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# Domestic Violence and the Socioemotional Development of Low-Income Preschoolers

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## Abstract

A growing body of literature has documented associations between domestic violence and children's socioemotional development. Still, the processes by which domestic violence influences the development of young children are not well understood. Using data from Welfare, Children, and Families: A Three-City Study (*N = 550*), this study examines associations between domestic violence and the socioemotional development of low-income preschoolers over time. Higher levels of domestic violence and changes in reports of domestic violence were linked to worse socioemotional functioning over time. Mothers' mental and physical health problems partially explained associations between domestic violence and children's socioemotional development. Furthermore, structured parenting mediated a portion of the association between mothers' mental and physical health problems and children's socioemotional development.

KEY WORDS: DOMESTIC VIOLENCE, SOCIOEMOTIONAL DEVELOPMENT, LOW-INCOME, PRESCHOOL

# Domestic Violence and the Socioemotional Development of Low-Income Preschoolers

It has been estimated that more than 3.3 million children per year witness domestic violence in the United States (Carlson, 1984; Jaffee, Wolfe, & Wilson, 1990). Over the last two decades, a growing body of literature has documented associations between domestic violence and children's socioemotional development. Exposure to domestic violence has been linked to more internalizing and externalizing behavior problems as well as to lower levels of social competence (Fantuzzo et al., 1991; Jouriles, Norwood, McDonald, Vincent, & Mahoney, 1996; Holden & Ritchie, 1991; Levendosky & Graham-Berman, 1998a; Marks, Glaser, Glass, & Horne, 2001; McCloskey & Stuewig, 2001 Sternberg et al., 1993). Moreover, a recent meta-analysis reported that associations between domestic violence and children's socioemotional development tend to be moderate in size (Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003).

The harmful influences of domestic violence may be especially apparent for children from economically disadvantaged households. Socioeconomic disparities in women's involvement in violent relationships suggest that children growing up in low-income families are more likely to witness domestic violence (Bachman & Saltzman, 1995). Low-income children's exposure to domestic violence may be especially harmful since children face the accumulating risks of economic disadvantage and domestic violence, both of which threaten their development (For review see National Research Council and Institute of Medicine, 2000; Duncan & Brooks-Gunn, 1997). The goal of this study is to improve our understanding of the family processes by which domestic violence influences the development of young children growing up in low-income families. In doing this, we also examine whether characteristics of children, including gender and dispositional attributes, moderate these links.

## *Theoretical Foundations*

Bioecological and transactional models of child development provide useful frameworks for understanding developmental differences that exist between children who have been exposed to

domestic violence and those who have not. These theories describe child development as the result of reciprocal interactions between children and the multiple environments in which they are embedded (Bronfenbrenner & Ceci, 1994; Sameroff, 1994). Proximal processes in the context of the family environment are central to children's socioemotional development. The nature of children's experiences in this setting is the product of their biological and genetic endowments and children's social and physical surroundings. Interactions between children and their most proximal environments shape socioemotional development (Bronfenbrenner & Ceci, 1994). Family and home dynamics play an especially salient role during early childhood. At this age, children face several developmental challenges that lay the foundation for their socioemotional development. These include learning to regulate their emotions, forming secure attachments, and developing positive internal representations and accurate appraisal systems (Friedman & Chase-Lansdale, 2000). Parenting that is characterized as structured, engaging, warm, and responsive enhances children's development and sets children's socioemotional development on a positive trajectory (Chase-Lansdale & Pittman, 2002; Chase-Lansdale, Wakschlag, & Brooks-Gunn, 1995)

*The Mediating Roles of Maternal Health* and *Parenting*

Despite the abundance of literature linking domestic violence to children's socioemotional development, the proximal processes by which domestic violence influences children are not well understood. Domestic violence may influence children via direct effects on maternal mental and physical health and in turn women's abilities to engage in effective parenting practices (Cummings, Davies, & Campbell, 2000). Indeed, women who experience violence in intimate relationships suffer from higher levels of depression, anxiety, post-traumatic stress disorder, and substance abuse as well as lower levels of self-esteem, and they report worse physical health than do women who do not experience domestic violence (Cascardi & O'Leary, 1992; Khan, Welch, & Zillmer, 1993; Plitcha, 1996; Stets & Straus, 1990; Straus & Gelles, 1990). These behaviors have been linked to less structured, engaged, responsive, warm, and harsher parenting practices

that may threaten children's development (Cummings et al, 2000; Downey & Coyne 1990; McLoyd 1990).

Prior studies have uncovered significant associations between domestic violence and several dimensions of parenting. More specifically, domestic violence has been linked with lower levels of warmth, support, control, and effectiveness in parenting as well as higher levels of parenting stress and disrupted parenting practices (Holden & Ritchie, 1991; Holden, Stein, Ritchie, Harris, & Jouriles, 1998; Levendosky & Graham-Bermann, 1998b, 2000; McCloskey, Figuerdo, & Koss, 1995; Wolfe, Jaffe, Wilson, & Zak, 1985). Still only a few studies have examined the mediating roles of mental health and parenting directly (Levondosky, Huth-Bocks, Shapiro, & Semel, 2003; McCloskey, Figueredo & Koss, 1995).

Two dimensions of parenting that have not been examined as mediators of the influence of domestic violence on young children's socioemotional development are responsive discipline and family routines. We define responsive discipline in early childhood as placing clear limits, rules, and expectations on children's behavior. Parents who set consistent limits and rules help children to learn to regulate their behavior and behave in ways that are socially acceptable (Bornstein, 2002; Lamb et al., 1999; National Research Council and Institute of Medicine, 2000; Thompson, 1998). The enforcement of limits promotes the socialization of children (Lamb et al., 1999) while inconsistent parenting may reinforce children's negative behavior (Patterson, DeBaryshe, & Ramsey, 1989). A second dimension of parenting that is important for preschoolers' socioemotional development is family routines. Wolin & Bennett (1984) define family routines as patterned interactions that are repeated over time. Examples of important family routines include regular mealtimes, bedtimes, and chores. Although research on family routines is somewhat limited, some have argued that family routines promote self-regulation and a sense of security in children as well as the psychological well-being of family members and more effective parenting practices. In doing so, family routines seem to enhance children's socioemotional development (Brody & Flor 1997; Fiese et al., 2002; Loukas & Prelow, 2004).

