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The Relation of Exposure to Violence and Maternal Responsiveness to Young Children's
Behavioral Functioning: Evidence from a High-Risk Sample

by

Lynne Margaret Dunlap

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Education

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Susan D. Holloway, Chair
Professor Frank C. Worrell
Professor Jill Duerr Berrick

Fall 2010

The Relation of Exposure to Violence and Maternal Responsiveness to Young Children's Behavioral Functioning: Evidence from a High-Risk Sample

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by Lynne Margaret Dunlap

Abstract

The Relation of Exposure to Violence and Maternal Responsiveness to Young Children's Behavioral Functioning: Evidence from a High-Risk Sample

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Lynne Margaret Dunlap

Doctor of Philosophy in Education

University of California, Berkeley

Professor Susan D. Holloway, Chair

This study examined the direct and interactive effects of domestic and community violence exposure on young children's behavioral functioning in a low SES, multi-ethnic sample of 143 single mothers and their young children (age two to six years). This study also investigated the role of maternal responsiveness to children's sad and angry emotions as either a moderator or mediator of the effects of violence exposure on children's behavioral adaptation. The sample was composed of clinical ($n = 111$) and community ($n = 32$) subsamples. Approximately 77% of the children had been exposed to domestic violence perpetrated against the mother during the year prior to data collection.

Findings indicate that, after controlling for maternal ethnicity and maternal age, community violence exposure significantly predicted internalizing, externalizing, and total behavior problems above and beyond that predicted by domestic violence. After controlling for maternal ethnicity, maternal age, and community violence exposure, domestic violence exposure significantly predicted internalizing behavior problems. However, domestic violence exposure did not moderate the direct effects of community violence exposure on young children's behavioral functioning. Maternal responsiveness did not moderate or mediate the effects of either domestic or community violence exposure on children's internalizing, externalizing, or total behavior problems and was not related to child behavioral functioning. These findings suggest that both domestic and community violence exposure are risk factors for young children's social and emotional development. The findings also highlight the importance of including both forms of violence exposure in assessments of young, high-risk children experiencing behavioral problems.

For Danny

and for

Martha
&
Vitti

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The Relation of Exposure to Violence and Maternal Responsiveness to Young Children's Behavioral Functioning: Evidence from a High-Risk Sample

Violence occurs across the many ecological levels of public and private life: War and terrorism span political, community, family, and individual landscapes; community violence influences neighborhood infrastructures and impacts families, friends, and strangers; school violence affects teachers, students, and staff; family violence shapes parents and children. For young children in the United States, violence exposure occurs primarily within the community and the home (Finkelhor, Turner, Ormrod, & Hamby, 2009; Pynoos, 1993). Exposure to community violence encompasses a wide range of events: Children may witness gang behavior in a neighborhood or a burglary within the home; they may directly experience a physical threat on the street; or they may witness someone being arrested by police. Violence within the home may be between parents (domestic violence) or be directed at the child (Cicchetti & Lynch, 1993; Finkelhor et al., 2009; Richters & Martinez, 1993).

Being exposed to violence is a major life stressor and health risk for adults, adolescents, and children of all ages. For young children, violence exposure frequently affects emotional well-being and adaptive functioning (Finkelhor et al., 2009; Kaufman & Henrich, 2000; Lewis-O'Connor, Sharps, Humphreys, Gary, & Campbell, 2006; Lynch, 2006; Schechter & Willheim, 2009; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003). Violence exposure may engender strong emotions of fear, anxiety, anger, and distress, and initiate powerful neuroendocrine responses (Kaufmann & Henrich, 2000; Schechter & Willheim, 2009). Violence exposure may also influence cognition and behavior, resulting in new fears (Zero to Three, 1994), changed perceptions of the self and others (Grych, Wachsmuth-Schlaefler, Klockow, 2002; Minze, McDonald, Rosentraub, & Jouriles, 2010), and an increase in aggression or withdrawal (Lewis-O'Connor et al., 2006; Lynch, 2006). Violence can be traumatic when it includes the threat or actual occurrence of physical harm, injury, or death, initiating overwhelming fear and a range of posttraumatic stress responses (American Psychiatric Association, 2000).

Events that insult the caregiver milieu leave a young child particularly vulnerable to threat (Bowlby, 1969/1982; A. Freud, 1969; S. Freud, 1920; Milgram 1998; Zeanah & Scheeringa, 1997). In a review of traumatic events impacting children under three years of age, Rutenberg (1997) reports that very young children appear to be uniquely affected by events that involve the injury or death of a parent (particularly if the child is a witness), the sudden loss of family members, or the disruption or loss of the family or home (see also Almqvist & Broberg, 2003; Laor et al., 1996). For young children, witnessing a violent threat against a parent or caregiver appears to elicit higher rates of posttraumatic stress symptoms than other types of traumatic events (Rossman, Bingham, & Emde, 1997; Scheeringa & Zeanah, 1995; Silva et al., 2000).

How does a young child cope with exposure to violence? Across the lifespan, responding to violence entails adaptation to the violent event or violent experience (Pynoos, Steinberg, & Wraith, 1995). This adaptation requires enlisting emotional, behavioral, and cognitive resources and strategies in order to escape or modify the threat, ameliorate the stress, and restore a sense of well-being and equilibrium (Fosco, DeBoard, & Grych, 2007; Pynoos et al., 1995). Internal states of emotional and physiological arousal must be modulated, and cognitive appraisals of both the threat and sources of help must be made and acted upon (Compas, Conner-Smith,

Saltzman, Thomsen, & Wadsworth, 2001; Fosco et al., 2007; Lazarus & Folkman, 1984; Pynoos et al., 1995).

For a young child, these coping skills and self-regulation abilities are still in the process of development (Calkins & Hill, 2007; Cummings & Davies, 2010; Kochanska, Coy, & Murray, 2001; Kopp, 1982, 1989). Not only are the requisite cognitive and motor capacities undergoing rapid change, but social and emotional regulation still reside primarily within the caregiver-child framework. Young children remain dependent upon the family and primary caregivers for help with managing and understanding their feelings and behavior (Calkins & Hill, 2007; Thompson, 1994). Although self-regulation of emotions and behavior is partially rooted in temperament and numerous aspects of emotional expression and reactivity (Calkins & Fox, 2002; Rothbart, Posner, & Kieras, 2006), the caregiver-child matrix and the child's attachment relationships provide ongoing and necessary regulatory assistance with strong and difficult emotions, as well as protection from environmental threats throughout early childhood (Bowlby, 1969/1982; Calkins & Hill, 2007; Contreras & Kerns, 2000; Thompson & Meyer, 2007).

It is within the context of the caregiver-child relationship that a young child learns to understand and manage emotions and behavior, but that accomplishment is in great part shaped by the caregiver's psychological availability, as well as by the caregiver's sensitivity and responsiveness to the child's signals and emotions (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1973). These particular caregiving capacities are a central resource and guide for young children as they navigate stressful and threatening situations.

This study investigates the effect of maternal responsiveness on the behavioral functioning of young children who have been exposed to domestic or community violence. Of chief interest is how a mother's responsiveness to her child's sadness and anger may protect her child from the effects of violence exposure (i.e., moderate the effects of exposure on her child's adjustment) or alternatively, may mediate the relation between violence exposure and her child's adaptation. A number of research studies have addressed the role of caregiver capacities and characteristics in helping young children adapt to domestic and community violence exposure. These studies have focused primarily on the mother's psychological distress and, to a lesser degree, on the mother's parenting style. Although a mother's psychological distress and functioning have been shown to be robust mediators of the relationship between children's exposure to violence and child adaptation, less attention has been paid to examining aspects of a mother's parenting practices. This study extends this prior research by investigating the role of maternal responsiveness to her child's negative emotions.

In the following pages, I briefly discuss ecological-transactional models of child development and exposure to violence, models that help determine the particular research approach of this study. I then review the prevalence of young children's exposure to domestic and community violence, as well as the range of cognitive, health, social, and emotional outcomes associated with that exposure. I then turn to two theoretical approaches that inform this investigation: (a) traumatic stress theory, which elucidates both the potential nature of violence exposure and the adaptive pressures it places on a young child, and (b) attachment theory, which addresses parenting dimensions that support the development of self-regulation across early childhood, in particular the role of maternal responsiveness to children's emotions. I

also provide a review of the research addressing maternal parenting characteristics that influence the impact of domestic and community violence exposure on young children's functioning. This information is followed by a description of the research questions and specific hypotheses regarding the impact of domestic and community violence on young children's behavioral adaptation and the influence of maternal responsiveness on those associations.

An Ecological-Transactional Perspective on Young Children's Exposure to Domestic and Community Violence

Ecological-transactional models of development suggest that children develop within an interrelated set of environmental influences, social systems, and biological systems that interact to shape and promote development (Bronfenbrenner, 1977; Cicchetti & Lynch, 1993). The child's own biophysiological characteristics interact with primary caregivers, with the family, and with the larger social spheres of community and culture (Sameroff & Fiese, 1990, 2000). Ecological-transactional models of violence exposure also situate both violence and the child's response to violence within these multiple ecologies. Child, family, and societal factors will shape the nature of the violence, the child's experience of violence, and the resulting effects (Marans, 1996; Marans, Berkman, & Cohen, 1996; Osofsky, Cohen, & Drell, 1995; Pynoos, Steinberg, & Goenjian, 1996; Pynoos et al., 1995).

Bronfenbrenner's (1977) ecological systems theory locates a child within four stratified and nested environmental domains. Each domain contributes to and interacts with the other domains to shape and influence development. A *microsystem* is a child's immediate, most proximal, environmental milieu, a setting in which interpersonal relationships play a prominent role in development. Throughout childhood, children are immersed in numerous microsystems, including the family and home environment, school or daycare, affiliations with friends and peers. The *mesosystem* consists of the relationships between these different microsystems and their importance at different times in a child's development. The influence of marital conflict on the quality of the caregiver-child relationship or on the quality of parenting is one example (Erel & Burman, 1995). The *exosystem* encompasses the more distal environments of neighborhoods and communities, and comprises factors such as neighborhood poverty and violence, availability of social supports, parent employment opportunities, and social and community policies and provisions (e.g., funding for public transportation) that affect the child's caregiving environment, which in turn may affect the child's welfare. The *macrosystem*, the most distal domain, entails the array of economic, social, political, and cultural institutions and influences that, in part, determine the characteristics of the other three systems. Government social welfare policy and economic planning influence communities as well as families, further shaping the child's development.

Cicchetti and Lynch (1993) also conceptualized transactional ecologies as nested domains, with varying proximity to and influence on the child. In addition to macro-, exo-, and microsystems, they proposed an additional dimension at the level of *ontogenetic development*, the domain that encompasses the child and the child's adaptation. In their exploration of the impact of violence exposure on children, Lynch and Cicchetti (1998) described the numerous events and processes that occur within each ecological stratum as either *potentiating* or *compensatory* risk factors for child adaptation. Community violence (within the exosystem) and

domestic violence and maternal distress (within the family microsystem) are understood to be potentiating risk factors; attachment relationships, parent socialization of emotion regulation, and maternal responsiveness (within the family microsystem) are conceptualized as compensatory risk factors.

Similarly, in later work, Bronfenbrenner (1995; Bronfenbrenner & Morris, 2006) emphasized the biopsychological dimensions of child development and focused on the interaction between the active, dynamic child and the *proximal processes* (such as parent-child interaction) that are especially influential in early childhood. In addition, Bronfenbrenner (1977) placed any violence directly experienced by the child within the microsystem. As Cicchetti and Lynch (1993) noted, this places violence exposure within the ecological system closest to the child's ontological development and adaptation. Violence exposure, then, is expected to have a direct effect on children's adaptation and affect, and behavioral outcomes associated with young children's violence exposure reflect this direct association (Cicchetti & Lynch, 1993). However, because the microsystem includes the family and primary caregivers, it is possible that violence exposure may interact with these additional factors to produce indirect effects on the child's development.

These ecological-transactional models and their conceptualization of the impact of violence exposure on young children's development suggest four research implications: (a) that domestic and community violence, located within the microsystem and exosystem respectively, can be examined separately as independent influences on child adaptation; (b) that because both forms of violence may also be considered to occur within the microsystem, direct effects of each on child functioning should be investigated; (c) that because domestic and community violence may transact to influence child adaptation, their interaction should be examined; and (d) that maternal parenting practices are proximal processes (Bronfenbrenner, 1995) or compensatory risk factors (Cicchetti & Lynch, 1993) that may interact with violence exposure to produce indirect effects on child functioning.

