The Impact of Family and Community Violence on Children's Depression Trajectories: Examining the Interactions of Violence Exposure, Family Social Support, and Gender

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This longitudinal study used multilevel modeling to examine the relationships between witnessing intimate partner violence (IPV), community and school violence exposure (CSVE), family social support, gender, and depression over 2 years within a sample of 100 school-aged children. We found significant between-child differences in both the initial levels of depression and the trajectories of depression; depression over time was positively associated with change in witnessing IPV and CSVE and negatively associated with change in support. Two significant 3-way interactions were found: Gender and initial support, as well as gender and initial witnessing IPV, both significantly moderated the effect of change in witnessing IPV on the children's depression over time.

Keywords: witnessing intimate partner violence, community and school violence exposure, family social support, children's depression, longitudinal multilevel modeling

Though parents may try to prevent their children's exposure to intimate partner violence (IPV) within the home, child witnessing is not uncommon: A recent Bureau of Justice study (Smith & Farole, 2009) found that just over one third of all IPV cases in large urban counties involved children who were present. For many children, violence in the home is not an isolated event. Conflict may be ongoing and co-occur with other forms of violence (Gewirtz & Edleson, 2007). For example, children and adolescents who witness IPV are at greatly increased risk for experiencing community violence (Hughes, Humphrey, & Weaver, 2005; Mrug, Loosier, & Windle, 2008; Saunders, 2003; Turner, Finkelhor, & Ormrod, 2006). In advancing a theoretical explanation for the co-occurrence of family and community violence, research has focused on common risk factors (e.g., environmental conditions such as impoverished urban setting and family-level characteristics such as stepparent families) and the dynamic, reciprocal nature of the relationships between different forms of violence over time (Finkelhor, Ormrod, & Turner, 2007; Mrug et al., 2008), with cumulative exposure to multiple forms of violence related to heightened risk for child mental health problems (Turner et al., 2006).

Research findings suggest that children's witnessing, particularly when they feel threatened and afraid, contributes to

physiological arousal combined with increased cortisol levels, difficulties in affect regulation, and heightened self-blame that in turn are associated with depression or other internalizing problems (Cummings & Davies, 2002; Morris, Silk, Steinberg, Myers, & Robinson, 2007; Saltzman, Holden, & Holahan, 2005). For children who are in middle childhood (i.e., between the ages of 6 and 12 years), exposure to violence and its sequelae poses specific developmental challenges, as it can affect their ability to adapt to increasing academic demands and build reciprocal relationships with peers, both key tasks for this stage (Huston & Ripke, 2006; Margolin & Gordis, 2000). Mental health problems during middle childhood can in turn lead to heightened risk in later developmental stages: Experiencing depression during childhood appears to predispose youths, particularly girls, toward depression in adolescence and adulthood (Kovacs & Devlin, 1998; Leve, Kim, & Pears, 2005).

Grych and colleagues (Grych & Fincham, 1990, Grych, Fincham, Jouriles, & McDonald, 2000, Grych, Jouriles, Swank, McDonald, & Norwood, 2000) analytically explored how children's understanding of interparental conflict plays an important role in shaping the impact of exposure, thus contributing to internalizing problems. In Grych and Fincham (1990), conflict is understood as ranging along a continuum in terms of frequency, content, and intensity (i.e., from calm discussion to violence), with greater intensity associated with more problems. Their work with both community and domestic violence shelter samples of middle-school aged children (Grych, Fincham, et al., 2000) indicated that children's appraisals of threat and self-blame were significant mediators of internalizing problems, with boys from the shelter sample reporting higher levels of threat, self-blame, and depression than girls. Related, lon-

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gitudinal work suggests that appraisal of threat declines overall as children transition to adolescence, with level of threat positively associated with exposure to marital conflict, particularly among girls (Richmond & Stocker, 2007). Other longitudinal studies of children who have witnessed IPV and are maturing from childhood to adolescence have found girls are more susceptible to internalizing problems (Sternberg, Lamb, Guterman, & Abbott, 2006). In contrast to these results suggesting differences by gender, Grych, Jouriles, and colleagues' (2000) cluster analysis of adjustment patterns among children of battered women found no gender effects by cluster. Further, two meta-analyses of the witnessing IPV literature found few differences by gender overall (Kitzmann, Gaylord, & Kenny, 2003; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003).

Although empirical evidence indicates that exposure to violence among children and adolescents poses a risk to their optimal development, risk and resilience researchers have examined ways in which protective factors, such as social support, can ameliorate the effects of such risks on various outcomes. Early work in this area suggested that high-risk children who also experienced relatively high levels of support (e.g., a warm relationship with their mother) had a lower rate of poor outcomes relative to comparable high-risk children with low levels of family social support, suggesting that diverse outcomes among children facing multiple risks were the norm rather than the exception (Garmezy, 1983; Rutter & Rutter, 1993). Researchers have continued to explore the ways in which support may buffer the impact of risks, particularly when examining risk factors that occur outside of the family such as community violence. The empirical literature on the relationships between youths' community violence exposure, internalizing symptoms, and family social support is very well developed, and indicates that support can play a significant protective role in the relationship between exposure and youths' depression and anxiety, either as a main effect (Kliewer et al., 2004; Youngstrom, Weist, & Albus, 2003) or a moderating variable (Hammack, Richards, Luo, Edlynn, & Roy, 2004; Kliewer, Lepore, Oskin, & Johnson, 1998); none of the studies found gender differences.