*Subgroup Differences among Children Exposed to Domestic Violence*

Bioecological and transactional theories of development suggest that the influence of domestic violence on children's socioemotional development will vary according to child characteristics. On the whole, the literature has not carefully examined these differences (Fantuzzo & Mohr, 1999). The most commonly studied child characteristic is gender, but overall the results are inconclusive. Some have found that boys who are exposed to domestic violence exhibit greater externalizing behavior problems than girls (Jouriles & Norwood, 1995; Kerrig, 1998; Porter & O'Leary, 1980; Wolfe, Jaffe, Wilson, & Zak, 1985), while others have shown that girls who are exposed to intimate partner violence have higher behavior problems than boys (Holden & Ritchie, 1991; Spaccarelli, Sandler, & Roosa, 1994). Finally, some investigations have failed to uncover significant gender differences (O'Keefe, 1984). Domestic violence may be particularly harmful to boys because preschool-aged boys tend to lag behind girls in their development of inhibitory control, which is central to promoting children's socioemotional functioning (Kochanska, Murray, Jacques, Koenig, & Vandegeest, 1996). Similarly, recent research suggests that boys may be less adept than girls in regulating their physiological arousal and more reactive to stress (Crockenberg, 2003; Dettling, Parker, Lane, Sebanc, & Gunnar, 2000).

Beyond traditional tests of gender differences, only a small number of studies have examined whether links between domestic violence and child well-being depend on child dispositional characteristics. For example, children may react differently when exposed to domestic violence, whereby children with easygoing temperaments cope better with family crises than those with difficult temperaments. Existing studies suggest that it is important to recognize the variability in children?s emotional profiles and regulatory capacities in high-risk environments. Studies of low-income children have found positive associations between the tendency to show distress, fear, and anger and later behavior and coping problems (Shaw, Keenan, Vondra, Delliquadri, & Giovanelli, 1997; Werner & Smith, 2001). As well, higher self-regulation has been associated with lower behavior problems and more competence (Buckner, Mezzacappa, & Beardslee, 2003).

*Limitations of Existing Literature*

Despite the recent growth in research on associations between domestic violence and children's well being, several limitations in this research make it difficult to draw firm conclusions about the associations between domestic violence and developmental trajectories of young children. First, most studies of links between domestic violence and children's socioemotional development have been based on samples of children who span multiple developmental periods. Very few studies have focused solely on preschool-aged children. Preschool-aged children may be particularly vulnerable to the negative effects of domestic violence due to their dependence on caregivers. In addition exposure to domestic violence during these years may be especially harmful because it is during this time that children develop self-regulatory skills that provide important foundations for socioemotional development. Second, studies have only recently begun to examine links between domestic violence and children's socioemotional development over time (e.g., DeJonghe, Levendosky, Bogat, von Eye, 2005; Graham-Bermann, Habarth, Gross, 2005; McCloskey, 2005). Among those studies that have been longitudinal, few have adequately addressed the influence of unmeasured differences or omitted variables that may relate to both the likelihood that children are exposed to family violence and children's development. Finally, the heavy reliance on shelter-based samples in this literature raises concerns about the external validity of many prior studies.

*Research Questions*

In this investigation we attempt to overcome some of the limitations in the literature by examining the influence of domestic violence on a group of especially high risk children, using data from *Welfare, Children, and Families: A Three-City Study,* a longitudinal, multi-method investigation of welfare reform and low-income families in Boston, Chicago, and San Antonio. Multivariate analyses were conducted to explore whether exposure to domestic violence was linked to young children's socioemotional development over a 16-month period. The goal of this study is to provide a more rigorous test of the associations between exposure to domestic

violence and young children's developmental trajectories and to explore the processes that may explain these links. Four research questions were addressed by this study:

1) What proportions of young children were exposed to domestic violence over a 16-month period?
2) Is domestic violence harmful to young children's socioemotional development over time?
3) Do maternal mental and physical health problems or parenting practices explain associations between domestic violence and children's socioemotional development over time?
4) Do child characteristics moderate these associations?

## Method

### *Analytic Plan*

Associations between domestic violence and young children's socioemotional development were modeled using the lagged Ordinary Least Squares Regression (OLS) presented in Equation 1 below.

(1) $$\text{Socioemotional Development}_{2i} = B_0 + B_1 \text{ Socioemotional Development}_{1i} + B_2 \text{DV}_{1i} + B_3 \Delta \text{DV}_{1,2i} + B_4 \text{Child}_{1i} + B_5 \text{Demographic}_{1i} + \varepsilon_{t,}$$

Here children's socioemotional development at wave 2 was modeled as a function of the level of domestic violence their mothers were experiencing at wave 1 and changes in domestic violence that took place between wave 1 and wave 2, controlling for children's socioemotional development at wave 1. A series of child and demographic characteristics that were measured during the wave 1 interview were included in the models as covariates. Kessler and Greenberg (1981) showed that the coefficients on the independent variables in these models are interpreted as the effects of each independent variable on changes in rates of child functioning over time. Both domestic violence at wave 1 of the survey and changes in domestic violence taking place between the waves were used as independent variables because both are conceptualized as affecting children's developmental trajectories.

The benefit of using a lagged OLS regression model to examine associations between domestic violence and children's developmental trajectories is that it controls for the baseline levels of children's socioemotional outcomes, thus reducing the influence of omitted variables that are related to child functioning as well as the likelihood that women are in violent relationships. These models help to obtain less biased estimates of the effects of domestic violence on children's development (Cain, 1975). Threats of omitted variable bias were further reduced in these analyses by including an extensive set of covariates in our regression models. With such a rich set of maternal, child and family covariates, we reduce the likelihood that some unmeasured characteristic may confound associations between domestic violence and child development.

