helped. As theoretical models that describe and account for the kinds of problems experienced by children exposed to IPV continue to be developed and tested, we can continue to devise and refine interventions that address these processes to better serve their needs.

References


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