Though most researchers have assessed depression and anxiety in combination (i.e., internalizing symptoms), a few studies have examined them separately and found community violence-related anxiety more amenable to family support moderation, in comparison to depression (Hammack et al., 2004), suggesting the conceptual and methodological importance of disentangling the relationships between different forms of violence, support, and specific outcomes among youths. Our recent work adds to these findings related to community violence exposure. Using the same dataset as the current study (i.e., the same procedures, sample, and measures), and grounding our analysis and interpretation in Bronfenbrenner's (1979) ecological theory as well as risk and resilience theory, we examined the relationships between anxiety, community and school violence exposure (CSVE), witnessing IPV, and family social support. We found that change in support moderated the effects of change in CSVE—though not the effects of

change in witnessing IPV—on children's anxiety over time. In other words, though the relationship between CSVE and anxiety was significantly ameliorated by support, witnessing IPV was not. Our results revealed gender differences: Among girls, change in support functioned as a main effect, with redundant support inversely associated with anxiety over time; for boys, change in support was moderated by initial levels of support, with change in violence exposure most strongly related to anxiety for those boys with high initial support that subsequently declined over time (Kennedy, Bybee, Sullivan, & Greeson, 2009). Thus, these findings add to the literature on community violence exposure and child outcomes, with a particular focus on how family social support can buffer the effects of community violence on children's anxiety levels.

In contrast to this body of work focusing on community violence exposure, research examining the relationships between youths' witnessing of conflict and IPV, internalizing symptoms, and family social support as a potential protective factor is in the early stage. The few studies that have been done have oftentimes focused on externalizing problems (e.g., aggression) instead of depression or anxiety, and have examined variants of maternal–child attachment as the support variable, rather than a broader conceptualization of family social support; none, to our knowledge, have included co-occurring community violence exposure. Overall, the developing literature suggests that different forms of family social support can buffer the effects of witnessing IPV on children's outcomes (El-Sheikh & Elmore-Staton, 2004; Formoso, Gonzales, & Aiken, 2000; Johnson & Lieberman, 2007; Skopp, McDonald, Jouriles, & Rosenfield, 2007), though a few studies have failed to demonstrate any protective role for support (Harper, Arias, & House, 2003; McCloskey, Figueredo, & Koss, 1995). Within the studies that have documented a role for support, when gender interactions were examined researchers have typically found significant gender effects, though these effects are not consistent. For example, although El-Sheikh and Elmore-Staton (2004) found that parent–child attachment buffered the effects of witnessing IPV on internalizing problems among the girls in their sample, it had no effect on the boys. Skopp and colleagues (2007) found a different pattern in their study of maternal warmth, partner-to-mother aggression, and externalizing problems: Among both girls and boys, maternal warmth buffered the effects of aggression on externalizing problems, though for girls this effect was most marked at higher levels of aggression whereas for boys it was most evident at lower levels.

To summarize the literature, witnessing IPV is associated with other forms of violence such as community violence, as well as internalizing problems such as depression. Specific mediators such as the child's perceived level of threat and self-blame have been identified as key predictors of internalizing problems. In addition, support has been explored as an important moderator of the effects of witnessing IPV on child outcomes, though this literature is in the beginning stages. Almost all of these studies have been cross-sectional, and none of the research on witnessing IPV, support, and mental health has included community vio-

lence as a potential co-occurring risk factor. Very few studies have sought to disentangle the relationships between distinct forms of violence, support, and specific mental health outcomes (i.e., depression alone vs. in combination with anxiety). Across these studies, the gender-related findings have been equivocal: Sometimes no gender differences are reported, although other times one gender appears to be at greater risk for poor outcomes. These inconsistent findings may be at least partially explained by the various ways that conflict/IPV and support have been measured, the different outcomes that have been examined (e.g., internalizing problems vs. externalizing problems, both of which have been found to differ by gender), and the statistical approaches that have been used (e.g., interaction vs. mediation vs. main effects).