To address the central questions related to the processes through which domestic violence influences young children's development, mothers' mental and physical health problems and structured parenting from wave 2 of the survey were examined as mediators. They were entered one at a time into equation 1 and traditional tests of mediation were conducted with OLS techniques described by Baron & Kenny (1986) and Holmbeck (1997) to examine the statistical significance of the indirect paths. In attempt to understand if children's characteristics moderated associations between domestic violence and young children's functioning a series of interactions were tested. Specifically, interactions between each of the measures of domestic violence and child gender, effortful control, negative emotionality, and impulsivity, measured at wave 1 of the survey, were added to Equation 1. Prior to the addition of interaction terms, all continuous variables in the model were centered for ease of interpretation and to reduce concerns regarding collinearity (Aiken & West, 1991).

All analyses are weighted with probability weights that are inversely proportional to the likelihood of being selected into the sample. This allows us to generalize to our population of inference, which includes young children and their mothers in our 3 cities in households with income less than 200 percent of the poverty line.

*Sample*

The data for this study were drawn from the first and second waves of the survey component of the *Welfare, Children, and Families: A Three-City Study*. The survey component is a household-based, stratified random-sample survey of about 2,400 low-income children and their caregivers in low-income neighborhoods in Boston, Chicago, and San Antonio. Both the size of this sample and the fact that families were randomly selected from low-income communities, rather than domestic violence shelters, helps overcome many of concerns related to external validity that plague existing research on domestic violence and child development. In 1999, eligible families were identified from over 40,000 households that were screened (screening rate of 90 percent). Eligibility was based on the age of children in the household race/ethnicity, family income, marital status, and receipt of Medicaid or Food Stamps. Of those eligible, a survey sample was randomly selected, and 82.5% of these families agreed to participate, resulting in an overall response rate of 74%. Winston et al. (1999) provide a detailed account of the survey design. A second interview was completed with approximately 88% of these families 16 months later in 2001. In over 90 percent of the cases, the caregiver was the biological mother, and we will refer to caregivers as "mothers" in this manuscript. This paper focuses on the 550 young children (ages 2-4) who remained in the care of the same caregiver at both waves of the survey.

*Procedure*

At wave 1 and wave 2 of the survey mothers took part in an in-home interview, lasting approximately 2 hours where they answered questions about themselves, their families, households, and children. Identical questions and measures were given during the two waves of data collection. The survey collected extensive information about women's employment, income, family structure, welfare participation, as well as their physical and mental health. The interviews were administered using a Computer Assisted Personal Interview (CAPI), where the interviewer entered responses directly into a laptop computer during the interview. For potentially sensitive questions like those related to domestic violence, an Automated Computer

Assisted Survey Interview (ACASI) was employed. Respondents were given the computer with a set of headphones and allowed to enter responses directly.

*Domestic Violence*

Using ACASI at waves 1 and 2, women reported their experiences of domestic violence using a modified version of the Conflict Tactics Scale (Straus, 1979) that was adapted for the Women's Employment Study (Tolman and Rosen, 2001). During both interviews respondents answered 12 questions on a 4-point Likert scale to indicate how often an act of domestic violence had happened in the past 12 months (1 = never to 4 = often). A composite score was created for each wave of the survey by calculating a mean across all items in the scale ($\alpha_{T1}$ = .85: $\alpha_{T2}$ = .87). To address skewness in the data, domestic violence composites were subject to a square root transformation. For this analysis, two variables are included in the regression equations. The first represents the level of domestic violence experienced in the 12-months prior to wave 1 while the second variable assesses changes in domestic violence between the survey waves. The bivariate correlation between exposure to domestic violence at wave 1 and the change in rates of domestic violence across the waves was -0.61 ($p < .001$).

*Children's Outcome Measures*

*Social Competence.* At wave 1 and wave 2, mothers reported on their children's social competence (Quint, Bos, & Polit, 1997). For example, items asked if children showed concern for other people's feelings, were helpful and cooperative, and were admired and well-liked by other children;. A composite score was created by taking the mean of six items with higher scores reflecting more *social competence* ($\alpha_{T1}$ = .77: $\alpha_{T2}$ = .76).

*Behavior Problems.* At both waves of the survey, mothers reported on their children's socioemotional functioning using the age-appropriate version of the Child Behavior Checklist (CBCL) (Achenbach 1991, 1992; ($\alpha_{T1}$ = .95, $\alpha_{T2}$ = .95). Standard scores (t-scores) were calculated for *internalizing* and *externalizing behaviors* based on normative information from a nationally representative sample gathered by the scales' authors. In attempt to assess the most severe forms of problem behaviors dichotomous variables were created for both the internalizing

and externalizing behavior scores. These categorical variables, s*erious internalizing and externalizing behavior problems,* represent children who were most likely to be in need of psychological services (e.g., at or above the borderline/clinical cutoff points or the 84$^{th}$ percentile).

*Demographic Characteristics*

For these analyses, we use demographic characteristics from the wave 1 interview. Maternal age was measured in years while child age was measured in months. Race was represented with a series of dummy variables indicating whether the child is of non-Hispanic Black, non-Hispanic White, or Hispanic origin. Child gender was represented by one dichotomous variable, with a 1 representing males and the omitted group representing females. Education was expressed by a dichotomous variable indicating whether or not women had obtained a high school education or not. We define women as having been employed or receiving welfare if she was working at least 30 hours per week or more or on welfare, respectively, for at least 6 out of the 11 months prior to the survey. Family structure was represented by several dummy variables indicating whether women were single, cohabitating, or married. Mother's caregiving burden was expressed as the number of minors in the household. Finally, an income-to-needs ratio was calculated by dividing the household income including food stamps by the number of people in the household.