Most studies of children's exposure to violence examine one type of violence at a time. Only a few studies have examined children's exposure to multiple forms of violence concurrently, and they have found differential effects for different types of violence exposure, with a range of behavioral and psychological outcomes. In their study of child maltreatment and community violence in a school-age cohort, Lynch and Cicchetti (1998) found that these types of violence had distinct effects on children's functioning and development. Specifically, children who had experienced maltreatment displayed more externalizing and internalizing behaviors than children who had not experienced maltreatment, and children from high-violence neighborhoods reported higher levels of traumatic stress, depression symptoms, and lower self-esteem than children from low-violence neighborhoods. The interaction effect between maltreatment status and community violence exposure was not significant. In a study of a non-risk, multi-ethnic, community sample of 8- to 12-year-old children, Malik (2008) found that community violence was related to both internalizing and externalizing behaviors, whereas domestic violence was related only to externalizing behaviors. In addition, community violence and the interaction of domestic and community violence predicted aggressive behavior.

Research investigating the exposure of preschool children enrolled in Head Start programs to both domestic and community violence also indicated differential effects of violence exposure. Child abuse and domestic violence—but not community violence—made unique contributions to health outcomes (Graham-Berman & Seng, 2005). Community violence was related to higher levels of internalizing and externalizing behaviors and lower levels of self-control and cooperation, whereas domestic violence was linked to increased internalizing behaviors (Oravec, Koblinsky, & Randolph, 2008). Family conflict was related to children's distress, and community violence was linked to children's distress, aggression, and social competence (Farver, Xu, Eppe, Fernandez, & Schwartz, 2005).

Because violence at both community and family levels may have disparate effects on young children's functioning, in this study I assessed both forms as independent, additive, and interactive contributors to child adaptation. In addition, a specific parenting factor—maternal responsiveness to her child's sad and angry emotions—was considered a proximal process or compensatory risk factor within her child's life that may moderate her child's response to violence exposure, or may mediate the relation between violence exposure and children's adaptation.

The Prevalence of Young Children's Exposure to Domestic and Community Violence

It is difficult to obtain accurate information about the rates of violence exposure for young children. Most prevalence studies report estimates only for older children and adults, typically not reviewing children under six years of age (Rand & Truman, 2010; Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003; for an exception see Finkelhor et al., 2009). In addition, many methodological, definitional, and conceptual issues make it difficult to gain a comprehensive estimate of prevalence rates. Population-based surveys typically assess large community samples (Finkelhor et al., 2009; McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006), whereas research studies typically measure exposure rates within smaller, at-risk samples (for a review, see Stein et al., 2003), making it difficult to compare estimates. Furthermore, different interview or survey methodologies utilize different types of instruments (e.g., phone or in-person interviews, maternal or parental questionnaires, child report questionnaires, and police records), which can introduce method bias, thereby making accuracy problematic (Feerick & Prinz, 2003). In addition, different measures often assess different event types and levels of violence exposure (including direct and indirect exposure), with some surveys also assessing frequency, severity, and contextual factors (Trickett, Duran, & Horn, 2003), thus making comparisons between studies difficult.

Despite this methodological complexity, a range of estimates establishes that substantial numbers of young children are exposed to domestic and community violence. In a recent national sample of 4,549 American children, approximately 29% of those aged 0 to 17 years and 9% of those aged 2-5 years had witnessed community assault during their lifetimes (Finkelhor et al., 2009). Lifetime exposure for domestic violence (parent assault) was approximately 16% for children aged 0-17 years and almost 14% for children aged 2-5 years (Finkelhor et al., 2009). Another nationally representative sample of children aged 0-17 years concluded that annual exposure to domestic violence was approximately 30%, including approximately 13% exposed to severe domestic violence (McDonald et al., 2006). Age groups were not broken down in this study. A review of police report records of child exposure to domestic violence in a county in

the Northeast United States, found that children were present during 44% of all substantiated domestic violence events, 81% of whom witnessed the events. Of those who witnessed domestic violence events, 50% were children under six years of age (Fantuzzo & Fusco, 2007). In a smaller police-report study of domestic violence exposure in Rhode Island, Gjelsvik, Verhoek-Oftedahl, and Pearlman (2003) also reported that children were present at 44% of domestic violence events, with 48% of these children under six years of age.

Research-based studies on community violence typically report large ranges of exposure for school-age children. However, it cannot be assumed that young children, who are not as involved in the ecological domains of the neighborhood and school, experience the same amount of exposure. Studies of at-risk children in grades 6 and 7 utilizing parent-report measures found direct exposure rates between 21% and 50% and witnessing rates between 84% and 93% (Osofsky, Wewers, Hann, & Fick, 1993; Richters & Martinez, 1993). Child report in the Richters and Martinez (1993) study indicated direct exposure at 59% and witnessing at 97%. Comparatively, in a study of at-risk African-American preschool children enrolled in a Head Start program, parent report indicated that 67% of the children had been exposed to at least one community violence event, and child report indicated that 78% had been exposed to at least one violent event (Shahinfar, Fox, & Leavitt, 2000).

Additionally, Linares et al. (2001) asked mothers residing in a high-crime area to report on their preschool children's exposure to community violence, and found that 81% of mothers and 42% of children had witnessed one event, 21% of children had witnessed three or more events, and 12% of children had witnessed eight or more events within the last year. Farver and colleagues (2005) interviewed mothers with preschool children in a Head Start program about co-experiencing community violence along with their preschool children, and found that mothers reported a mean of 10.69 events for themselves and a mean of 10.06 events for their children during the past year. Thus, although estimates of domestic and community violence exposure rates are both infrequent and difficult to compare, young children in national samples—as well as young children in at-risk samples—appear to experience both forms of violence at a significant rate.

Developmental and Adaptive Outcomes for Young Children Exposed to Domestic and Community Violence

A range of negative developmental and adaptive outcomes has been directly related to young children's exposure to domestic and community violence (Schechter & Willheim, 2009). These outcomes include health problems, impaired cognitive abilities, psychological distress (including posttraumatic stress), biophysiological changes (primarily neuroendocrine changes), and affect and behavioral problems (Schechter & Willheim, 2009). Although health and cognitive outcomes have not been studied extensively, preschool children's exposure to domestic violence and physical abuse predicted high levels of health problems (Graham-Bermann & Seng, 2005), and children exposed to domestic violence have consistently been found to have significantly lower verbal abilities when compared to same-age children from non-exposed samples (Graham-Bermann, Howell, Miller, Kwek, & Lilly, 2010; Huth-Bocks, Levendosky, & Semel, 2001; Ybarra, Wilkens, & Lieberman, 2007). Preschool children's exposure to community violence was predictive of lower cognitive performance, and this relation was mediated by child distress (Farver, Natera, & Frosch, 1999).

Young children exposed to domestic or community violence are at increased risk for experiencing traumatic stress, developing posttraumatic stress symptoms, and posttraumatic stress disorder (Bailey, Hannigan, Delaney-Black, Covington, & Sokol, 2006; Bogat, DeJonghe, Levendosky, Davidson, & von Eye, 2006; Farver et al., 1999, 2005; Graham-Bermann, De Voe, Mattis, Lynch, & Thomas, 2006; Graham-Bermann & Seng, 2005; Kitzmann, Gaylord, Holt, & Kenny, 2003; Levendosky, Huth-Bocks, Semel, & Shapiro, 2002; Linares & Cloitre, 2004; Shahinfar, 1997). In addition, neurobiological correlates of posttraumatic stress (e.g., higher levels of cortisol stress hormones and heart rate indices) are found to be elevated in young children exposed to domestic violence and other traumatic stressors when compared to non-exposed children (Perry & Pate, 1994; Saltzman, Holden, & Holahan, 2005; Scheeringa, Zeanah, Myers, & Putnam, 2004). Furthermore, it has been suggested that early childhood trauma and prolonged and permanent neuroendocrine changes may negatively influence early brain development (Perry, Pollard, Blakeley, Baker, & Vigilante, 1995; Rifkin-Graboi, Borelli, & Enlow, 2009).

Additional types of affect and behavioral problems are also associated with young children's exposure to violence. Across studies of multi-ethnic and high-risk groups, preschool children with greater exposure to community violence experience increased levels of externalizing and internalizing behaviors, distress, aggression, and lower social competence (Aisenberg, 2001; Farver et al., 1999, 2005; Linares et al., 2001; Martinez & Richters, 1993; Oravec et al., 2008; Shahinfar et al., 2000). Similarly, preschool children exposed to domestic violence show increased levels of aggression, negative behavioral interaction, dysregulated affect, and externalizing and internalizing behaviors (Graham-Bermann & Levendosky, 1998; Huang, Wang, & Warrener, 2010; Litrownik, Newton, Hunter, English, & Everson, 2003; Martin & Clements, 2002; Martinez & Richters, 1993; Oravec et al., 2008; Ybarra et al., 2007).

Theoretical Models for Understanding Young Children's Responses to Violence

A range of theoretical models has been proposed to account for the associations between exposure to domestic and community violence and child behavioral and psychological outcomes. Social cognitive theory (Bandura, 1974) suggests that young children learn their behaviors through modeling adult behaviors, including difficulties that parents may have managing emotions and establishing cooperative relationships, as well as violent actions within the home and community. Cummings and Davies (2010; Davies & Cummings, 1994) suggested that children, instead of becoming habituated to marital conflict (and by extension, to community conflict) become sensitized to marital conflict (or community violence) over time and respond with heightened distress and behavioral problems when faced with additional experiences of conflict or violence.

Family systems theories suggest that multiple relationships within the family context shape and determine early childhood behavior, either through the quality of the parent-child relationship or through the characteristics of parenting practices (Cox, Paley, & Harter, 2001). One particular model within family systems theories is the spillover hypothesis (Erel & Burman, 1995; Frosch & Mangelsdorf, 2001; Krishnakumar & Buehler, 2000) which states that relationship difficulties—such as marital conflict or domestic violence within the parent relationship or, by extension of this model, difficulties within the extended family or life history

of the mother—produce parenting affect and behavior that will transfer to or shape the parent-child relationship domain. Maternal stress, maternal psychological distress, and maternal behaviors can influence the mother-child relationship, including parenting behavior. Negative changes in the parent-child relationship or parenting behaviors associated with domestic violence or maternal life stress will likely negatively influence child functioning (Huang et al., 2010; Levendosky, Leahy, Bogat, Davidson, & von Eye, 2006; Lieberman, Van Horn, & Ozer, 2005).

Analogously, attachment perspectives (Katz & Gottman, 1996; Volling & Belksy, 1991) and the emotional security hypothesis (Cummings & Davies, 2010; Davies & Cummings, 1994) suggest that children's need for secure and safe attachments with their parents or emotional security and safety within the family system is threatened by negative, particularly aggressive, marital conflict. If marital conflict impacts parenting behavior through a decrease in availability, attunement, sensitivity, or responsiveness, it is likely that children's attachments to their parents and their emotional security within the family will be negatively influenced. These changes to the child's sense of security are likely to result in increased distress.

In this study, the spillover hypothesis will be investigated and extended by examining the relation between children's domestic and community violence exposure and an attachment-related maternal parenting capacity, specifically a mother's responsiveness to her child's sadness and anger. Whereas domestic violence is consistently associated with parenting practices, studies investigating the relation between community violence exposure and parenting variables are more limited and have found mixed results. Kliewer and colleagues (2004) found that school-age children's exposure to community violence was strongly associated with child report of felt acceptance by the mother but Oravec and colleagues (2008) found that maternal parenting (defined as nurturance, consistency, responsiveness, and control) was not significantly associated with maternal exposure to community violence. One purpose of this study is to investigate the relation between a child's exposure to community violence and maternal responsiveness.

Stress and traumatic stress theories offer an additional perspective (Graham-Bermann & Seng, 2005). These theories propose that experiencing violent events is inherently stressful and may be traumatic, depending on the nature of the violence and the context surrounding it. They also postulate that when exposed to extreme stressors, individuals employ a range of coping adaptations in an effort to manage both the stress and the environment (Lazarus & Folkman, 1984; Pynoos et al., 1995). The adaptation to stress may result in a range of detrimental outcomes, depending on the availability of protective resources (Marans, 1996), event characteristics (Pynoos & Nader, 1988), and child capacities (Pynoos et al., 1996). Theories like these may offer insight into a young child's experience of domestic and community violence.