The current study sought to contribute to the emergent literature in this area by examining the relationships between witnessing IPV, CSVE, family social support, gender, and depression within a diverse, longitudinal sample of school-aged children from families in which IPV had recently occurred. We used a developmental risk and resilience framework to guide our work (Gewirtz & Edleson, 2007), and focused solely on depression as our outcome variable for several reasons. First, though depression and anxiety are both characterized by negative affect and can co-occur, they have been shown to be distinct within both adult and child samples, with anhedonia (low positive affect) specific to depression and physiological hyperarousal associated with anxiety (Clark & Watson, 1991; Lambert, Joiner, Schmidt, McCreary, & Ialongo, 2004). Lending evidence to this distinction, a few studies have found that support may play a differential moderating role based on the form of violence and the specific type of outcome examined (Kennedy et al., 2009). As research on risk and resilience among children advances, there is both a conceptual and methodological need to disentangle the effects of different forms of violence on specific types of mental health outcomes, and the particular role of support as a moderator of these effects. Second, late childhood—the developmental stage of the current sample—is the risk period associated with onset of depression, with childhood depression associated with an increased risk of adolescent and adult depression (Kovacs & Devlin, 1998). Thus, depression is a particularly salient mental health issue within the sample. Third, although gender differences in depression begin to manifest in early adolescence, with girls showing higher levels (Hankin et al., 1998), researchers longitudinally examining the relationships between witnessing IPV and depression among children have found differences by gender, with girls showing more negative outcomes over time (Sternberg et al., 2006). The current study can contribute to this emergent literature on gender differences in depression during late childhood among children who have witnessed IPV. Fourth, given the complexity of the analysis of between-child, within-child, and cross-level main and interaction effects over time, a sole focus on depression seemed the most parsimonious choice in terms of conceptualizing the model and interpreting the findings. The following questions were explored, using data collected for 2 years across six time points: What are the effects of witnessing IPV and CSVE, initially and over time, on both the children's initial depression and their depression trajectories? Does family social support and/or gender moderate the relationship between witnessing IPV and depression, and CSVE and depression, both initially and over time? Does initial violence exposure moderate the effects of change in violence exposure on depression over time? If yes, how so?

Method

Participants

Participants were part of a larger study of the lives of women who had experienced IPV, as well as the lives of their children ($N = 160$ families). The larger study was designed to evaluate the effectiveness of a 4-month advocacy intervention for the women and children. The method described here parallel those described in our earlier study (Kennedy et al., 2009). Families were randomly assigned to receive either services ordinarily available in the community or the advocacy intervention (a psychoeducational support group for the children and an advocate for each of the mothers). To be eligible for the study, a woman had to have at least one school-aged child willing to participate, to agree to be interviewed six times over 2 years, and to have experienced physical violence from a male partner during the 4 months prior to enrollment in the study. If a family had more than one interested child, a target child was randomly chosen. Of the 160 target children, 100 were at least 8 years of age and able to complete the measures; this group of older children comprised the current study sample.

Within the study sample of children, 45% were African American, 29% White, 23% multiracial, and 3% Hispanic; 44% were in the intervention group, 61% were male, and the average age was just under 10 years ($M = 9.90$, $SD = 1.48$). Retention rates for this sample were above 80% at each time point: 81%, 84%, 83%, 82%, and 81%. Data were obtained at all six time points for 62% of the participants, at five for 19%, at four for 4%, at three for 4%, at two for 5%, and at one for 6%. Participants with missing observations did not differ from those with complete data on any baseline children's variables (e.g., age, gender, race, depression, support, witnessing IPV, CSVE) or mothers' variables (e.g., mother's relationship to assailant, IPV, support, depression).

Procedure

Families were recruited from three sites in a medium-sized Midwestern city: the county prosecutor's office responsible for issuing personal protection orders (26%), a domestic violence shelter (32%), and a community-based organization supporting women who had experienced IPV following police involvement (42%). Time 1 (T1) interviews were conducted 2 to 3 weeks after recruitment. To avoid interviewing families in crisis, women recruited from the shelter were not interviewed until after they had left the shelter. For the children to participate in the study, they had

to assent to participation and their mothers had to provide consent. The study was approved by the university's Institutional Review Board (IRB). One-on-one interviews in the home with individual children averaged 65 to 97 min (*SD*s = 18 to 31 min), and were audiotaped. Child participants were compensated with their choice of $5 or a $5 toy at T1 and $10 or a $10 toy at subsequent interviews. In the first year of the study, follow-up interviews (2, 3, and 4) were scheduled at 4-month intervals to adequately assess changes following the 4-month intervention. During the second year, the remaining interviews (5 and 6) were scheduled at 6-month intervals. To characterize this range of time intervals and accurately calibrate change over time, we computed a time variable to reflect the number of months from the first interview to each subsequent interview; time was centered at zero on the date of the initial interview.

Measures

Witnessing IPV. Participants' exposure to their mothers' abuse by her male partner during the previous 4 months was assessed using a 4-item Child Report of Witnessing IPV scale (Allen, Wolf, Bybee, & Sullivan, 2003). The children were asked if they had seen or heard him call her names or say things to make her feel bad, yell at her, threaten to hurt her, or physically hurt her. Participants reported the frequency of their exposure to each item using a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*more than 4 times a week*), the items were then averaged. Internal consistency ranged from .78 to .92.