*Mental and Physical Health Problems*

Mothers' mental and physical health problems were measured at wave 2 of the survey using a composite that consists of four measures of psychological distress (parenting stress, depression, somatization, and anxiety), two measures of self-concept (positive and negative), and two measures of women's physical health (general health, disability indicator). We standardized each of these components and calculated a mean to create a composite measure of caregivers' *mental and physical health problems* ($\alpha_2$ = .78). The components of the composite are discussed individually below. Higher scores of the maternal mental and physical health problems composite are indicative of more problematic psychological and physical functioning.

The parenting stress scale ($\alpha_2$ = .75) consists of 7 items (e.g., "Being a parent is harder than I thought it would be", "I put so much into parenting, I don't have time for myself"), rated on a 5-point scale (1 = strongly disagree to 5 = strongly agree), that are based on similar measures from the Panel Study of Income Dynamics (PSID, 1997). Caregivers were also administered a short-form of the Brief Symptom Inventory (BSI-18; Derogatis, 2000). The BSI-18 contains subscales on somatization ($\alpha_2$ = .77), depression ($\alpha_2$ = .87), and anxiety ($\alpha_2$ = .84), and respondents report on a five-point scale whether they had experienced symptoms "not at all" (0) to "extremely" (4) in the past 7 days. The BSI-18 has high internal consistency on the subscale and total scores (.74 - .89; Derogatis, 2000). Caregivers also completed the Rosenberg Self-Esteem Scale (Rosenberg, 1986), which provides measures of positive ($\alpha_2$ = .68) and negative self-concept ($\alpha_2$ = .76). Respondents rated ten positive (e.g., "On the whole, I am satisfied with myself") and negative items (e.g., "I feel I don't have much to be proud of") on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). To measure respondents' physical health primary caregivers were asked to rate their health on a five-point scale of 1 (excellent) to 5 (very poor). Finally, respondents were asked three questions about physical or mental disabilities that prevented them from working or participating in everyday activities. A dichotomous disability indicator was created; Individuals endorsing any one of the three items were considered to have a disability.

*Structured Parenting Practices*

Several aspects of maternal parenting and family functioning were assessed during the wave 2 interview; here we focus on two dimensions of parenting that we refer to as responsive discipline and family routines. Mothers reported on their parenting practices during the wave 2 interview (e.g., firmness, permissiveness) using items from the Raising Children Checklist (Shumow, Vandell, and Posner 1998). Many of these items addressed mothers' approaches to discipline including the extent to which mothers set and explained rules, placed limits on behavior, and expressed clear expectations about their children's behavior. Mothers were also asked a series of questions related to the degree to which strength-promoting family routines were present in the home (Jensen, James, Boyce, and Hartnett 1983). Responsive discipline and

family routines can be thought of comprising important dimensions of structured parenting. Thus a factor analysis was conducted and all 18 of the parenting items were combined into a *structured parenting* composite ($\alpha_2$ = .75). This composite was computed by standardizing each of the 18 items and calculating the mean. Higher values on the structured parenting composite reflect responsive approaches to discipline and the promotion of important family routines.

*Children's Dispositional Characteristics*

*Negative Emotionality and Impulsivity.* Using the Emotionality, Activity, Sociability, and Impulsivity (EASI) Temperament Scale (Buss & Plomin, 1975; 1984), as part of the W1 interview, mothers rated children's negative emotionality (i.e., tendency to become distressed, fearful, and angry) and impulsivity (i.e., tendency to jump from one interesting activity to another) on a 1 to 5 scale. *Negative emotionality* was based on the sum of four items (e.g., child gets upset easily; $\alpha$ =.69), and *impulsivity* was assessed with a sum of eight items, such as "child gets bored easily" ($\alpha$ = .69).

*Effortful Control.* Under the administration of trained, professional interviewers, children participated in two effortful control tasks during the W1 interview, Snack Delay and Gift Wrap, which measured children's ability to delay gratification (e.g., wait to open a gift). These were adapted from the laboratory research of Kochanska and colleagues (1996) for administration in the home. Trained field interviewers videotaped the administration of effortful control tasks, and trained research assistants, who reflected racial and ethnic diversity, coded the videotapes. (For a detailed description of the tasks and the establishment of interrater reliability see Li-Grining, Votruba-Drzal, Bachman, & Chase-Lansdale, 2004). The average kappas across coder pairs were .69 for the Snack Delay behavior code and .62 for the Gift Wrap behavior code. An overall *effortful control* composite was made using a mean of the two observed variables ($\alpha$ = .87).

## Results

The results begin with a descriptive overview of the young children's rates of exposure to domestic violence across the two waves of the survey. Next, the results of the OLS regressions are presented to explore whether levels of exposure to domestic violence at wave 1 of the survey

and changes in domestic violence between wave 1 and wave 2 are associated with young children's socioemotional functioning over time. Then mothers' health problems and structured parenting are examined as mediators. Finally, the results of a series of analyses are presented that considered whether the influence of domestic violence varied by characteristics of the child.

*Research Question 1: What proportions of young children are exposed to domestic violence over a 16-month period and how does this exposure change over time?*

Approximately one-third ($M$ = .36, $SD$ = .48) of the young children in the *Three-City Study* were exposed to domestic violence at wave 1 of the survey while that number dropped to slightly more than one-quarter ($M$ = .28, $SD$ = .45) at wave 2. To examine changes in exposure to domestic violence between waves 1 and 2 of the survey, a change score was computed between the wave 1 and wave 2 domestic violence composites. These scores showed that children's exposure to domestic violence were dynamic. On average young children experienced reductions in their exposure to violence across the two waves of the survey. More specifically, 26% of young children experienced reductions in exposure to domestic violence while 16% experienced increases in their levels of exposure to violence. The types of domestic violence these mothers reported experiencing are shown in Table 3.