Stress and Traumatic Stress Theory

Numerous theoretical and conceptual models describe the effects of early childhood traumatic experience on young children's adaptation (Kahn, 1967; Kris, 1956; Rutenberg, 1997; Pynoos et al., 1996; for a review, see Varkas, 1998). These models vary in orientation from psychoanalytic constructs of ego dysfunction (A. Freud, 1969; S. Freud, 1920; Khan, 1967) to neurobiologically-based models of affective and cognitive mapping and restructuring (Perry et al., 1995; Rifkin-Gabroi, 2009; Schore, 2001). Although each theoretical model contains

particular definitions of psychological trauma, all models address the effects of overwhelming, external environmental events upon the cognitive, affective, and behavioral development of young children (for an exception, see Kahn, 1967). And although each model focuses on a principal element of traumatic experience—either the child’s internal response or environmental determinants—all models conceptualize childhood traumatic experience as a transaction between an event and the psychosocial milieu of the child.

Stress and vulnerability paradigms and adaptive models of trauma maintain a child-centered focus. In these models, traumatic response is activated by a psychosocial stressor of sufficient magnitude to elicit a range of symptomatic responses: anxiety, fear, distress, affect and behavioral disorganization, and neuroendocrine arousal (Eth, 1990; Kaufman & Henrich, 2003; Schechter & Willheim, 2009). In extreme situations, children may be rendered helpless, overwhelmed by the anxiety and arousal elicited by a threat to themselves or to important others (American Psychiatric Association, 2000; Zero to Three, 1994), and they may be temporarily unable to respond or adapt. Traumatic events can be either acute (exposure to a singular stressor) or chronic (ongoing exposure to new or repeated threatening events; Herman, 1993, 1997; Rutenber, 1997; Terr, 1991).

In situations of either acute or chronic violence, children will begin to manage and assimilate the events, engaging in a rapid, dynamic process of both evaluating the events and modulating their psychological experience (Pynoos et al., 1996). Initially, the child focuses all sensory and cognitive capacities on appraising particular event parameters: noting both the sources and magnitude of threat and protection; estimating the availability and effectiveness of caretakers, siblings, other adults and peers; and evaluating her own behavioral capacities to prevent or amend outcomes. Simultaneously, the child monitors her own cognitive, affective, and autonomic responses, including intense moment-to-moment perceptual and somatic experiences, physical helplessness, and physiological reactivity. The intensity and duration of this experience, amelioration from the caregiving environment, and the child’s behavioral and cognitive efforts and success at managing the experience, result in immediate short- and long-term outcomes. As a major life stressor, exposure to domestic and community violence requires young children to assess and psychologically respond and adapt to their experience of violence. Nested within the caregiver-child relationship, young children must also evaluate the availability of the caregiver and the quality of the relationship.

The focus in this study is on a stress and traumatic stress model of domestic and community violence exposure and the caregiving support that helps children adapt to violent events. Although not all violence exposure is traumatic, violence exposure typically elicits fear and distress in children and adults (Kaufman & Henrich, 2000; Schechter & Willheim, 2009), and many aspects of both domestic and community violence are classified as traumatic (Farver et al., 1999; Graham-Bermann et al., 2008, 2010; Pynoos, 1993; for a review, see Dunlap, 2001).

Numerous community violence events, such as the threat, witnessing, or experiencing of physical assault; serious accidents in which the death of the child, parent, or another person seems possible; beatings; muggings; and sexual assault can be classified as potentially traumatic (American Psychiatric Association, 2000). Such events are frequently assessed in community violence questionnaires in national prevalence rate studies (Finkelhor et al., 2009), in research

studies of the impact of community violence on young children (Farver et al., 2005; Linares et al., 2001; Richters & Martinez, 1993), and in the community violence questionnaire used in this study (see Appendix A). Moderate and severe physical aggression that occurs in domestic violence also meets the criteria for potentially traumatic events (American Psychiatric Association, 2000).

In addition, as noted above, studies of both domestic and community violence exposure and young children's outcomes consistently find that posttraumatic stress response is a frequent and prevalent adaptation to violence exposure. Furthermore, there is evidence that a young child's witnessing of violent threats to a primary caregiver (as occurs when a child witnesses domestic violence against the mother) elicits higher rates of posttraumatic stress disorder and distress across a range of trauma types (Rossman, Bingham, & Emde, 1997; Rutenber, 1997; Scheeringa & Zeanah, 1995; Silva et al., 2000).

Young Children's Coping and Adjustment: The Role of the Caregiver-Child Matrix and Attachment Relationships

In order to adapt to stress successfully, adults and children must manage their emotions, regulate and direct their behavior and thoughts, control their autonomic arousal, and act on the social and nonsocial environment in order to eliminate the source of stress or decrease its potency (Fosco et al., 2007; Lazarus & Folkman, 1984; Pynoos et al., 1996). These coping abilities are considered to be, in part, the product of the development of emotion regulation capacities (Contreras & Kern, 2000; Kliwer, Lepore, Oskin, & Johnson, 1998; Kliwer, Sandler, & Wolchik, 1994; Kopp, 1992).

Across the lifespan, emotion regulation is considered to be a set of transactional processes, both extrinsic and intrinsic, involving behaviors, skills, and strategies that serve to monitor, modulate, inhibit, or enhance emotional experience, expression, and reaction (Calkins & Hill, 2007; Thompson, 1994). Self-regulation of emotion and behavior develops throughout early childhood (Cummings & Davies, 2010; Kochanska et al., 2001; Kopp, 1982; 1989; Rosenblum, Dayton, & Muzik, 2009), shifting from external sources of help and guidance to internal capacities for self-soothing, monitoring, and control. Initially dependent upon caregiver and family processes to modulate feelings and affective experience, a young child both learns and develops intrinsic regulatory capacities that enable the child to manage and shape his emotions as well as respond to the environment (Thompson, 1994). Early parent-child interaction and attachment relationships are hypothesized to provide both the context and the learning niche for the development of young children's emotion regulation capacities (Bowlby, 1969/1982; Calkins & Hill, 2007; Contreras & Kerns, 2000; Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000; Sameroff, 2009; Sroufe, 2000; Thompson & Meyer, 2007).

Early Parent-Child Interaction and Attachment Relationships

Critical aspects of emotional and social development in infancy and early childhood occur within the specificity of the caregiver-child relationship, a highly interactive and intimate microsystem in which the infant, toddler, or young child is immersed in a rich emotional and behavioral exchange with his primary caregiver (Rosenblum, Dayton, & Muzik, 2009; Saarni, Mumme, & Campos, 1998). Described as the experience and development of cooperative intersubjectivity (Trevarthan, 2001), moments of shared awareness or meeting (Sander, 2000),

affective attunement and relatedness (Stern, 1985), early caregiver-child interaction is considered to be a prototypical communicative experience, laying down foundations for later social relatedness (Thompson, 1999), sense of self (Fonagy, Gergely, & Target, 2007; Sroufe, 2000), and emotion regulation skills (Thompson, 1994).

The exchange of affect and behavior between the caregiver and the young child is described as a mutually regulatory process, each partner adjusting and modulating his or her response in relation to the other's affect and behavior (Fogel, 1993; Sander, 1975; Stern, 1985). Sroufe (2000) described the development of this exchange as a progression from "caregiver orchestration in early infancy" (p. 69) to dyadic interchange, as the infant's affect, behavior, and self-initiative grow into goal-corrected partnership in late infancy, toddlerhood, and early childhood. Initially, the infant is largely dependent upon the caregiver for regulating arousal and emotional states, maintaining physiological homeostasis, soothing distress, and ensuring contentment (Greenspan & Lieberman, 1989). Over the course of the first year, the infant, equipped with a more extensive set of emotions and communication abilities, more skillfully signals needs, but still remains reliant on the caregivers' capacities to interpret and respond to those needs (Ainsworth et al., 1978; Sroufe, 2000). The infant begins to act purposefully with the caregiver, behaving in specific ways to elicit particular responses from the caregiver. If the caregiver misinterprets or fails to notice the child's signals, the child can seek contact and response from the caregiver (Ainsworth et al., 1978). As language and cognition develop, this goal-corrected partnership incorporates the young child's autonomy, communicative skills, and representational capacities.

It is out of this interactive milieu that the child's attachment to the primary caregiver emerges. Based on early co-regulation of emotion and behavioral communication, a dyadic process of interaction and emotional understanding develops between the child and caregiver. This dyadic process serves both as a lasting template of emotional and social organization for the child and the foundation for the development of an attachment relationship to the child's primary caregiver. Based on the specific quality of early dyadic interactions, particularly in response to infant distress or in situations in which the infant is threatened or afraid, the infant establishes a particular style or quality of attachment to the caregiver (Ainsworth et al., 1978; Bowlby, 1969/1982; Kobek & Sceery, 1988; Sroufe, 1979, 1996). The attachment relationship links the child to the caregiver during times of stress and, once safe and reassured, the child may turn outward again to the environment, explore and learn, and return to the caregiver to share discoveries and the joy and pleasure associated with them. The caregiver serves as a secure base (Ainsworth et al., 1978) for the infant and child: a place of retreat and protection, a place from which to engage a difficult environment.

Posited as an evolutionary behavioral system, the attachment relationship is conceptualized as a "security regulating system" (Bretherton, 1980, p. 197), the specific pattern of interchange between a young child and the primary caregiver when the infant or child is distressed and seeks protection from the caregiver (Bowlby, 1969/1982). In times of threat or distress, the child's attachment system is activated and the child seeks out the parent. The parent's corresponding caregiving system is similarly activated and the parent seeks to protect and safeguard the infant (Cassidy, 1999). Based on both affect and behavioral displays, the caregiver-child dyad responds in order to guarantee the safety and well-being of the child.

Attachment theory suggests that the quality of the child's attachment to the primary caregiver is predominantly dependent upon, and a reflection of, the quality of maternal (or paternal) caregiving (Ainsworth et al., 1978). A mother's availability, sensitivity to her infant's distress signals, and responsiveness to her child's affect and behavioral displays shape the child's attachment relationship (Ainsworth, Bell, & Stayton, 1991; Bowlby, 1973). Maternal availability refers not to physical proximity *per se*, but to the child's expectation that the mother will respond to the child's signals and displays, and to the child's reliance on the quality of parent-child communication (Bowlby, 1973; Kobak, 1999). Reliable open communication between caregiver and child—the display of, and response to, signals and behavior—allows the child to feel confident in the mother's availability.

Early Caregiver-Child Interaction and Attachment Relationships as Child Regulatory Experience

Early caregiver-child interaction and attachment relationships have been posited as serving important regulatory functions, which, with development, will become representational and guide child emotional experience and behavior over time (Bretherton, 1990; Calkins & Hill, 2007; Sroufe, 2000). The mother's affective response to the infant allows the child to experience both arousal escalation and reduction as a function of the caregivers' ministrations. During the course of mother-child interaction, the infant is steered to longer periods of emotionally-charged but organized behavior. Hofer (1994) suggested that these early dyadic interactions help create a child's inner affective experience, an experience composed of sensory, physiological and behavioral responses, which eventually leads to organized representations that guide the child's affective experience and behavior. Similarly, Sroufe (2000) suggested that within this interactive framework, infants learn about sustainable, organized affect and affective relationships, and over time develop this organizing capacity as an aspect of their own self-regulatory repertoires.

The attachment relationship serves a similar affect-organizing function. Elicited in times of stress and threat, the attachment and caregiving systems serve to reduce that stress and modulate heightened emotions and upset (Calkins & Hill, 2007). Parental availability, sensitivity to child emotional and behavioral signals, and responsiveness to those signals allow a child to experience affect regulation through the assistance of the caregiver. These organized and modulated experiences will, in turn, contribute to expectations of maternal help and become incorporated in the child's representations of affect (Bretherton, 1990; Thompson & Meyer, 2007).

Furthermore, in a discussion of different attachment patterns, Cassidy (1994) noted that the formation of an attachment relationship is, in part, the product of the child's regulatory efforts: Attachment patterns involve specific affective and behavioral strategies that allow young children to have their security needs met. As such, the specific patterns of attachment are outcomes not only of maternal responsiveness but also of young children's affect and behavioral self-regulation.