CSVE. Children's exposure to community and school violence was assessed with a modified version of the Richters and Martinez's (1990) Things I Have Seen and Heard scale. The original scale included 20 items assessing community and family violence; this study used 7 items focused on community violence exposure. Six additional items assessed children's school experiences. Frequency of exposure was assessed on a 4-point Likert-type scale ranging from 1 (*never*) to 4 (*a lot*); scores were averaged across the 13 items. The original scale has demonstrated good test–retest reliability with a sample of young, poor, predominantly African American children (*r* = .81; Richters & Martinez, 1993); internal consistency for the modified scale across the six interviews ranged from .65 to .81.

Family social support. Participants' support from family members was assessed using a modified version of the Seidman et al. (1995) Social Support Microsystem Scale. Children were asked if six family members, ranging from their mother and father (if he was not the assailant) to their cousins, were important to them. Assailant fathers were not included because preliminary analysis indicated they had limited contact with the children over time, and provided negligible support even if contact were present. If yes, they were asked to rate each person's helpfulness, and how much fun it was to be with the person using a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*a lot*), items were averaged to yield a composite score. The original scale showed adequate internal consistency within a diverse sample of 998 school-aged children (Cronbach's α = .75).

Across the six time points, internal consistency ranged from .67 to .85.

Depression. The Children's Depression Inventory (CDI; Kovacs, 1985) assessed participants' depression. The 27-item CDI ascertains the presence and severity of depressive symptomology within the last 2 weeks in youths aged 6 to 17 years (Kovacs, 1985). Items used a 3-point scale ranging from 0 (*not at all*) to 2 (*a lot*) and were averaged. The CDI is widely used and has acceptable internal consistency and test–retest reliability (Rush, First, & Blacker, 2007), as well as construct and discriminant validity (Carey, Gresham, Ruggiero, Faulstich, & Enyart, 1987); in the current study, internal consistency ranged from .83 to .88.

Analytic Approach

We used longitudinal multilevel analysis, defining children as the Level 2 unit of analysis and repeated time points nested within each child as the Level 1 unit, to examine the effects of violence exposure (witnessing IPV and CSVE), family social support, and the interactions of violence exposure, support, and gender on participants' level of depression across six time points over two years. The analysis was conducted with HLM 6 software using full maximum likelihood estimation to statistically compare nested models (Raudenbush, Bryk, & Congdon, 2005). Robust estimation was used to handle anticipated skew in the measure of depression (Raudenbush & Bryk, 2002). Cases with missing data were retained in the analysis, using HLM to weight the contribution of individual cases based on the number of observations. We used pattern mixture modeling (Hedeker & Gibbons, 1997) to assess possible bias related to extent of missing values; no bias was found. Statistical power was estimated using methods of Raudenbush and Liu (2000). With 511 observations across 100 children, power to detect a medium-sized effect (γ = .5) at $p <$ .05 exceeded .95 for within-person and .80 for between-person associations. Power for cross-level interactions is difficult to estimate given the complexity, but overall appeared to exceed .70 to detect large effects (γ = .8).

Models were developed to analyze the between-person, within-person, and cross-level effects on children's depression of witnessing IPV, CSVE, and family social support, and the interactions of gender, the violence variables, and support. First, we examined both the initial levels of depression and the trajectories of change in depression over the six time points in an unconditional model in which both the intercepts and slopes were allowed to vary randomly; depression change trajectories were found to be linear, with model fit not improved significantly by addition of a curvilinear (i.e., quadratic) effect of time. Next, we analyzed the effects of initial between-person variability in gender, violence, and family social support, as well as the interactions among these effects, on the initial levels of depression and the linear trajectory of depression over time (Level 2 effects). In addition, we added time varying, or Level 1, predictors to the model of depression over time, to assess the effects of within-person change in violence exposure and support. Finally, we added cross-level interactions, to

examine whether the within-person effects of change in violence exposure and change in support were affected by gender and by between-person differences in initial levels of support and violence exposure.

To manage model complexity, we examined cross-level interactions involving initial levels of witnessing IPV, CSVE, and family social support in three different models. As none of the cross-level interactions involving CSVE approached significance, we focused the remaining analyses on initial levels of witnessing IPV and initial levels of support as moderators of the effects of subsequent change in witnessing IPV. Following recommendations for complex multilevel modeling (Raudenbush & Bryk, 2002), interactions that were not statistically significant, were not involved in significant higher order interactions, and did not significantly improve model fit were trimmed from the final model to optimize interpretability and decrease collinearity.

To avoid redundancy and clearly separate the between-person effects of the predictor variables at T1 from the within-person effects of change, we computed deviation scores for each time-varying covariate by subtracting each child's initial score from subsequent scores (Singer & Willett, 2003). The resulting scores captured the extent of change at each time point relative to the initial observation of witnessing IPV, CSVE, and family social support. The cross-level interactions were computed as the product of the deviated scores on witnessing IPV and the initial levels of witnessing IPV and support as well as gender. These terms reflect the moderating impact of both initial witnessing IPV and initial support on the effect of change in witnessing IPV. We grand-mean centered the continuous T1 predictors to aid interpretation and avoid multicollinearity with the interaction terms (Aiken & West, 1991). Because half of the sample was exposed to an intervention, we controlled for any influence by including the main effect of intervention assignment as a predictor of the intercept and slope of depression and testing for interactions between intervention assignment and other predictors; however, no intervention effects were observed on the depression scores at any point. Age at T1 was included in the conditional model to control for the possibility of an age confound, though age was not a significant predictor of depression.