*Research Question 2: Is domestic violence harmful to children's socioemotional development over time?*

To answer the next research question, three OLS regression models were estimated. In Model 1 of Table 4, the level of domestic violence children were exposed to at wave 1 as well as the change in rates of domestic violence experienced between waves were included along with maternal, child, and family demographic characteristics as predictors of socioemotional development. These included child age, child gender, child race, mother age, relationship of caregiver to child, city of residence, family structure, income-to-needs, maternal education, employment, and welfare receipt, as well as the number of minors in the household at wave 1[1].

1 Bivariate regression models remained relatively unchanged when any of the demographic characteristics including child age, gender or race, mothers' age, relationship to caregiver, city or residence as well as maternal education,

It can be seen in Model 1 that exposure to domestic violence at wave 1 was linked to modest changes in several measures of children's socioemotional functioning over time. Specifically, a standard deviation increase in young children's exposure to domestic violence at wave 1 was related to a .21 standard deviation increase in internalizing behaviors and a .25 standard deviation increase in externalizing behaviors. Wave 1 domestic violence was also associated with .20 of a standard deviation increase in the likelihood that children would exhibit serious internalizing behavior problems and .12 of a standard deviation reduction in social competence.

There were significant associations between changes in exposure to domestic violence between wave 1 and wave 2 and children's socioemotional functioning as well. These too can be seen in Model 1 of Table 3. In particular increases in domestic violence across waves were linked to elevated levels of internalizing and externalizing behaviors as well as an increase in the likelihood that children displayed serious externalizing behavior problems. The magnitude of these associations were modest, such that a standard deviation increase in domestic violence between wave 1 and wave 2 related to .15 of a standard deviation increase in internalizing behaviors, .21 of a standard deviation increase in externalizing behaviors, and .23 of a standard deviation elevation in the likelihood that children exhibited serious externalizing behavior problems.

*Research Question 3: Do maternal mental and physical health problems or parenting practices explain associations between domestic violence and young children's development?*

In Model 2, a composite representing mothers' mental and physical health problems from wave 2 was entered into the regressions to consider whether these may help to explain associations between domestic violence and children's behavioral functioning over time. In the final model, Model 3, structured parenting was considered as a secondary mediating variable. These analyses, presented in Table 4, along with traditional tests of mediation revealed that associations between domestic violence and young children's socioemotional development were

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welfare receipt, employment and marital status were entered into the models, and thus a combined model is presented here.

partially explained by mothers' mental and physical health. In general, higher levels of domestic violence were linked to worse mental and physical health, which in turn was associated with less optimal socioemotional development. The composite measure of health problems partially mediated relations between wave 1 domestic violence and changes in social competence, internalizing, externalizing, and serious internalizing behavior problems. For example, the standardized coefficient on domestic violence at wave 1 for children's internalizing behavior problems dropped from .21 in model 1 to .14 in model 2 when the composite measure of mothers' mental and physical health problems were added. In general, mothers' health problems explained between 35% and 45% of the association between wave 1 domestic violence and children's socioemotional development. The standardized coefficient for the pathway from wave 1 domestic violence to the composite measure of mothers' health problems and then to children's internalizing behavior problems was .07 ($p < .05$). The indirect pathway from wave 1 domestic violence through mother's health problems and then to children's externalizing behavior problems was .11 ($p < .001$). Finally, the standardized coefficient for the indirect path from wave 1 domestic violence to mothers' health problems and then to children's serious internalizing behavior problems was .09 ($p < .001$). Health problems entirely mediated the association between wave 1 domestic violence and young children's social competence. The standardized coefficient for the indirect influence of wave 1 domestic violence on children's social competence through mothers' health problems was -.12 ($p < .001$).

Mothers' mental and physical health problems were important for understanding the influence of changes in domestic violence between wave 1 and wave 2 on children's socioemotional development as well. Specifically, the composite measure of health problems explained roughly 20% of the influence of changes in domestic violence on internalizing, externalizing, and serious externalizing behavior problems. Standardized coefficients for the indirect association between change in domestic violence and the composite measure of mothers' health problems for children's internalizing behavior problems was .03 ($p < .10$). Similarly, standardized coefficients for the indirect pathways between changes in domestic violence and

mothers' health problems for externalizing and serious externalizing behavior problems were .05 ($p < .05$), and .04 ($p < .10$) respectively.

In the last set of regressions, presented in Model 3 of Table 4, the composite measure of structured parenting was considered as a mediator. We discovered that structured parenting did not further mediate the influence of either domestic violence measure directly. Instead it seemed to partially explain relations between mothers' mental and physical health problems and children's socioemotional development. Not surprisingly, higher levels of maternal health problems were related to parenting that was less structured. Formal tests of mediation revealed that the composite measure of parenting structure explained between 10% and 15% of the influence of mothers' health problems on internalizing, externalizing, and serious externalizing behavior problems, and social competence. The standardized coefficient for the indirect links from mothers' mental and physical health problems to structured parenting and then to internalizing behavior problems was .02 ($p < .10$). Standardized coefficients for these same indirect pathways for externalizing and serious externalizing behavior problems were .04 ($p < .05$), and .02 ($p < .10$) respectively. Finally, standardized coefficient for the indirect relation between mothers' mental and physical health problems and social competence that operated through structured parenting was -.05 ($p < .01$).

*Research Question 4: Do characteristics of children moderate associations between domestic violence and young children's development?*

In a final series of analyses, which for reasons of parsimony do not appear in Table 4, we considered whether characteristics of children moderated relations between our two measures of domestic violence and young children's socioemotional development. First, we considered whether the influence of domestic violence on children's socioemotional functioning varied by child gender. No significant interactions were found. Second, we examined whether the links between domestic violence and children's development varied as a function of children's dispositional characteristics. Children's negative emotionality, impulsivity, and effortful control did not moderate the associations between domestic violence and children's functioning.