Because the child experiences affect and behavior within the context of relationships, relationships become a familiar means through which to regulate affective experience (Sameroff, 2009). Sander (2000) and Cassidy (1994) noted that the caregiver-child relationship is the first

context in which infants and young children must adapt their emotional and social behavior. As the caregiver-child relationship changes over the course of development, the relationship will expand to provide instruction in emotional understanding and direct teaching of affect and behavioral expectations for the child, who will then learn and implement additional affect and behavioral strategies when coping with upset (Contreras & Kerns, 2000). Parents, in turn, will begin to monitor their children's own regulatory efforts, amending and correcting these efforts as needed (Contreras & Kern, 2000; Kliewer et al., 1994; Thompson & Meyers, 2007). The open communication that began in infancy as affective and behavioral exchange will incorporate language and cognition to promote the child's self-regulation and adaptation and protect the child from threat (Contreras & Kerns, 2000).

Additional Parenting Help with Young Children's Emotion Regulation

In discussing family processes that promote emotion regulation in childhood, Thompson and Myers (2007) noted the importance of a number of interrelated parenting capacities that supplement the quality of the parent-child relationship: (a) direct intervention in children's emotional experience and in situations that elicit upset or distress; (b) parent evaluation or awareness and acceptance of children's negative emotions; (c) parent thoughts and beliefs about children's emotions, which can result in parents coaching their children about both emotions and appropriate behaviors to help manage emotion; and (d) parent communication and discourse about emotions and emotion regulation. (For additional reviews, see Contreras & Kern, 2000 and Kliewer et al., 1994).

Direct parental intervention in a child's emotional experience begins from birth and extends through adolescence and early adulthood; early infant modulation gives way to assisting the child in solving problems that are frustrating or difficult, providing interpretations of arousing experiences, suggesting ways of responding emotionally, or structuring the environment to minimize upset or difficulty. These parental efforts appear to help provide children with a repertoire of emotional, cognitive, and behavioral strategies for coping with frustration, upset, or distress (Contreras & Kern, 2000; Kliewer et al., 1994).

Positive parental evaluation, acceptance, and response to children's negative emotions appear to offer emotional support, which is in turn related to children's social functioning. Sympathetic and constructive responses validate the child's emotional experience, reduce any associated stress, and promote coping. Parents who deny young children's negative emotions and adopt critical, harsh, or punitive reactions appear to make young children's self-regulation more difficult, resulting in increased expression of intense, negative emotions with peers and deficits in social competence (Fabes, Leonard, Kupanoff, & Martin, 2001). Parents who are more comforting appear to have young children who are seen as more emotionally competent in preschool (Denham, 1997).

In addition, parents who view emotions and their expression as opportunities to value their child's feelings and assist or coach their children in the management of those emotions not only typically provide warm support but also provide specific strategies and active behavioral ways to help their children cope with upsetting emotions or situations (Gottman, Katz, & Hooven, 1996, 1997). Direct instruction about emotion appraisal (e.g., "I think you are feeling sad," or "Maybe you are feeling angry because you can't go outside and play because it is

raining”) and suggesting specific actions to help cope with emotion (e.g., “If you can’t play with your favorite toy, find your second favorite toy and play with it”) appear to help children with their own self-appraisals, as well as help them enlist coping behaviors (Contreras & Kern, 2000; Katz, 2000; Kliwer et al, 1994; Lazarus & Folkman, 1984).

It appears, then, that parent-child conversations about emotion and emotional expression, in addition to suggestions for behavior, enhance early childhood coping abilities by educating children about the various meanings and interpretations of emotion and emotion-eliciting events. Everyday discourse about emotion is seen as a primary avenue by which young children gain understanding about underlying contributory psychological processes. Young children have difficulty understanding these processes on their own, and parental scaffolding and interpretation appear to promote increased emotional understanding and better behavioral functioning (Laible & Song, 2006; Saarni et al., 1998).

Parent-child discourse about emotions also provides a context for two additional processes. It provides opportunities for parents to share their strategies for emotion management with their children (Contreras & Kerns, 2000; Thompson & Myers, 2007), and it provides the experience of open communication, including the exchange of feelings and thoughts about emotionally laden events, which is associated with emotion regulation abilities in both young children and school-age children (Gentzler et al., 2005; Laible & Song, 2006).

It appears, then, that throughout early childhood, available, sensitive, and responsive caregiving coupled with emotion coaching and open communication about emotion support a young child’s capacity to cope with stress and negative emotions. Research on these dimensions of parenting for children exposed to domestic and community violence support this suggestion.

The Relation of Maternal Responsiveness and Coaching to the Effects of Violence Exposure on Young Children’s Functioning

Studies investigating dyadic interactions between mothers and their young children suggest that mothers’ positive interaction behaviors help their young children cope with violence exposure. Linares and Morin (2006) found that positive maternal interaction (defined as non-controlling, involved, and warm) with preschool children, in combination with maternal good health and low maternal distress, mediated the relationship between community violence exposure and children’s externalizing and internalizing behaviors. In an investigation of mothers and their preschool children exposed to domestic violence, Levendosky and colleagues (2003) found that authoritative (positive) parenting was associated with children’s positive behavior during play. Gorman (1999) found that maternal empathetic response predicted positive child affect and behavioral regulation during play with a small group of preschoolers exposed to family violence. Studies examining positive parenting with young children exposed to domestic and community violence found that maternal responsiveness, nurturance, consistency, child-centeredness, and lack of harsh disciplinary practices were related to fewer behavioral problems, increased social cooperation and self-control, and greater adjustment in young children (Huang et al., 2010; Levendosky et al., 2003; Oravec et al., 2008).

Research investigating maternal (and paternal) responsiveness to young children’s negative emotions has found that children experienced greater regulation of emotion and fewer

behavior problems when parents were more aware of their children's emotions and provided emotion coaching. In a study of preschool children exposed to domestic violence, Johnson and Lieberman (2007) found that a mother's attunement to her child's sad and angry emotions reduced her child's externalizing behaviors. Gottman and colleagues (1996) found that in families experiencing conflict, parental awareness and assistance with the negative emotions of five-year-old children predicted the children's ability to manage negative emotions, and resulted in a decrease in physiological reactivity. In a sample of aggressive and non-aggressive kindergarten and first-grade children, Stover (2003) found that fathers who participated more in assisting their children with anger had children who were more able to regulate their feelings.

Similarly, school-age children and adolescents whose parents were more accepting of their negative emotions and provided help on how to manage them were better able to regulate negative feelings. In a comparison study of maltreating and non-maltreating mothers, a mother's ability to accept and assist her child with sadness, anger, and fear mediated the relationship between exposure to maltreatment and the child's adaptive regulation skills (Shipman et al., 2007). Cunningham (2007) found that greater maternal acceptance of a child's negative emotions helped children's emotional understanding, decreased internalizing behaviors, and increased task persistence in children and adolescents living in violent inner-city neighborhoods. In a sample of African-American adolescents exposed to community violence, maternal coaching contributed to children's coping responses to community violence (Kliewer et al., 2006). Ramsden and Hubbard (2002) found that maternal acceptance of negative emotions promoted fourth-grade children's emotion regulation abilities, which in turn helped them to manage their aggression.

In this study, maternal responsiveness was measured by assessing a mother's awareness, acceptance, and assistance with her young child's sad and angry feelings. Sadness and anger are emotions children are likely to experience in relation to violence exposure and are associated with child behavioral functioning.

Mediation of Child Exposure to Domestic and Community Violence by Maternal Psychological and Parenting Characteristics

Despite the extensive literature establishing associations between violence exposure and young children's adaptive outcomes, less attention has been directed to mechanisms that might account for these effects. A small set of studies has examined the mediating role of maternal psychological functioning and parenting capacities on young children's violence exposure.

Maternal psychological distress and functioning have been shown to be robust mediators of emotional, behavioral, and cognitive outcomes in young children exposed to domestic violence (Farver et al., 2005; Huang et al., 2010; Levendosky et al., 2006) and community violence (Aisenberg, 2001; Farver et al., 2005; Linares et al., 2001). In addition, in a study of preschool children exposed to domestic violence, Lieberman and colleagues (2005) found that both maternal posttraumatic stress and the quality of the mother-child relationship mediated the relationship between the mother's life stress and children's behavior problems.

However, there has been very limited research on the potential mediating role of maternal parenting characteristics. Huang and colleagues (2010) found that positive maternal parenting

did not mediate the relation between domestic violence exposure and child behavior problems but maternal disciplinary practices (e.g., spanking) did partially mediate the relation. Although mediation studies of community violence exposure and child behavior problems have been investigated less frequently, Linares and Morin (2006) suggested that positive maternal interaction with young children may be a mediator of that relation.

In order to establish that parenting is a mediator of child response to violence exposure, it must be directly related to violence exposure and child outcomes. Domestic violence exposure has been shown to be significantly and negatively associated with a wide range of parenting capacities, including parenting effectiveness, warmth, sensitivity, support, and responsiveness (Graham-Bermann & Levendosky, 1998; Levendosky & Graham-Bermann, 1998, 2000, 2001; Oracevz et al., 2008). The relation between community violence exposure and parenting capacities has been much less studied. Although Kliwer and colleagues (2004) found that school-aged children's exposure to community violence was strongly negatively associated with their felt acceptance by their mothers, Oracevz and colleagues (2008) did not find an association between a mothers' community violence exposure and her negative parenting capacities. As noted above, a range of parenting capacities including maternal responsiveness, are related to at-risk children's functioning. Based on these findings, it can be suggested that maternal responsiveness may mediate the relationship between domestic and community violence exposure and child adaptation.

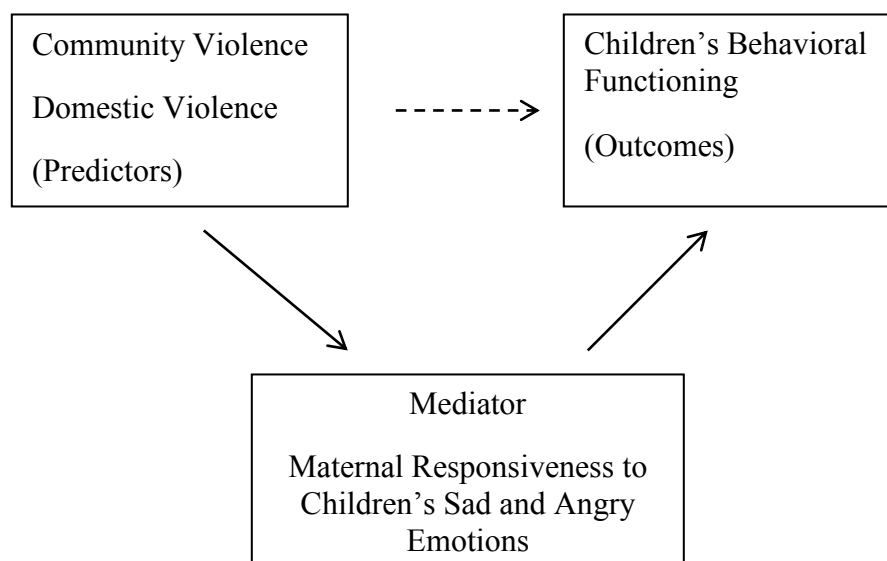


Figure 1. Mediation Model

Moderation of the Effects of Domestic and Community Violence Exposure by Maternal Parenting Characteristics

There have been a few studies that have examined the moderating role of maternal parenting and young children's exposure to violence. Katz and Windecker-Nelson (2006) found that a mother's emotion coaching of sadness, anger, and fear moderated the effects of domestic violence exposure on preschool children's functioning. Children with mothers who provided little emotion coaching experienced greater aggression, withdrawal, depression and anxiety, whereas children with mothers who provided substantial coaching did not experience any negative adaptations. For young children exposed to community violence, the limited research has produced mixed results. Bailey and colleagues (2006) found that six-year-old children's perceptions of their mothers' acceptance moderated the relationship between community violence exposure and internalizing and externalizing behaviors. Of note, children with the lowest levels of self-reported maternal acceptance were at the greatest risk for the negative effects of community violence, whereas children who rated their mothers as having moderate or high levels of acceptance did not experience such risk. Similarly, in a study of school-age children exposed to community violence, Kliever et al. (1998) found that children's perceptions of social support from their mothers buffered the development of internalizing behavior problems associated with community violence exposure. However, Oracevz and colleagues (2008) found that despite mothers' nurturance, consistency, and responsiveness, their young children were not protected from the effects of either domestic or community violence exposure.