Results

Descriptives and Bivariate Correlations

At T1, children's average level of witnessing IPV, CSVE, and depression were at their highest levels; each declined on average at each subsequent time point. For example, at T1 the level of witnessing IPV during the prior 4 months, on average, was 2.69 (SD = 0.86); by T6 the level had declined to 1.32 (SD = 0.54). Similarly, at T1 the average level of depression was 8.70 (SD = 6.60); by T6, the average level was 5.49 (SD = 5.74). Average support, in contrast, remained consistent, ranging from a T1 level of 3.47 (SD = 0.36) to 3.43 at T6 (SD = 0.40). Though children's average level of witnessing IPV decreased over time, prevalence remained high: At T1, 93% reported recently witnessing IPV, while 41% reported recent witnessing at T6. Prevalence of CSVE remained consistently high over time, with rates ranging from 88% to 95%. Witnessing IPV was positively associated with CSVE at T1, T4, T5, and T6 (rs = .26 to .37, p < .05). Child's age was inversely correlated with support at T2, T4, T5, and T6 (range of rs = −.23 to −.35, p < .05) and was negatively correlated with witnessing IPV at T2 and T5 (rs = −.22 and −.24, p < .05). CSVE was negatively associated with support at T6 (r = −.23, p < .05). Finally, depression was positively correlated with witnessing IPV at T2, T4, and T5 (rs = .24 to .27, p < .05), and with CSVE at T1 to T5 (rs = .22 to .41, p < .05). No other predictor correlations were significant.

The Unconditional Model: The Effect of Time in Predicting Depression

We first examined initial levels and trajectories of change in depression in an unconditional model containing time only. Children varied significantly in their initial levels of depression, as indicated by the significant variance of the random intercept (σ_{00} = 26.85, p < .001). Children's trajectories of depression significantly decreased over the six time points at a rate of .13 units per month (γ_{10} = −.13, p < .001). However, there was significant between-child variability in depression trajectories, indicated by the significant variance of the random slopes (σ_{10} = .03, p < .001). In addition, across children, depression trajectories were negatively associated with T1 depression, indicating that depression declined more rapidly among children with higher T1 depression (Tau correlation = −.53, p < .001).

The Conditional Model: Between-Person, Within-Person, and Cross-Level Effects on Depression of Witnessing IPV, CSVE, Family Social Support, and Gender

Model fit was significantly improved by adding the violence exposure and support variables at Levels 1 and 2, Likelihood Ratio (LR) χ^2(21) = 120.88, p < .001. Model fit was further improved by the addition of cross-level interactions of gender and initial levels of both support and witnessing IPV as moderators of the influence of change in witnessing IPV, LR χ^2(5) = 31.70, p < .001. As can be seen in the first section of Table 1, initial level of depression was significantly associated with between-person differences in initial CSVE. At T1, children with a one-unit higher score on CSVE had, on average, a 5.19-unit higher score on depression (γ_{05} = 5.19, p < .001). Initial depression was not significantly associated with T1 between-person differences in witnessing IPV, support, gender, or their interactions. After controlling for these effects on depression at T1, the effect of time remained significant, with average level of depression declining significantly over the six time points (γ_{10} = −.32, p < .05; see the second section of Table 1). The change in depression over time was not significantly related to between-person differences in initial witnessing IPV, CSVE, support, gender, or their interactions.

Table 1

Conditional Model Predicting Depression Over Time: Between-Person, Within-Person, and Cross-Level Effects

Fixed effect	Estimate	SE
Between-person effects on initial depression (β_0)		
γ_{00}: Intercept	11.22***	3.27
γ_{01}: Age	−0.31	0.32
γ_{02}: Gender	0.56	1.28
γ_{03}: Condition	1.19	1.01
γ_{04}: Initial witnessing IPV	0.87	0.60
γ_{05}: Initial CSVE	5.19***	1.19
γ_{06}: Initial family social support	−0.39	1.78
γ_{07}: Initial Witnessing IPV × Initial Family Social Support	1.10	1.40
γ_{08}: Initial Family Social Support × Gender	−4.29	3.11
γ_{09}: Initial Witnessing IPV × Gender	−1.40	1.44
Between-person effects on the linear trajectory of change in depression (β_1)		
γ_{10}: Intercept (slope)	−0.32*	0.15
γ_{11}: Age	0.03	0.01
γ_{12}: Gender	0.06	0.04
γ_{13}: Condition	−0.08	0.04
γ_{14}: Initial witnessing IPV	0.04	0.03
γ_{15}: Initial CSVE	−0.09	0.05
γ_{16}: Initial family social support	−0.01	0.07
γ_{17}: Initial Witnessing IPV × Initial Family Social Support	−0.10	0.06
γ_{18}: Initial Family Social Support × Gender	0.15	0.12
γ_{19}: Initial Witnessing IPV × Gender	0.04	0.05
Within-person and cross-level time-varying effects on depression over time		
γ_{20}: Change in CSVE (β_2)	2.77***	0.69
γ_{30}: Change in witnessing IPV (β_3)	1.08**	0.42
γ_{31}: Gender	1.19*	0.76
γ_{32}: Initial witnessing IPV	−0.47	0.41
γ_{33}: Initial family social support	0.52	1.00
γ_{34}: Initial Family Social Support × Gender	−2.44*	1.23
γ_{35}: Initial Witnessing IPV × Gender	−1.95*	0.84
γ_{40}: Change in family social support (β_4)	−1.96**	0.61