## Discussion

Consonant with prior research, the results of this study suggest that domestic violence is quite prevalent in the households of low-income preschoolers. Indeed the *Three-City Study* found that slightly over one-third (36%) of young children was exposed to domestic violence at wave 1. This number fell to just over one-quarter (28%) at wave 2. These rates of domestic violence are consistent with other studies of poor and welfare-reliant mothers. In their review, Tolman and Raphael (2000) report that rates of recent abuse among low-income samples have ranged from 8 percent to 33 percent, with the majority of studies uncovering rates between 20 percent and 30 percent.

Using a rigorous analytic approach, this study found that this exposure to domestic violence seemed to have negative implications on the socioemotional development of preschool-aged children from low-income households. In fact, both the level of domestic violence that women reported at wave 1 of the survey and changes in reports of domestic violence between wave 1 and wave 2 were linked to children's socioemotional functioning overtime. Both the wave 1 level and changes in domestic violence over time were associated with increases in internalizing and externalizing behaviors. The wave 1 level of domestic of violence was linked to increases in the likelihood children would exhibit serious internalizing behavior problems and reductions in social competence. Finally, serious externalizing behavior problems were related to changes, but not to initial levels, in domestic violence. Overall these findings support existing research that has documented the negative influence of domestic violence on children's socioemotional development (Fantuzzo & Lindquist, 1989; Kitzman, Gaylord, Holt, & Kenny, 2003; Kolbo, Blakely, & Engleman, 1996; Margolin, 1998; Onyskiw, 2003).

The associations uncovered in this investigation may be somewhat smaller than those found in other studies, but they are still quite similar. In a recent meta-analysis Wolfe and colleagues (2003) reported an effect size of $Z_r = .28$, whereas the links that we have uncovered tend to be closer to .20. Our results may be smaller because we do not rely on a shelter-based sample, which has been common in prior research. Moreover, the young children in our study, on

average, were exposed to moderate, as opposed to extreme, forms of domestic violence. Finally, this study spans a relatively short time frame – only 16 months. It may be that the effects of domestic violence will become even more pronounced as children enter middle childhood and adolescence.

*Are Certain Subgroups of Children At Greater Risk When Exposed to Domestic Violence?*

The harmful associations between domestic violence and preschoolers' socioemotional development were evident for all children. We did not find, as we had hypothesized, that domestic violence was especially salient for the socioemotional trajectories of boys or children with more difficult temperaments. Our failure to uncover significant interactions between child gender and domestic violence was not surprising, given the mixed findings in the literature. We were more surprised to find that children with more difficult temperaments were not especially vulnerable to the influences of domestic violence. Previous studies have documented the protective effects of higher physiological regulation and lower emotional and behavioral reactivity in the context of marital conflict (Ingoldsby et al., 1999; Katz & Gottman, 1995). We anticipated that children might draw on these characteristics to cope with the emotional demands of more extreme forms of marital conflict that are present with domestic violence. Instead, it seems that the findings from research on marital conflict may not generalize to the literature on domestic violence. It is quite plausible that domestic violence places even greater emotional demands on children than do more normative forms of interparental conflict. Under these more severe conditions, coping strategies that draw on children's own emotional and regulatory processes may be inadequate to moderate the harmful impact on their developmental trajectories.

*The Role of Maternal Health and Structured Parenting Practices*

This study lends support to an ecological approach to understanding the influence of domestic violence on low-income children's socioemotional development (Levendosky & Graham-Bermann, 2000b; Levendosky et al., 2003). More specifically, we found that associations between children's socioemotional development and wave 1 levels and changes in domestic violence were partially explained by mothers' mental and physical health problems.

The associations between wave 1 domestic violence and children's social competence was entirely explained by mothers' mental and physical health problems. Health problems accounted for between 35% and 45% of the association between wave 1 domestic violence and internalizing, externalizing, and serious internalizing behavior problems. Furthermore, it explained nearly 20% of the relations between changes in domestic violence and children's internalizing, externalizing, and serious externalizing behavior problems. These results suggest that one of the processes by which domestic violence influences children's socioemotional development may be through its associations with mothers' mental and physical health.

An important dimension of parenting, structured parenting, did not further explain associations between domestic violence and children's socioemotional development overtime. Instead, structured parenting mediated a portion of the association between mothers' mental and physical health problems and children's socioemotional development. Overall, our structured parenting composite explained only a small amount of this association. Thus, other mechanisms must be at work and future studies are needed that examine multiple dimensions of parenting. Based on the parenting literature, we hypothesized that parental warmth would be an important mediator. However, it did not mediate links between domestic violence and young children's socioemotional development that we uncovered in this study. This is consistent with past research that has found a positive direct association between parenting effectiveness, attachment, and domestic violence, whereby mothers who are victims of domestic violence seem to overcompensate in certain dimensions of parenting to "make-up" for young children's exposure to violence in their home life or to harsh parenting practices on the part of their fathers (Levendosky, Huth-Bocks, Shapiro, & Semel, 2003).

When interpreting both sets of mediation analyses, we must recognize that with only two waves of data were are limited in our ability to confirm this series of events. This is primarily because both the mediating variables and the child outcomes were measured at wave 2. Domestic violence may have led to lower levels of mothers' mental and physical health, and less structured parenting and these in turn may have increased children's behavior problems. However, we

cannot entirely rule out the possibility that mother's mental and physical health and structured parenting decreased in response to elevations in children's behavior problems. Indeed, Sullivan and colleagues (2000) found that domestic violence was linked to parenting stress indirectly by its association with children's behavior problems. The possibility of simultaneity bias in our study needs to be addressed in future longitudinal studies that have data from more than two time points.

In addition, important variables that are not included in these analyses, but may be important in understanding the underlying pathways between domestic violence and children's development include information about the mothers' partners, the extent to which the child suffered from abuse, and directly witnessing violent episodes. Recent research has suggested that these three factors are important for understanding the development of children in violent households (Grych, Jouriles, Swank, McDonald, & Norwood, 2000; Guille, 2004). Furthermore, we cannot entirely rule out the threat that selection poses to the validity of our findings. In other words, it may be that women with worse mental and physical health problems are more likely to become involved in a violent relationship and to have children with worse socioemotional functioning over time. These selection processes may give rise to observed associations between domestic violence and child well-being. Threats of selection such as these, however, are much less likely given the longitudinal nature of our study and our analytic approach that used a lagged OLS regression to control for children's socioemotional functioning at wave 1.