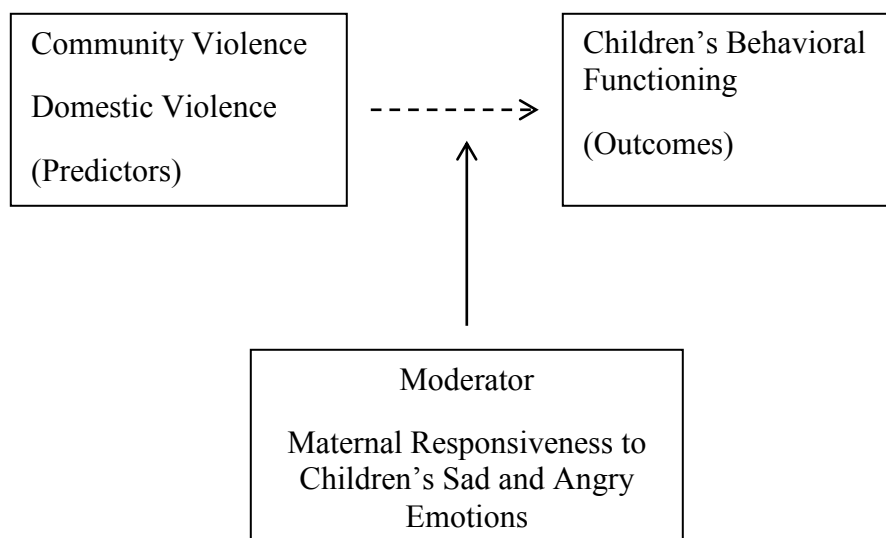


Figure 2. Moderation Model

Research Questions and Hypotheses

Young children experience a range of negative developmental outcomes associated with their exposure to domestic and community violence. Research findings indicate that maternal caregiving characteristics are related to a child's adaptation to violence exposure, and may also protect children from the effects of violence exposure or serve as a pathway between exposure and adaptation. Ecological-transactional models and constructs of early childhood emotion regulation speak to the importance of evaluating both the direct impact of violence on young children and the maternal role in that experience.

Research question 1. Are young children with greater exposure to domestic and community violence more likely to demonstrate behavioral problems than young children with less exposure? Studies of young children's exposure to domestic and community violence show that young children experience a range of behavior problems, including anxiety, withdrawal, aggression, and general behavioral dysregulation, but the relative degrees of exposure and its effects have not been assessed.

Hypothesis 1. I expect that in this sample of high-risk children, children exposed to greater levels of community violence will show higher levels of behavior problems.

Hypothesis 2. I expect that in this sample of high-risk children, children exposed to greater levels of domestic violence will show higher levels of behavior problems.

Research question 2. Are young children with greater exposure to community as well as domestic violence more likely to demonstrate higher levels of behavioral problems than those who are exposed to only one form of violence (i.e., is there an interaction effect)? Although increased risk negatively influences child adaptation, little research has explored the accumulated effects of domestic and community violence exposure on young children's functioning.

Hypothesis 3. I expect that in this sample of high-risk children, domestic and community violence exposure will interact so that greater levels of both domestic and community violence exposure will predict higher levels of behavior problems.

Research question 3. Will more responsive mothers protect or buffer their children from the effects of violence? There has been limited investigation of the protective effects of maternal responsiveness to young children's negative emotions on children's adaptation to violence exposure. However, studies of at-risk school-age and young children suggest that a mother's ability to be aware of, accept, and assist her child with negative emotions may be associated with more adaptive behavioral functioning and can moderate the influence of exposure to violence on child behavior.

Hypothesis 4. I expect that maternal responsiveness to children's sadness and anger will moderate the effects of community violence exposure on young children's behavioral functioning.

Hypothesis 5. I expect that maternal responsiveness to children's sadness and anger will moderate the effects of domestic violence exposure on young children's behavioral functioning.

Research question 4. Are young children likely to experience the impact of violence indirectly, through the difficulties their mothers may have in responding to their children's sadness and anger? A mother's exposure to domestic and community violence is likely to spill over into the mother-child relationship. Mothers experiencing the stresses of both domestic and community violence may not be able to be as responsive to their young children's negative emotions, leaving those children without the necessary help to regulate and cope with those feelings. This indirect exposure to violence may result in a young child exhibiting more behavioral problems.

Hypothesis 6. Given that research on the role of parenting as a mediator in young children's response to community violence exposure is extremely limited, the investigation of maternal responsiveness as a mediator for the influence of community violence on young children's adaptation is exploratory. I expect that maternal responsiveness to child sadness and anger will partially mediate the relation between young children's exposure to community violence and their behavioral functioning.

Hypothesis 7. Given that research on the role of parenting as a mediator in young children's response to domestic violence exposure is extremely limited, the investigation of maternal responsiveness as a mediator for the influence of domestic violence on young children's adaptation is exploratory. I expect that maternal responsiveness to child sadness and anger will partially mediate the relation between young children's exposure to domestic violence and their behavioral functioning.

Method

Participants and Sample Characteristics

Participants in this study include 143 mothers and their young children (ages 2-6 years; $M = 4.21$ years, $SD = 0.86$).¹ This sample was collected from archival data at the Child Trauma Research Project (CTRP), University of California, San Francisco, and is drawn from clinical and community populations. The children in the clinical subsample ($n = 111$, 77.62%) had been exposed to domestic violence within the year prior to joining the study and were participating in the CTRP child-parent psychotherapy intervention and research study at the University of California, San Francisco.² The children in the community subsample ($n = 32$, 22.38%) had not been exposed to domestic violence. The community subsample did not participate in the intervention, but were part of the research study as a comparison group (see description of recruitment procedures below).

In the full sample, all mothers were single heads of households. Mothers and children in both groups came from diverse socioeconomic and ethnic backgrounds. The average age of the children was 4.21 years ($SD = 0.86$); 43.36% were two- and three-year-olds, 30.97% were four-year-olds, and 25.87% were five- and six-year-olds. There were 75 boys (52.45%) and 68 girls (47.55%). The average age of the mothers was 31.72 years ($SD = 6.90$) and mothers had completed an average of 12.71 years ($SD = 3.23$) of education. Approximately one-fifth (19.58%) of the mothers were African-American, 10.49% were Asian, 25.87% were European-American, 33.57% were Latina, 6.99% were of mixed ethnicity, 0.70% were Native-American, and 2.80% were of other ethnicities. The average monthly income for the sample was \$1,826.86 ($SD = \$1,507.50$). Descriptive statistics for the demographic variables examined in this study are provided in Table 1.

Recruitment of domestic violence exposed subsample. The domestic violence exposed clinical participants were referred to the intervention study based on clinical concerns about the child's behavior or the mother's parenting behavior after the child witnessed or overheard domestic violence. Referral sources for this sample included family court, domestic

¹ Two cases were deleted from the total sample due to large amounts of missing data on the independent and dependent variables.

² The Child Trauma Research Project (CTRP), University of California, San Francisco. Principal Investigator: Alicia F. Lieberman, Ph.D. The CTRP is a multi-informant, multi-measure longitudinal research and intervention project working with preschool aged children and their mothers who have experienced and witnessed domestic violence. The principal means of intervention is Child-Parent Psychotherapy (CPP), a one-year, home-based dyadic psychotherapy intervention based on Attachment Theory, Social Learning Theory, and Coercion Theory. CPP focuses on the nature of the dyadic relationship, goal-corrected partnership (as a developmentally salient relationship dimension), the quality of the parent-child relationship, child outcome, and the nature and development of child behavior and affect. The research program has multiple foci, including an examination of PTSD in mothers and children, intervention outcome studies, mediation models regarding maternal psychological functioning, trauma event, and child socio-emotional functioning and outcomes, relationships between maternal and child trauma and readiness to learn, children's representations of self and caregivers, the nature of the parent-child relationship in dyads experiencing and witnessing domestic violence, and the production and dissemination of a CPP training manual for mothers and young children experiencing domestic violence.

Table 1

Demographic Characteristics for Domestic Violence Exposed, Non-Exposed, and Total Samples and t-Test and Chi-Square Analyses for Domestic Violence Exposed and Non-Exposed Sample

Characteristic	Total Sample (<i>n</i> = 143)	DV Exposed (<i>n</i> = 111)	Non-Exposed (<i>n</i> = 32)	<i>t</i>	<i>p</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Monthly household income (dollars)	1826.86 (1507.50)	1683.93 (1190.23)	2322.66 (2248.59)	-1.55	.131
Maternal age (years)	31.72 (6.90)	31.05 (6.67)	34.06 (7.27)	-2.21	.029
Maternal education (years)	12.71 (3.23)	12.44 (3.36)	13.66 (2.54)	-1.89	.060
	<i>n</i> (<i>P</i>)	<i>n</i> (<i>P</i>)	<i>n</i> (<i>P</i>)	<i>X</i> ²	<i>p</i>
Child gender					
Male	75 (52.45)	57 (51.35)	18 (56.25)	0.24	.625
Female	68 (47.55)	54 (48.65)	14 (43.75)		
Child age					
2-3 years old	62 (43.36)	53 (47.75)	9 (28.13)	4.54	.103
4 years old	44 (30.77)	30 (27.03)	14 (43.75)		
5-6 years old	37 (25.87)	28 (25.23)	9 (28.13)		
Maternal ethnicity					
African-American	28 (19.58)	16 (14.41)	12 (37.50)	13.06	.042
Asian	15 (10.49)	12 (10.81)	3 (9.38)		
European-American	37 (25.87)	27 (24.32)	10 (31.25)		
Latina	48 (33.57)	44 (39.64)	4 (12.50)		
Mixed	10 (6.99)	8 (7.21)	2 (6.25)		
Native American	1 (0.70)	1 (0.90)	0 (0.00)		
Other	4 (2.80)	3 (2.70)	1 (3.13)		
Maternal ethnicity					
Latina	48 (33.57)	44 (39.64)	4 (12.50)	8.21	.004
Non-Latina	95 (66.43)	67 (60.36)	28 (87.50)		

Note. DV = domestic violence.

violence service providers, medical providers, preschools, child protective services, other agencies, former clients, and self-referral.

Participants in the intervention portion of the study were initially screened on the telephone by a Master's degree-level clinician to determine whether they met inclusion and exclusion criteria. Criteria for participation in the intervention study were (a) exposure by mothers and children to domestic violence based on a screening interview and confirmation of exposure on the Conflicts Tactic Scale, Revised (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) and (b) the perpetrator not living in the home. Mothers were excluded from the study if there was current substance abuse or homelessness, or a diagnosis of developmental disability or psychosis. Children were excluded from the study if they had been diagnosed with a developmental disability or autism spectrum disorder, or if there was documentation of their having been abused.

In this sample, domestic violence was defined as exposure to physical and/or verbal abuse in the past year. Domestic violence exposure included the mother (a) being grabbed, shoved, slapped or hit; (b) being beaten up; or (c) being attacked or threatened with a gun or knife.

Recruitment of non-domestic-violence-exposed subsample. The non-domestic-violence-exposed subsample was a community sample (San Francisco and surrounding counties) of mothers and children from single parent households. Mothers had not experienced domestic violence within the past year, and children had not witnessed or heard domestic violence within the same period. Participants in this subsample were recruited from various local sources, including preschools, community centers, Head Start programs, and pediatric clinics. They were asked for permission to be considered for participation in a comparison study on child outcomes of domestic violence exposed and non-exposed mothers and children. This sample was matched to a small group drawn from the sample of domestic violence exposed dyads (for details, see Ybarra, Wilkens, & Lieberman, 2007). The community sample was drawn to match the selected clinical sample on child age (within six months), child gender, child ethnicity (matched with one parent's ethnicity if no full match was possible), mother's age (within five years), mother's educational attainment, and annual family income. Researchers were blind to other target variables and random selection was used to choose among more than one match. Exclusionary criteria for the mother included experience of domestic violence within the prior year, chronic or severe mental illness, active suicidal or homicidal ideation, substance abuse, life-threatening medical illness, inability to speak English, or a confirmed report of child physical or sexual abuse. Exclusionary criteria for the child were the diagnosis of a developmental disability or an autism spectrum disorder.

Combining the two subsamples. The subsamples were compared on the community violence exposure measure and demographic characteristics. As expected, the clinical sample reported more exposure to community violence, $t(141) = 3.11, p \leq .01$. The effect size was moderate ($d = 0.65$) and there was significant overlap in the two distributions. Domestic violence exposure was controlled for in all subsequent analyses. The samples also differed on mothers' age, $t(141) = -2.21, p \leq .05$, and mothers' ethnicity, $\chi^2(6) = 13.06, p \leq .05$. Mothers in the clinical sample were younger, and more likely to be Latina (See Table 1). No differences were found between the two groups in terms of monthly household income, maternal education,

child gender, and child age. The subsamples were combined for the analyses conducted in this investigation.