Random effect	Estimate	SD
σ_{00}: Intercept variance	21.18***	4.60
σ_{10}: Slope variance	0.01***	0.12
ε: Residual variance	10.53	3.24

Note. IPV = intimate partner violence; CSVE = community and school violence exposure.
* $p < .05$. ** $p < .01$. *** $p < .001$.

There were significant within-person effects of change in violence over time (see the third section of Table 1). On average, change in children's CSVE was positively associated with depression over time ($\gamma_{20} = 2.77$, $p < .001$), as was change in their witnessing IPV ($\gamma_{30} = 1.08$, $p < .01$). A one-unit increase in CSVE was associated with a 2.77-unit increase in depression whereas a one-unit increase in witnessing IPV was associated with a 1.08-unit increase in depression. Children reported greater depression when their levels of witnessing IPV or CSVE increased. Finally, a one-unit increase in support was significantly associated with a 1.96-unit decrease in depression ($\gamma_{40} = -1.96$, $p < .01$).

Two three-way cross-level interactions were significant. In the first interaction (see Figure 1), initial support and gender moderated the effect of change in witnessing IPV on depression over time. Overall, reduction in witnessing IPV was associated with lower levels of depression over time; this effect was significant except for boys who reported lower support at T1 (i.e., all of the slopes significantly declined except boys with M −1 SD lower T1 support).

Among children reporting lower T1 support, the effect of reduction in witnessing IPV on depression over time was significantly stronger for girls, $t(72) = 2.02$, $p < .05$, though the girls' average depression level was higher than the boys' level, particularly when no reduction in witnessing IPV was reported. On average, children who reported higher support at T1 had lower depression levels than children who reported lower initial support. The second interaction (see Figure 2) revealed that initial witnessing IPV and gender moderated the effects of change in witnessing IPV on depression over time. Among children who initially witnessed lower levels of IPV, reduction of witnessing IPV was associated with significantly lower levels of depression over time, most notably for girls (boys' simple slope = −1.48, $p < .05$, girls' simple slope = −4.35, $p < .001$) $t(72) = 2.06$, $p < .05$. In contrast, among children with higher initial witnessing IPV, depression over time did not decline when witnessing IPV was reduced (i.e., these slopes, for both boys and girls, were not significantly different from zero). On average, children who experienced higher witnessing
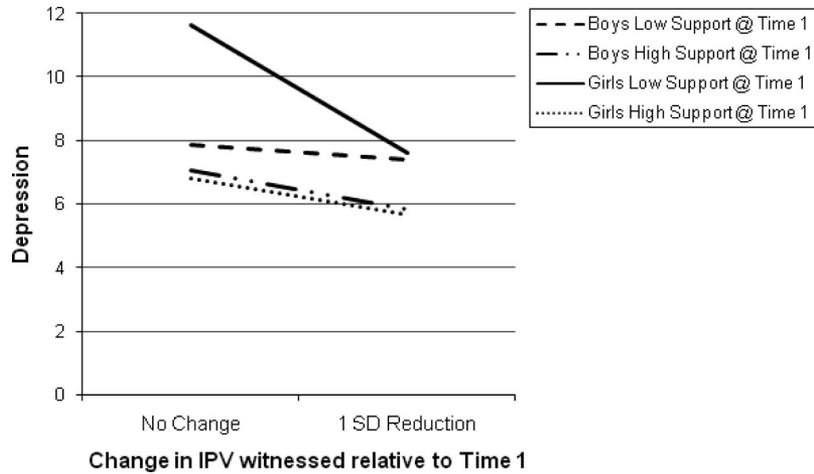
Figure 1. Time 1 Family Social Support × Gender × Change in Witnessing Intimate Partner Violence (IPV) on Depression over time.

IPV at T1 had higher levels of depression over time than children who experienced lower initial levels, irrespective of change in witnessing IPV.

Finally, although model fit was significantly improved by adding the between-person, within-person, and cross-level effects of the two violence variables, family social support, and gender, the variances of the random intercept and slope remained significant ($\sigma_{00} = 21.18$, $p < .001$ and $\sigma_{10} = .01$, $p < .001$, respectively; see the random effect section of Table 1), indicating that variability in initial depression and in depression trajectories was not completely accounted for by the variables.