*Conclusions*

This study supports past work that has uncovered negative associations between domestic violence and children's development. It contributes to this body of research by strengthening our understanding of the potential mechanisms that explain relations between domestic violence and child well-being. The data for this investigation were drawn from *Welfare, Children, and Families: A Three-City Study,* a longitudinal investigation of the impact of welfare reform on low-income women and their children. This study and others have shown that an alarmingly high proportion of welfare recipients are currently involved in violent relationships and that well over

half have been involved with an intimate partner who was violent at some point in their lifetime (Tolman & Raphael, 2000). Policies such as the Family Violence Option, (Raphael, 1999) which allow states to wave work requirements temporarily for welfare-reliant women who are victims of domestic violence, may not be effectively meeting the needs of these women or their children as they transition from welfare to work. Indeed, the results of this study suggest that state and federal policy makers may need to consider providing more extensive, acute and long-term services to meet these mother's psychological and physical needs in ways that enhance their functioning as parents and their children's socioemotional well-being. Furthermore, this study highlights the need for direct services (e.g., medical, counseling) to young, low-income children who are growing up in violent households to enhance their socioemotional development and counteract the harmful influences of poverty and domestic violence.

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Table 1 *Sample characteristics of children and their families*

| | Mean | SD |
|---|---|---|
| Level of Domestic Violence at Wave 1 [a] | .18 | .27 |
| Level of Domestic Violence at Wave 2 [a] | .13 | .23 |
| Changes in Rates of Domestic Violence Over 16-Months [a] | -.05 | .26 |
| Wave 1 | Percentage | SD |
| Child Age [a] | 3.06 | .92 |
| Male Child | 51.8 | |
| Mothers' Age [a] | 29.42 | 9.05 |
| Relationship to Child | .90 | .30 |
| Child Race | | |
| Hispanics [b] | .49 | .50 |
| Non-Hispanic Whites | .04 | .20 |
| African Americans | .48 | .50 |
| Child's City of Residence | | |
| San Antonio [b] | .27 | .45 |
| Boston | .39 | .49 |
| Chicago | .34 | .47 |
| Family Demographics | | |
| Mother Receiving Welfare | .38 | .49 |
| Mother Employed | .24 | .42 |

| | Mean | SD |
|---|---|---|
| Income-to-Needs [a] | .85 | .50 |
| Number of children in the household [a] | 2.97 | 1.52 |
| Family Structure | | |
| Cohabiting [b] | .08 | .28 |
| Married | .27 | .44 |
| Single | .65 | .47 |
| No High School Education [b] | .39 | .49 |
| Mothers Mental and Physical Health Problems [a] | -.08 | .58 |
| Structured Parenting [a] | .03 | .39 |

*Note.* Values in lower portion of the table are weighted percentage and standard deviations, unless otherwise indicated.
[a] Weighted mean.
[b] Represents omitted groups in regression analyses.

Table 2 *Children's functioning by wave of assessment*

| | Wave 1 | Wave 2 | Wave 1 | Wave 2 |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Socioemotional Functioning | | | | |
| Social Competence | 4.14 | .64 | 4.10 | .69 |
| Internalizing Behaviors | 51.65 | 10.19 | 47.84 | 9.66 |
| Externalizing Behaviors | 51.56 | 10.28 | 49.44 | 9.95 |
| Serious Internalizing Behaviors | .24 | .43 | .14 | .43 |
| Serious Externalizing Behaviors | .25 | .43 | .16 | .36 |

*Note.* Values in table are weighted means and standard deviations.

Table 3 *Domestic violence experiences*

| | Wave 1 Domestic Violence | Wave 2 Domestic Violence |
|---|---|---|
| 1. Threatened to hit. | .41 | .33 |
| 2. Thrown something at you. | .47 | .28 |
| 3. Pushed, grabbed, or shoved you. | .58 | .47 |
| 4. Slapped, kicked bit, or punched you. | .46 | .27 |
| 5. Beaten. | .33 | .24 |
| 6. Choked or burned you. | .26 | .15 |
| 7. Used or threatened you with a weapon. | .19 | .12 |
| 8. Forced you into unwanted sexual activity. | .29 | .10 |
| 9. Threatened to take away your child. | .33 | .14 |
| 10. Interfered with you going to work. | .27 | .27 |
| 11. Harassed you at work. | .29 | .28 |
| 12. Made you miss work. | .45 | .40 |
| 13. Lost your job due to violence. | .23 | .18 |

*Note.* Values in table are weighted percentages of women experiencing these types of domestic violence.