Procedures

Data collection. For all mothers and children in the clinical subsample, data were collected at baseline, prior to the beginning of the intervention. For the community subsample, data were collected at one time point only. Data collection consisted of four assessment sessions for the mother and her child and measures included questionnaires, interviews, and standardized assessments. Mothers and children in the community subsample participated in the same assessment protocol as the intervention group.

During the first assessment session, Master's degree- or Ph.D. degree-level assessors described the study and the intervention protocol to those mothers participating in the intervention and obtained maternal signed informed consent. The other three sessions were devoted to the assessment of maternal and child functioning. Assessments were conducted in English or Spanish, according to the preferences of the mother. When Spanish versions of the instruments were not available from the publisher, Spanish speakers translated and back-translated the measures until English and Spanish versions were deemed equivalent in meaning and literacy level. At the end of the assessment period, mothers received feedback about their children's functioning and the mother-child relationship and were asked to reaffirm their willingness to be part of a treatment intervention study (as relevant). Mothers received \$30 for participating in the intake session. The original study was approved by the Institutional Review Board of the University of California, San Francisco.

Measures

Children's exposure to community violence. In order to assess each child's exposure to community violence, mothers were asked to complete The Survey of Children's Exposure to Community Violence, Parent Report Version (Richters & Martinez, 1993). Questionnaires were completed by the mother, or if mothers lacked the reading skill to complete the questionnaire independently, the items were read aloud to the mother by an interviewer, who then recorded the mother's responses. This instrument is a 51-item screening questionnaire asking mothers to indicate if their child had (a) directly experienced or witnessed a violent event, (b) known someone who had experienced a violent event or (c) known about or had heard about a violent event during the child's lifetime. Events include such incidents as being chased by gangs, knowing about the sale or distribution of illegal drugs, witnessing home invasion or police arrest, or being slapped, punched or hit by either a member or a non-member of the child's family. For the majority of events, the mother was asked three questions to reflect the child's degree of exposure to that event. The three related items reflect three different levels of exposure, from directly experiencing an incident, to witnessing or simply knowing about it, as in the following example: "My child has been beaten up or mugged," "My child has seen someone else getting beaten up or mugged," or "My child knows someone who has been beaten up or mugged." All items are dichotomous, with mothers endorsing each item as *true* or *false*. (See Appendix A for items). The final item in the scale—an open-ended question pertaining to other events not described in which the child was extremely frightened or afraid of being hurt badly or dying—was not used in this study.

Two violence exposure scales were created from this measure. The first scale was the sum of endorsed items (possible range 0-50), designated as Total Violence Exposure. The second scale was a weighted summary score of endorsed items (possible range 0-37), designated as Weighted Violence Exposure. In order to create the weighted scale, the three items pertaining to a single event were collapsed into one item, with four different Guttman-type scoring levels signifying type of experience: *none* = 0, *knowing or knowing about* = 1, *witnessing* = 2, and *direct experience* = 3. For example, the three original scale items depicting being chased by a gang or older kids become item levels for the weighted scale item “Chased by a gang or older kids.” The direct experience of violent events is given more weight by this scoring procedure than witnessing or knowing about such events. See Appendix B for a description of the 13 items of this scale.

The Total Violence Exposure scale is based on a wide-range of types of violence events and reflects the premise that the total amount or cumulative amount of violence exposure, and not the type of exposure, is directly related to child outcomes (Rosenthal & Wilson, 2001). Internal consistency for Total Violence Exposure scores was high (50 items, $\alpha = .90$). The Weighted Violence Exposure scale reflects the premise that proximal violence exposure (either direct and/or witnessing) is more strongly associated with child outcomes (Pynoos et al., 1995). Internal consistency for Weighted Violence Exposure scores was moderate (13 items, $\alpha = .81$).

Domestic violence exposure. Domestic violence exposure is indicated by membership in either the clinical or community sample. See Table 1 for demographic characteristics for each subsample.

Child behavioral functioning. Child behavioral functioning was assessed through maternal report on the Child Behavior Checklist for two- and three-year-olds (CBCL 2/3, Achenbach, 1992) or the Child Behavior Checklist for children ages 4-18 (CBCL 4/18, Achenbach, 1991). Both versions of the CBCL are standardized questionnaires, with 100 and 120 items respectively. Each item is rated on a 3-point scale (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very or often true*).

Three subscales are produced by the CBCL measures and were used in this study: Internalizing Behavior Problems (e.g., depression, anxiety, withdrawal), Externalizing Behavior Problems (e.g., non-compliance, aggression), and Total Behavior Problems. The total behavior problems score includes problems in addition to those on the Internalizing and Externalizing scales: for example, sleep disruption in younger children and social, thought, and attention problems in older children. Items included in each subscale were summed, resulting in a total raw score, which was then transformed into a *T*-score ($M = 50$, $SD = 10$) so that the instruments could be combined across age groups. Clinical ranges for these scales are: Internalizing ($T \geq 67$), Externalizing ($T \geq 67$), and Total Behavior ($T \geq 70$).

Both forms of the CBCL have high to moderate test-retest reliability, discriminant and convergent validity, stability, and are valid for use in ethnically diverse samples (Achenbach, 1991, 1992). In this study, Cronbach alphas were high for scores on CBCL 2/3 (Internalizing = .85, Externalizing = .87, and Total = .94) and CBCL 4/18 (Internalizing = .87, Externalizing = .87, and Total = .93) subscales.

Maternal responsiveness to child negative emotions. A mother's responsiveness to her child's negative emotions (sad and angry emotions) was assessed by the Meta-Emotion Interview (Gottman et al., 1996; Katz & Gottman, 1986). The Meta-Emotion Interview is a 20-minute semi-structured parent interview that asks parents about their experience of their own emotions and their attitudes and behavior toward their children's negative and positive emotions. The Meta-Emotion interview begins with the mother being told, "I'm going to be asking you questions about times when (your child) experienced feeling sad or angry. Let's start by thinking of a time when (your child) was feeling *sad* and tell me about it." There are seven additional queries related to sadness. The questions are then repeated for the emotion of anger as well as positive emotions. The questions are designed to gauge a mother's awareness of her child's emotions, as well as to assess her direct and indirect ways of responding to the expression of those emotions, including any offers of explicit advice and suggestions. Because the focus of this study was mothers' responsiveness to their child's negative emotions, only maternal responses to sad and angry emotions were assessed. Interviews were audiotaped, transcribed, and coded for these emotions, according to the Meta-Emotion Coding System (Katz & Gottman, 1986). See Appendix C for the interview questions and prompts used in this study.

Each item was scored on a 3-point scale (0 = *disagree or strongly disagree*, 1 = *neutral*, and 2 = *agree or somewhat agree*). Some of the items were reversed scored. Inter-rater reliability was computed for the original Meta-Emotion Interview data, consisting of 72 items per client. Two raters rated 24 of the 105 cases (22.86%). Cohen's Kappa was .60 with percent agreement of 75.20% of the total items.

Based on moderate to high inter-item correlations ($.40 \leq r \leq .71$) between multiple items on both the sadness and anger scales and results from a unidimensional Rasch analysis (Wright & Masters, 1982) denoting similar item difficulties on multiple items, the same items for sadness and anger (e.g., Parent notices that child has this emotion) were combined to create one 36-item negative emotion scale. Due to identical responses from all participants on five items, this scale was reduced to 31 items ($\alpha = .78$). Summary scores (possible range 0-124) were computed to create a composite called Maternal Responsiveness To Child Negative Emotions.

Covariates. Literature on children's exposure to violence suggests that child and maternal demographic and socioeconomic factors are related to child behavioral functioning, including child age (Laor et al., 1996), child gender (Gordis, Margolin, & John, 1997), maternal ethnicity (McLoyd, Harper, & Copeland, 2001), maternal age (Osofsky & Thompson, 2000), maternal education (Scaramella, Sohr-Preston, Callahan, & Mirabile, 2008), and income indices (Scaramella et al., 2008). Each of these variables was considered as a potential covariate in this study. To determine which covariates should be included in the regression models used in this study, bivariate associations were examined between each covariate and the three child outcome measures. Child age and child gender were not significantly associated with any of the three outcome measures.

Mothers in this sample came from highly diverse ethnic backgrounds. Due to small sample sizes for some groups, the original seven maternal ethnicity groups (see Table 1) were initially collapsed into five groups (African-American, Latina, European-American, Asian, and

Other). One-way ANOVA analyses of these five groups indicated that only the Latina group differed significantly from the other ethnicity groups (scoring higher) on the Internalizing and Total behavioral scales: Internalizing, $F(4,139) = 5.47, p \leq .001$; Total, $F(4, 139) = 3.24, p \leq .05$. There were no significant differences among the five groups on the Externalizing behavioral scale, although the Latina group scored higher, $F(4, 139) = 1.87, p = .119$. Therefore, maternal ethnicity was collapsed into Latina ($n = 48$) and Non-Latina ($n = 96$) groups. Independent t -test results indicated that Latinas scored significantly higher on the Internalizing ($M = 63.13, SD = 9.22; t(142) = 4.35, p \leq .001$), Externalizing ($M = 60.42, SD = 9.18; t(142) = 2.42, p \leq .05$) and Total ($M = 63.40, SD = 10.16; t(142) = 3.28, p = .001$) behavioral scales than the Non-Latinas ($M_{Int} = 55.18, SD = 10.83; M_{Ext} = 56.40, SD = 9.52; M_{Total} = 57.67, SD = 9.73$). Thus, maternal ethnicity was collapsed into Latina and non-Latina, and Latina/Non-Latina was the maternal ethnicity variable used in this study.

Monthly household income, maternal age, and maternal education were significantly correlated with particular child outcomes. As a second check on covariates, each child outcome measure was regressed on monthly household income, maternal age, maternal education, and maternal ethnicity. Regression results indicated that maternal ethnicity significantly predicted internalizing, externalizing, and total behavioral functioning ($p \leq .05$), and maternal age significantly predicted externalizing behavior ($p \leq .05$). Therefore, maternal ethnicity is a covariate in all three child behavioral models and maternal age is an additional covariate in the externalizing behavior models.

Results

Preliminary Analyses

Missing data. Missing data occurred in five model variables: three covariates (monthly household income, maternal age, and maternal education), the exposure to violence questionnaire, and the Meta-Emotion Interview. Missing data were replaced by (a) substituting medians, (b) imputing either weighted item scores or the mode of item scores, or (c) imputing continuous variables using linear interpolation. Linear interpolation determines the best line for the data and then interpolates values from this line for missing cases (De Vaus, 2002). Most data analyses were done using SPSS for Windows (SPSS 11.0), but linear interpolation was done using SPSS for Windows (SPSS 16.0).

Covariates. Due to slightly skewed distributions, median values were substituted for missing data in the three covariates (monthly household income, maternal age, and maternal education). Thirty-two values were missing for monthly household income, one value was missing for maternal age, and 12 values were missing for maternal education.

Violence exposure (*The Survey of Children's Exposure to Community Violence*). Fourteen item scores were missing on the original community violence exposure survey. Missing item scores were replaced either by the mode for that item or by a weighted score. The weighted score was determined by a Guttman-type analysis, which indicated that if a child had either experienced or witnessed a violent event, that child had also most likely known someone who had experienced the same event. For all but two of the missing items, the Guttman-type item was the same as the mode.

Meta-Emotion Interview. Not all mothers were administered the Meta-Emotion Interview. This occurred because the instrument was introduced at a later date in the original UCSF study. As such, these missing data are understood to be Missing at Random and meet the criteria for imputation. Thirty-two cases were missing from the clinical subsample and six cases were missing from the community subsample. The same imputation procedure was done for each subsample separately and missing case values were imputed for each subsample by linear interpolation.

Collinearity. Collinearity was assessed separately for the independent variables including the covariates and the interaction and constituent variables in the moderation analyses. Collinearity between independent variables and covariates was assessed by examining the bivariate correlations between independent variables and covariates and by examining the tolerance values of these variables in all regression models. Pearson correlation coefficients for the independent variables and covariates were low ($.17 \leq r \leq .38$). For the moderation analyses, all constituent and interaction variables were centered by mean-deviation to minimize multicollinearity and tolerance values were assessed for each moderation analysis. Tolerance values for all regression analyses in this study were satisfactory, ranging from .76 to .94 (Belsley, Kuh, & Welsch, 1980).