Discussion

The current study explored the ways in which witnessing IPV, CSVE, family social support, and gender influenced depression over time within a sample of children from families in which IPV had recently occurred. Almost all of the children reported recent witnessing IPV at T1; by the final interview, the rate of recent witnessing had decreased, but was still relatively high (41%). The level of CSVE remained high over the 2 years, with approximately 90% of the sample indicating exposure at each of the six time points. Further, the two forms of violence were positively correlated at four of the six time points, adding support to the growing literature on co-occurring violence exposure among youths (Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Mrug et al., 2008; Saunders, 2003; Turner et al., 2006). Despite these risks, our results indicate significant between-child differences in depression, initially as well as over time (though depression decreased over time, on average). These between-person results parallel existing empirical findings indicating that youths respond differentially to violence due to factors including age of onset;
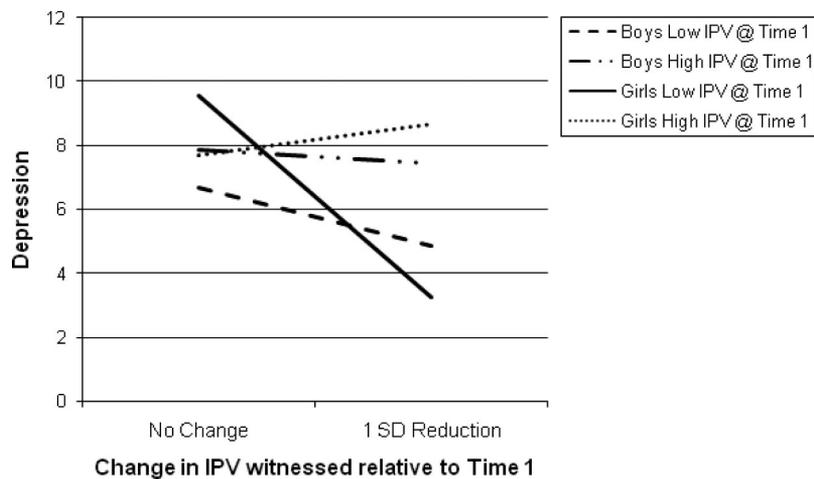

Figure 2. Time 1 Witnessing Intimate Partner Violence (IPV) × Gender × Change in Witnessing IPV on Depression over time.

frequency and severity; cognitive appraisal of threat and self-blame; level of support; and the co-occurrence of other forms of adversity (Grych, Fincham, et al., 2000; Margolin & Gordis, 2000; Mrug, et al., 2008).

At T1 we did not find a significant relationship between witnessing IPV and average level of depression, nor between initial family support and depression; however, initial CSVE was positively associated with initial depression. In addition, our results indicate that initial between-person differences in witnessing IPV, CSVE, and support were not significantly associated with the trajectories of depression over time. However, within-person change in depression over time was positively related to change in both witnessing IPV and CSVE, and negatively associated with change in support. These findings indicate that within-person changes over time in violence exposure and support play a more significant role in influencing depression over time than initial, between-person levels of these predictors. In general, we can surmise that ongoing, chronic exposure to violence poses a greater risk to children's mental health than acute experiences, which they may be able to recover from as long as the violence does not continue. These results highlight the value of longitudinal studies, which offer a more sensitive assessment of change, as opposed to cross-sectional studies that typically assess children immediately postcrisis (e.g., in shelters).

Beyond these main effects, we also found two cross-level interactions to be significantly related to the children's depression over time. The first interaction showed that initial support and gender both moderated the effects of change in witnessing IPV on depression over time. Reduction in witnessing IPV across the six time points was significantly associated with lower depression over time, except among boys with lower initial support, whose level of depression did not significantly decline. Among those children who reported lower initial support, reduction in witnessing IPV had a significantly stronger effect on the girls' depression, though the girls' average depression level was higher than the boys' depression level, particularly when no reduction in witnessing IPV was reported. On average, children who reported higher initial support had lower depression levels than children who reported lower initial support. Children may be buffered from the effects of violence exposure by family support, particularly from mothers: Warm, supportive attachment may facilitate talking about the violence in a helpful way, and may promote children's affect regulation (Johnson & Lieberman, 2007; Skopp et al., 2007). For those girls with both low initial support and sustained levels of witnessing IPV, their high levels of depression over time may be explained by several factors. First, as social cognitive theory suggests, girls may attend more to their mothers' experiences with violence than boys do, given the heightened salience of same-gender models (Bussey & Bandura, 1999). Thus, girls may feel more threat and fear than boys, which contributes to their increased level of depression (Grych, Jouriles, et al., 2000; Richmond & Stocker, 2007). In addition, girls may be more attuned to their mothers' IPV-related depression (Golding, 1999), which may then

contribute to the girls' depression over time, as longitudinal research suggests (Leve et al., 2005).