Table 4. *Domestic violence and young children's socioemotional development*

| | Social Competence | | | Internalizing Behaviors | | | Serious Internalizing Behaviors | | |
|---|---|---|---|---|---|---|---|---|---|
| Models | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Socioemotional development wave 1 | 0.39** | 0.36*** | 0.31*** | 0.33*** | 0.31*** | 0.30*** | 0.20* | 0.19* | 0.19* |
| Domestic Violence, wave 1 | -0.12$^{+}$ | 0.01 | -0.03 | 0.21** | 0.14 | 0.15$^{+}$ | 0.20* | 0.11 | 0.12 |
| Change in Domestic Violence Rates | -0.10 | -0.05 | -0.09 | 0.15* | 0.12 | 0.14* | 0.13 | 0.09 | 0.10 |
| Child Age | 0.01 | 0.04 | 0.00 | 0.00 | -0.02 | 0.00 | -0.07 | -0.09 | -0.07 |
| Female Child | 0.07 | 0.07 | 0.05 | -0.13* | -0.12* | -0.11* | -0.02 | -0.01 | -0.01 |
| Child Race | | | | | | | | | |
| Hispanics[1] | | | | | | | | | |
| Non-Hispanic Whites | 0.00 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | -0.02 | -0.04 | -0.03 |
| African Americans | -0.04 | -0.01 | -0.03 | 0.13* | 0.12$^{+}$ | 0.12* | 0.06 | 0.04 | 0.05 |
| Mothers' Age | 0.02 | 0.03 | 0.06 | -0.18* | -0.18* | -0.21** | -0.06 | -0.06 | -0.09 |
| Relationship to Child | 0.02 | -0.01 | 0.01 | -0.20* | -0.18* | -0.20* | -0.10 | -0.09 | -0.10 |
| Child's City of Residence | | | | | | | | | |
| Boston[1] | | | | | | | | | |
| San Antonio | -0.06 | -0.04 | -0.03 | 0.04 | 0.04 | 0.03 | -0.03 | -0.04 | -0.04 |
| Chicago | -0.03 | -0.02 | -0.01 | 0.10 | 0.09 | 0.09 | 0.02 | 0.02 | 0.02 |
| Family Receiving Welfare | 0.02 | 0.02 | 0.03 | 0.02 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 |
| Mother Employed | -0.02 | -0.03 | 0.00 | -0.11$^{+}$ | -0.10$^{+}$ | -0.12$^{+}$ | -0.18** | -0.16** | -0.17** |
| Income-to-Needs | 0.06 | 0.06 | 0.01 | -0.06 | -0.06 | -0.04 | 0.04 | 0.05 | 0.06 |
| Marital Status | | | | | | | | | |
| Cohabitating[1] | | | | | | | | | |
| Married | 0.08 | 0.04 | -0.01 | -0.10 | -0.07 | -0.05 | -0.04 | 0.00 | 0.02 |
| Single | 0.02 | -0.03 | -0.06 | -0.07 | -0.03 | -0.01 | 0.07 | 0.12 | 0.13 |
| No High School Diploma | -0.15* | -0.11$^{+}$ | -0.08 | 0.00 | -0.02 | -0.04 | 0.03 | 0.00 | -0.01 |
| Number of Minors in the Household | 0.03 | 0.04 | 0.02 | 0.05 | 0.04 | 0.05 | 0.05 | 0.04 | 0.05* |
| Maternal Functioning & Parenting Practices | | | | | | | | | |
| Maternal Health Problems | | -0.28*** | -0.23*** | | 0.17** | 0.14* | | 0.19** | 0.17$^{+}$ |
| Structured Parenting | | | 0.26*** | | | -0.12* | | | -0.11 |
| F | 3.92*** | 5.10*** | 6.35*** | 6.63*** | 7.13*** | 8.32*** | 2.57*** | 2.83*** | 2.95*** |
| $R^2$ | .23 | .28 | .34 | .30 | .32 | .34 | .18 | .20 | .21 |

Table 4. *Domestic violence and young children's socioemotional development, continued*

| | Externalizing Behaviors | | | Serious Externalizing Behaviors | | |
|---|---|---|---|---|---|---|
| Models | 1 | 2 | 3 | 1 | 2 | 3 |
| Socioemotional development, wave 1 | 0.36*** | 0.33*** | 0.32*** | 0.21** | 0.19** | 0.19** |
| Domestic Violence, wave 1 | 0.25** | 0.14$^{+}$ | 0.15$^{+}$ | 0.08 | -0.01 | 0.00 |
| Change in Domestic Violence Rates | 0.21** | 0.17** | 0.18** | 0.23** | 0.19* | 0.21** |
| Child Age | 0.00 | -0.03 | -0.01 | -0.03 | -0.05 | -0.04 |
| Female Child | 0.03 | 0.04 | 0.05 | -0.02 | -0.01 | 0.00 |
| Child Race | | | | | | |
| Hispanics[1] | | | | | | |
| Non-Hispanic Whites | 0.03 | 0.01 | 0.01 | 0.01 | -0.01 | -0.01 |
| African Americans | 0.11$^{+}$ | 0.08 | 0.09 | 0.01 | -0.01 | 0.00 |
| Mothers' Age | -0.09 | -0.09 | -0.12 | -0.03 | -0.03 | -0.06 |
| Relationship to Child | -0.20* | -0.17* | -0.19** | -0.07 | -0.05 | -0.07 |
| Child's City of Residence | | | | | | |
| Boston[1] | | | | | | |
| San Antonio | 0.06 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 |
| Chicago | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 | 0.05 |
| Family Receiving Welfare | 0.09 | 0.09 | 0.09 | 0.16* | 0.16** | 0.15** |
| Mother Employed | -0.04 | -0.02 | -0.03 | 0.00 | 0.02 | 0.01 |
| Income-to-Needs | -0.06 | -0.05 | -0.03 | 0.05 | 0.06 | 0.07 |
| Marital Status | | | | | | |
| Cohabitating[1] | | | | | | |
| Married | -0.23* | -0.18* | -0.16$^{+}$ | -0.09 | -0.05 | -0.03 |
| Single | -0.17 | -0.11 | -0.10 | 0.00 | 0.05 | 0.06 |
| No High School Diploma | -0.01 | -0.02 | -0.04 | 0.03 | 0.00 | -0.01 |
| Number of Minors in the Household | -0.05 | -0.06 | -0.05 | -0.03 | -0.04 | -0.03 |
| | | | | | | |
| Maternal Functioning & Parenting Practices | | | | | | |
| Maternal Health Problems | | 0.25*** | 0.22*** | | 0.21** | 0.18** |
| Structured Parenting | | | -0.12* | | | -0.11* |
| F | 9.20*** | 9.92*** | 9.67*** | 2.69*** | 2.89*** | 2.93*** |
| $R^2$ | .29 | .34 | .35 | .15 | .18 | .19 |

*Notes (a)*: $+p < .10$; $*p < .05$; $**p < .01$; $***p < .001$; (b) Standardized regressions coefficients are presented, and; (c) [1]Represents omitted group