Descriptive statistics for continuous study variables. Descriptive statistics were computed for community violence exposure, maternal responsiveness, and child behavioral functioning (Table 2) and the two subsamples were compared on these variables by independent sample *t*-tests (Table 3). On average, in the total sample, children were exposed to fewer than 10 community violence events. Children who witnessed domestic violence were exposed, on average, to approximately 10 community violence events, whereas children who had not witnessed domestic violence were exposed, on average, to approximately five to six community violence events. These subsample differences in community violence exposure were significant for both the Total Violence Exposure score, $t(141) = 3.11, p = .020, d = 0.65$, and the Weighted Violence Exposure score, $t(141) = 3.19, p = .002, d = 0.65$. Mothers in both subsamples were similarly responsive to their children's negative emotions, scoring an average of 69.34 (on a scale with a midpoint of 62), indicating that mothers in both subsamples exhibited more optimal parenting practices.

Table 2

Descriptive Statistics for Continuous Study Variables

Variable	Range	<i>M</i>	<i>SD</i>
Total Violence Exposure	0 to 32	8.62	7.04
Weighted Violence Exposure	0 to 32	9.04	6.69
CBCL subscales			
Internalizing	33 to 84	57.87	10.99
Externalizing	30 to 85	57.66	9.56
Total	31 to 89	59.56	10.24
Maternal Responsiveness to Child Negative Emotions	31 to 107	69.34	11.60

Note. $N = 143$. CBCL = Child Behavior Checklist.

Children scored approximately seven to nine points above the standardized mean ($M = 50, SD = 10$) for all three behavioral scales. In the total sample, 23.78% scored in the clinical range on the Internalizing Behavior scale ($T \geq 67$), 19.58% scored in the clinical range on the Externalizing Behavior scale ($T \geq 67$), and 20.28% scored in the clinical range on the Total Behavior scale ($T \geq 70$). A comparison of behavioral problems of children who witnessed domestic violence and those who did not witness domestic violence (Table 3) indicated that although children in both subsamples on average scored above the standardized means, children exposed to domestic violence had significantly higher internalizing behavior problems, $t(141) = 4.25, p = .001, d = 0.88$, and total behavior problems, $t(141) = 2.35, p < .05, d = 0.51$, than children not exposed to domestic violence. Young children who had witnessed domestic violence and those who had not did not differ significantly on externalizing behavior problems, $t(141) = 1.01, p = .313, d = 0.21$.

Table 3

Independent t-Test Results of Independent and Dependent Variables for Domestic Violence Exposed and Non-Exposed Samples

Variable	Domestic Violence Exposed (<i>n</i> = 111)		Domestic Violence Non-Exposed (<i>n</i> = 32)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
CBCL Internalizing	59.85	10.61	51.00	9.51	4.25	.000
CBCL Externalizing	58.10	9.85	56.16	8.43	1.01	.313
CBCL Total	60.62	10.62	55.88	7.91	2.35	.020
Total Violence	9.58	7.01	5.31	6.20	3.11	.002
Weighted Violence	9.96	6.61	5.82	6.02	3.19	.002
Maternal Responsiveness	69.62	11.86	68.38	10.78	.534	.594

Note. CBCL = Child Behavior Checklist.

Bivariate associations among independent and dependent variables. Pearson correlations between continuous independent and dependent study variables (Table 4) indicated that Total Violence Exposure and Weighted Violence Exposure were significantly and positively associated with all three child behavioral scales ($.22 \leq r \leq .38$). Total Violence Exposure and Weighted Violence Exposure were strongly correlated ($r = .96, p < .01$), indicating that despite their different metrics, they seem to be measuring the same construct. Because the Weighted Violence Exposure scale was correlated more highly with the outcome variables, it was chosen as the primary community violence measure in this study. Results for analyses using the Total Violence Exposure scale are presented in Appendix E.

Pearson correlations among the *T*-scores for the Internalizing, Externalizing, and Total Behavior scales indicate moderate to high correlations (see Table 4). However, preliminary examination of the correlations among the clinical and community subsamples and the Internalizing, Externalizing, and Total Behavior scales indicated different patterns of association for each subsample. Therefore, all three behavioral scales were used.

Table 4

Pearson Correlations among Independent and Dependent Variables

Variable	1	2	3	4	5
1 CBCL Internalizing					
2 CBCL Externalizing	.53**				
3 CBCL Total	.84**	.84**			
4 Total Violence Exposure	.31**	.22**	.35**		
5 Weighted Violence Exposure	.34**	.24**	.38**	.96**	
6 Maternal Responsiveness	-.09	-.06	-.08	-.01	-.04

Note. CBCL = Child Behavior Checklist.

** $p < .01$

Maternal Responsiveness to Child Negative Emotions was not significantly associated with any child behavioral outcome (Table 4). In addition, children's exposure to community violence—measured by either Total Violence Exposure or Weighted Violence Exposure—or domestic violence was not associated with maternal responsiveness (Tables 3 and 4).

Major Analyses

In this section, the findings for assessing linear regression assumptions will first be described. Thereafter, the results pertaining to the direct effects of violence exposure tests will be presented. Following this, the tests ascertaining the moderating role of domestic violence exposure and the moderating role of maternal responsiveness will be summarized. In the last part, the tests determining the mediating role of maternal responsiveness will be described.

Because there were two measures of community violence exposure (i.e., Total Violence Exposure and Weighted Violence Exposure) and three dependent variables (i.e., CBCL Internalizing, Externalizing, and Total Behavior Problems), six sets of linear regression procedures were conducted (i.e., two procedures for each dependent variable). Covariates determined to be significant for each of the three child outcomes were included. Maternal ethnicity was included in all internalizing, externalizing, and total behavior analyses; maternal age was also included for the externalizing behavior analyses. Domestic violence exposure was included in each model. Results for the Total Violence Exposure measure are in Appendix E.

Assumptions of linear regression. The assumptions of linear regression were evaluated on the total violence exposure and weighted violence exposure models for all three dependent

variables (i.e., CBCL Internalizing, Externalizing, and Total Behavior Problems). The assumption of normality was assessed through a histogram and normal probability plots. All histograms and plots indicated that the assumption of normality was met. The assumptions of linearity and homoscedasticity were assessed through a scatterplot of the standardized residuals and the predicted values. All scatterplots indicated that the assumptions of linearity and homoscedasticity were met. The assumption of parallel regression was assessed by examining the interaction between the significant covariate (i.e., maternal ethnicity) and the domestic violence exposure variable for each child outcome. None of the interaction terms was statistically significant indicating that the assumption of parallel regression was met.

Direct Effects Hypotheses

Hypothesis 1. To examine if community violence exposure as indexed by Weighted Violence Exposure positively predicted young children's internalizing, externalizing, and total behavior problems, after accounting for maternal ethnicity, maternal age, and domestic violence exposure, a hierarchical regression was calculated. Maternal ethnicity (and maternal age for the equation including externalizing behavior problems) was entered in the first step, domestic violence exposure was entered in the second step, and Weighted Violence Exposure was entered in the third step. Results are presented in Table 5.

As can be seen in Table 5, the hierarchical regressions indicate that after controlling for maternal ethnicity, maternal age (externalizing), and domestic violence exposure, Weighted Violence Exposure significantly predicted internalizing, externalizing, and total behavior problems and accounted for between approximately 4% and 12% variance in the dependent variables. These findings thus support the first hypothesis.

Hypothesis 2. To examine if domestic violence exposure positively predicted young children's internalizing, externalizing, and total behavior problems, after accounting for maternal ethnicity, maternal age, and community violence exposure, a hierarchical regression was calculated. Maternal ethnicity (and maternal age for the equation including externalizing behavior problems) was entered in the first step, Weighted Violence Exposure was entered in the second step, and domestic violence exposure was entered in the third step. Results are presented in Table 6.

Results indicated that domestic violence exposure significantly predicted internalizing behavior problems over and above maternal ethnicity and Weighted Violence Exposure and accounted for approximately 3% of the variance in internalizing behavior problems. Domestic violence exposure did not significantly predict either externalizing behavior problems or total behavior problems, once maternal ethnicity and Weighted Violence Exposure were accounted for. These findings indicate partial support for the second hypothesis.

Community violence (as indexed by Weighted Violence Exposure) and domestic violence significantly predicted young children's internalizing behavior problems and together explained over 13% of the variance in internalizing behavior problems. Community violence (as indexed by Weighted Violence Exposure) predicted externalizing and total behavior problems.

Table 5

Stepwise Hierarchical Regression Analysis Examining Domestic Violence and Weighted Violence Exposure as Predictors of Young Children's Internalizing, Externalizing, and Total Behavior (Weighted Violence Exposure added in Final Step)

Predictor	Final Model				Adjusted R^2 Added
	B	SE	β	p	
<i>Internalizing</i>					
Latina	6.67	1.74	.29	.000	.110**
DV exposure	5.13	2.05	.20	.013	.064**
Weighted violence exposure	.46	.12	.28	.000	.069**
<i>Externalizing</i>					
Latina	3.60	1.70	.18	.036	.057**
Maternal age	-.90	.59	-.13	.125	
DV exposure	-.89	1.96	-.04	.649	-.006
Weighted violence exposure	.32	.12	.22	.010	.038*
<i>Total</i>					
Latina	5.37	1.68	.25	.002	.065**
DV exposure	.98	1.97	.04	.621	.011
Weighted violence exposure	.56	.12	.36	.000	.120**

Note. Results are reported for the final models. DV = domestic violence. Internalizing Behavior Total Adjusted $R^2 = .243$; Externalizing Behavior Total Adjusted $R^2 = .089$; Total Behavior Total Adjusted $R^2 = .196$.

* $p < .05$. ** $p < .01$.

Table 6

Stepwise Hierarchical Regression Analysis Examining Domestic Violence and Weighted Violence Exposure as Predictors of Young Children's Internalizing, Externalizing, and Total Behavior (Domestic Violence Exposure added in Final Step)

Predictor	Final Model				Adjusted R^2 Added
	B	SE	β	p	
<i>Internalizing</i>					
Latina	6.67	1.74	.29	.000	.110**
Weighted violence exposure	.46	.12	.28	.000	.104**
DV exposure	5.13	2.05	.20	.013	.029*
<i>Externalizing</i>					
Latina	3.60	1.70	.18	.036	.057**
Maternal age	-.90	.59	-.13	.125	
Weighted violence exposure	.32	.12	.22	.010	.037*
DV exposure	-.89	1.96	-.04	.649	-.005
<i>Total</i>					
Latina	5.37	1.68	.25	.002	.065**
Weighted violence exposure	.56	.12	.36	.000	.135**
DV exposure	.98	1.97	.04	.621	-.004

Note. Results are reported for the final models. DV = domestic violence. Internalizing Behavior Total Adjusted $R^2 = .243$; Externalizing Behavior Total Adjusted $R^2 = .089$; Total Behavior Total Adjusted $R^2 = .196$.

* $p < .05$. ** $p < .01$.

Moderation Models

To test moderation effects, hierarchical regressions were conducted in which significant covariates were entered in Step 1, constituent variables were entered in step 2, and interaction terms were entered in Step 3. All covariates, constituent variables and interaction terms were mean-centered to minimize multicollinearity.

Hypothesis 3. To examine if domestic violence exposure moderated the direct effects of Weighted Violence Exposure on young children's internalizing, externalizing, and total behavior problems, a hierarchical regression was calculated. Maternal ethnicity (and maternal age for the equation including externalizing behavior problems) was entered in the first step, domestic

violence exposure and Weighted Violence Exposure were entered in the second step, and the interaction term for domestic violence exposure and Weighted Violence Exposure was entered in the third step. Results are present in Table 7.

The findings summarized in Table 7 indicated that domestic violence exposure did not moderate the effects of Weighted Violence Exposure on young children's internalizing, externalizing, and total behavior problems. Thus, the third hypothesis was not supported.

Table 7

Significance Values for the Interaction Terms in the Moderation Models

Model	CBCL Internalizing	CBCL Externalizing	CBCL Total
Weighted violence model			
Weighted violence x domestic violence	.558	.326	.658
Weighted violence x maternal responsiveness	.454	.320	.637
Domestic violence x maternal responsiveness	.982	.518	.499

Note. CBCL = Child Behavior Checklist.