The second interaction indicated that initial level of witnessing IPV and gender both moderated the effects of change in witnessing IPV on depression over time. Among children who witnessed lower levels of IPV at T1, reduction in witnessing IPV was associated with significantly lower levels of depression over time, most markedly for the girls. In contrast, among children who witnessed higher initial levels of IPV, depression over time remained stable even when witnessing over time was reduced. On average, children who reported higher initial witnessing IPV had higher levels of depression than children who reported lower witnessing IPV at T1, regardless of change in witnessing IPV over time. As Grych, Jouriles, and colleagues (2000b) found intensity and frequency of witnessed IPV is positively associated with risk for internalizing problems among children. Perhaps these initial experiences with witnessing high levels of IPV have had relatively long-lasting effects on the children's depression, though these effects may not be sustained into adolescence (Sternberg et al., 2006). It also is possible that the families in which IPV was more severe at the first interview were more likely to experience additional adversities over time (e.g., moving away to escape the abuser, loss of income), which in turn may have influenced the children's depression.

Taken together, the current study findings and our recent work focusing on anxiety, CSVE, witnessing IPV, and support (Kennedy et al., 2009) offer complementary insights into the relationship over time between children's violence exposure and mental health, and the role of family support in buffering the effects of violence. The primary finding from our earlier work indicates that support within the family—even within families in which IPV has occurred—can play a significant role in ameliorating the effects of violence exposure outside of the family on children's anxiety over time. In contrast, our current findings suggest that support does play a significant role in buffering the effects of witnessing IPV—but not CSVE—on children's depression over time: On average, children with higher T1 support had lower depression over time than children with lower T1 support, regardless of change in witnessing IPV. Across both studies, we found that, generally speaking, change in violence exposure over time rather than initial between-child levels of violence was a significant predictor of both anxiety and depression over time. However, the second interaction from the current results indicates an exception to this general finding, with initially higher levels of witnessing IPV associated with stable levels of depression over time, even as witnessing IPV declined. Both studies found complex gender differences, with girls generally reporting higher depression, though not anxiety. The combined results highlight the need to longitudinally examine co-occurring violence, specific mental health outcomes, the moderating role of support, and gender.

Though the results from our current study add to the literature on children's witnessing IPV and depression, and suggest a moderating role for both gender and support, the study has several limitations. First, we relied on the chil-

dren's reports of their violence exposure, and their perceived support and depressive symptoms; it is possible that method variance may have inflated associations among variables. In addition, we were unable to assess for child maltreatment because of IRB constraints. Because child maltreatment often co-occurs with IPV (Kitzmann et al., 2003; Turner et al., 2006), it is reasonable to assume that some of the children experienced it. As Grych, Jouriles, and colleagues found (2000), parent-to-child aggression, particularly father-to-child, is associated with heightened risk for internalizing problems. Unfortunately, we do not know to what extent maltreatment among the current sample affected their depression symptoms; this represents a significant limitation. Third, we did not measure any contextual variables, such as nonvictimization adversity, which are likely to co-occur with violence and may play a role in youths' mental health outcomes (Mrug et al., 2008). Fourth, we focused exclusively on depression, primarily to specify the relationships between violence, support, gender, and depression over time; future work should explore a variety of outcomes, including internalizing symptoms and adjustment problems. Fifth, because our sample was drawn from families that had recently experienced intimate partner violence, half of whom had received an intervention, the generalizability of our findings is unknown. In particular, restricted range of scores on the witnessing IPV variable may have limited our ability to detect associations, though the sample showed substantial variability both at T1 and over time. Finally, we failed to assess mothers' perpetration of IPV; future research should comprehensively assess for witnessing IPV among children within community samples.

Despite these limitations, our findings have noteworthy implications for researchers and practitioners. Most of the research on youths' witnessing IPV has been cross-sectional; samples have frequently been families residing in domestic violence shelters (Wolfe et al., 2003). Although these types of studies offer an important "snapshot" of the children's mental health, they do not tell us how the children in these families fare once the IPV has waned or leveled off over time. Because we found that the relationships over time between co-occurring violence exposure, family social support, and gender were particularly salient in influencing the children's depression over time, future research in this area should use longitudinal designs with at least three time points whenever possible. The emphasis on family support as a possible moderator of the effects of family violence exposure—including child maltreatment—on children's mental health should continue, with special attention paid to gender similarities and differences. Practitioners working with families in which one form of violence has occurred must be knowledgeable about the likelihood of co-occurring violence exposure among the children, and develop comprehensive assessment tools and appropriate interventions. In particular, girls who have limited family support and have experienced sustained levels of witnessing IPV over time, and children who report high, acute levels of witnessing IPV, may require trauma-focused interventions designed to address depression. For these children, trauma-focused cognitive–behavioral therapy and support groups, as well as mentoring

relationships, may facilitate positive mental health and reduce the likelihood of their experiencing depression in adolescence or adulthood (Cohen, Mannarino, Berliner, & Deblinger, 2000; DuBois, Holloway, Valentine, & Cooper, 2002; Leve et al., 2005). It is critically important that we provide the necessary supports for these children, to ameliorate the effects of violence exposure on their mental health, thus facilitating their progression through middle childhood and optimizing their transition to adolescence.

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