Hypothesis 4. To examine if Maternal Responsiveness to Child Negative Emotions moderated the direct effects of Weighted Violence Exposure on young children's internalizing, externalizing, and total behavior problems, a hierarchical regression was calculated. Maternal ethnicity (and maternal age for the equation including externalizing behavior problems) was entered in the first step, maternal responsiveness and Weighted Violence Exposure were entered in the second step, and the interaction term for maternal responsiveness and Weighted Violence Exposure was entered in the third step. Results are presented in Table 7.

The findings in Table 7 reveal that maternal responsiveness did not moderate the effects of Weighted Violence Exposure on young children's internalizing, externalizing, or total behavior problems. Thus, the fourth hypothesis was not supported.

Hypothesis 5. To examine if Maternal Responsiveness to Child Negative Emotions moderated the direct effects of domestic violence exposure on young children's internalizing, externalizing, and total behavior problems, a hierarchical regression was calculated. Maternal ethnicity (and maternal age for the equation including externalizing behavior problems) was entered in the first step, maternal responsiveness and domestic violence exposure were entered in the second step, and the interaction term for maternal responsiveness and domestic violence exposure was entered in the third step. Results are presented in Table 7.

The findings in Table 7 reveal that maternal responsiveness did not moderate the effects of domestic violence exposure on young children's internalizing, externalizing, or total behavior problems. Therefore, the fifth hypothesis was not supported.

Mediation Models

Procedure for assessing mediation. As suggested by Baron and Kenny (1986), to assess mediation, three regression procedures had to be conducted. First, the child behavioral outcomes (i.e., the dependent variables) were regressed on the violence exposure measures (i.e., the independent variables). The findings for these regression procedures are summarized in Table 5. Second, the maternal responsiveness measure (i.e., the hypothesized mediator) was regressed on the two violence exposure measures. The findings for this procedure are summarized in Table 8. Third, the child behavioral outcomes were regressed on the two violence exposure measures and the maternal responsiveness measure. The findings for these procedures are shown in Table 9.

A variable is determined to be a mediator when (a) the independent variables are significantly related to the dependent variables, (b) the independent variables are significantly related to the hypothesized mediating variable, (c) the mediating variable is significantly related to the dependent variable and, (d) the relationship between the independent and dependent variables is either less significant or no longer significant when the mediating variable is included in the regression model (established by comparing the effect of the independent variable on the dependent variable in the first and third set of regression procedures).

Table 8

Linear Regression Results for Maternal Responsiveness on Violence Exposure

Violence Exposure Variable	B	SE	β	<i>p</i>
Weighted Violence Exposure	-.10	.15	-.06	.499
Domestic violence exposure	1.67	2.42	.06	.491
Total Adjusted R^2	-.009			

Hypothesis 6. To examine if Maternal Responsiveness to Child Negative Emotions partially mediated the relation between Weighted Violence Exposure and internalizing, externalizing, and total behavior problems, three sets of hierarchical regressions were calculated. First, internalizing, externalizing, and total behavior problems were regressed on Weighted Violence Exposure, domestic violence exposure, maternal ethnicity, and maternal age (externalizing behavior). Second, Maternal Responsiveness to Child Negative Emotions was regressed on Weighted Violence Exposure and domestic violence exposure. Third, internalizing, externalizing, and total behavior problems were regressed on Weighted Violence Exposure, domestic violence exposure, Maternal Responsiveness to Child Negative Emotions, maternal ethnicity, and maternal age (externalizing behaviors).

Table 9

Results for Regressing Child Behavior Problems on Violence Exposure Measures and Maternal Responsiveness

Child Behavior	B	SE	β	<i>p</i>
<i>Internalizing</i>				
Latina	6.52	1.76	.28	.000
Weighted Violence Exposure	.45	.13	.28	.000
Domestic violence exposure	5.27	2.06	.20	.011
Maternal Responsiveness	-.06	.07	-.07	.381
<i>Externalizing</i>				
Latina	3.52	1.72	.17	.042
Maternal age	-.91	.59	-.13	.123
Weighted Violence Exposure	.31	.12	.22	.011
Domestic violence exposure	-.82	1.97	-.04	.677
Maternal Responsiveness	-.03	.07	-.04	.639
<i>Total</i>				
Latina	5.28	1.69	.24	.002
Weighted Violence Exposure	.55	.12	.36	.000
Domestic violence exposure	1.07	1.98	.04	.591
Maternal Responsiveness	-.04	.07	-.04	.568

Results in Table 5 reveal that Weighted Violence Exposure was significantly related to internalizing, externalizing, and total behavior problems. Thus, the first condition for mediation was met. However, as the findings in Table 8 show, Weighted Violence Exposure did not significantly predict maternal responsiveness. Thus, the second condition for mediation was not met. In addition, maternal responsiveness was not significantly related to any of the three child behavioral outcomes and there was not a significant change in the associations between Weighted Violence Exposure and child outcomes when maternal responsiveness was introduced into the regression (see Table 9). Therefore, the third and fourth requirements for mediation were also not met. Thus, maternal responsiveness did not mediate the relation between young children's Weighted Violence Exposure and their behavioral problems. The sixth hypothesis was not supported.

Hypothesis 7. To examine if Maternal Responsiveness to Child Negative Emotions partially mediated the relation between domestic violence exposure and internalizing, externalizing, and total behavior problems, three sets of hierarchical regressions were calculated. First, internalizing, externalizing, and total behavior problems were regressed on Weighted Violence Exposure, domestic violence exposure, maternal ethnicity, maternal age (externalizing behaviors). Second, Maternal Responsiveness to Child Negative Emotions was regressed on domestic violence exposure and Weighted Violence Exposure. Third, internalizing, externalizing, and total behavior problems were regressed on Weighted Violence Exposure, domestic violence exposure, Maternal Responsiveness to Child Negative Emotions, maternal ethnicity, and maternal age (externalizing behaviors).

Results in Table 5 reveal that domestic violence exposure was significantly related to internalizing behavior problems. Thus, the first condition for mediation was met. However, as can be seen in Table 8, domestic violence exposure did not significantly predict maternal responsiveness. Thus, the second condition for mediation was not met. In addition, maternal responsiveness was not significantly related to internalizing behavior problems and there was not a significant change in the association between domestic violence exposure and internalizing behavior problems when maternal responsiveness was introduced into the regression (see Table 9). Therefore, the third and fourth requirements for mediation were also not met. Thus, it can be concluded that maternal responsiveness did not partially or fully mediate the relationship between young children's domestic violence exposure and their internalizing behavior problems. Accordingly, the seventh hypothesis was not supported.

Discussion

This study examined the impact of exposure to violence and maternal responsiveness on young children's behavioral functioning. The first goal of this study was to consider the direct effects of exposure to domestic and community violence on young children's internalizing, externalizing, and total behavior problems, and to determine if these forms of violence interacted with each other to predict higher levels of child behavior problems. The second objective was to investigate whether a mother's responsiveness to her child's negative emotions helped protect her child from the effects of violence exposure, or alternatively, acted as a mediator of the relation between violence exposure and its effects on her child.

In accordance with the study's ecological-transactional perspective, community violence was considered an exosystem risk factor, domestic violence was conceptualized as a microsystem risk factor, and both were hypothesized to influence the young child's ontogenetic development. A mother's responsiveness to her child's sad and angry emotions was posited to be a proximal protective or compensatory risk factor that helped buffer children from the effects of violence exposure, or a proximal potentiating risk factor that mediated the effects of violence exposure on young children's behavioral adaptation.

Overall, findings partially supported the proposed ecological model, revealing that the exosystem factor of community violence and the microsystem factor of domestic violence were associated with higher levels of behavior problems in young children. The microsystem factor of maternal responsiveness was not found to be a proximal protective or compensatory risk factor, and did not moderate the effects of young children's exposure to either domestic or community violence. The relation between domestic and community violence exposure and child behavior did not vary significantly with differences in levels of maternal responsiveness, nor was maternal responsiveness a proximal potentiating risk factor that mediated the effects of violence exposure on children's behavioral functioning. In addition, the current study did not find evidence of the moderation of community violence exposure by domestic violence exposure; the relation between community violence and child behavior did not vary significantly with differences in the level of domestic violence.

Community Violence Exposure and Young Children's Behavioral Functioning

As hypothesized, community violence exposure was a significant risk factor in children's behavioral functioning. Higher levels of child exposure to community violence significantly predicted higher scores on children's internalizing, externalizing, and total behavior problems, and community violence exposure accounted for approximately 4% to 12% of the variance in behavioral functioning. Young children who are exposed to community violence are more likely to demonstrate a range of behavior problems, including anxiety, withdrawal, and aggression. These results are consistent with previous research on multi-ethnic, high-risk young children that links community violence exposure to children's behavior problems (Farver et al., 2005; Linares et al., 2001; Oravecz et al., 2008; Shahinfar et al., 2000).

Domestic Violence Exposure and Young Children's Behavioral Functioning

Witnessing domestic violence was found to be a significant predictor of young children's internalizing behavior, explaining approximately 3% of the variance, but unexpectedly, it did not

significantly predict either externalizing or total behavior problems. Although this finding was unanticipated, it is not entirely discordant with prior research findings on the effects of domestic violence exposure on young children's functioning. Domestic violence exposure has been linked to internalizing behavior alone in many studies (Linares et al., 2001; Oravecz et al., 2008).

Although these links between violence exposure and child behavioral functioning confirm the findings of prior research, in this study community violence exposure accounted for more variance in child behavioral functioning than did domestic violence. Community violence was a more distal risk factor, but predicted young children's behavioral problems above and beyond those predicted by domestic violence. This finding not only underscores the importance of considering young children's exposure to both domestic and community violence as significant risk factors in early social and emotional development, it highlights the contribution of exosystem influences on early child development. When conceptualizing the factors that shape young children's development, it is therefore critical to view circumstances beyond the home and family. However, only a small amount of variance in child behavioral functioning was accounted for by community violence, indicating that there are other important predictors of child behavioral problems.

Interaction between Domestic and Community Violence Exposure

In this study, domestic and community violence exposure did not interact to predict young children's behavioral functioning. These results are similar to those of Cicchetti and Lynch (1998), who found that maltreatment and community violence exposure individually predicted school-age children's outcomes, but their interaction did not. Malik (2008), however, found that domestic and community violence did interact to predict low-risk, school-age children's aggressive behavior.

These mixed findings point to the importance of considering both developmental and ecological factors when evaluating the effects of children's violence exposure. The experience of violence exposure and the resulting effects are determined in part by cognitive, affective, and regulatory capacities, all of which change over the course of development (Fosco et al., 2007; Laor et al., 1996). The developmental differences between young children and school-age children in these three studies may contribute in part to the findings. Older children may experience domestic and community violence in different ways than do younger children. Children from high- and low-risk social ecologies may also experience domestic and community violence in different ways. The nature of differential effects could be more accurately determined by incorporating the study of interactive effects into research comparing the responses of older and younger children, as well as the responses of low-risk and high-risk children, to both forms of violence.

Two Measures of Community Violence Exposure

Two community violence exposure measures were used in this study. The first was a summary scale of all events that the child had directly experienced, witnessed, or known about. The second was a weighted summary scale that apportioned more value to events that the child had either directly experienced or witnessed. The literature suggests either that (a) the cumulative amount of events and not the particular level of exposure is the salient factor in community violence exposure (Rosenthal & Wilson, 2001), or that (b) more proximal

experiences (direct experiencing and witnessing) are more influential in child adaptation to violence exposure (Pynoos et al., 1995). Although the Weighted Violence Exposure scale accounted for a slightly greater amount of variance (approximately 1%) in children's functioning across all behavioral scales than the Total Violence Exposure scale, this difference is too small to have statistical or practical significance and it is not possible to endorse the use of one type of scale over the other.

The Influence of Maternal Responsiveness: Direct Effects

Unexpectedly, a mother's responsiveness to her child's negative emotions was not related to her child's internalizing, externalizing, or total behavior problems. Although the hypothesized relation between maternal responsiveness and child functioning was in the right direction (negative; see Table 4), suggesting that higher amounts of maternal responsiveness are related to a lower number of child behavior problems, maternal responsiveness was not significantly associated with child functioning. This finding is at odds with numerous previous findings that maternal (and paternal) responsiveness to child negative emotions predicted better social and emotional functioning in at-risk children of all ages, across both violence types (Johnson & Lieberman, 2007; Ramsden & Hubbard, 2003; Shipman et al., 2007).

The Influence of Maternal Responsiveness: Moderation of Domestic and Community Violence Exposure

Maternal responsiveness did not buffer or protect young children from the effects of either domestic violence or community violence exposure in this study. Although there is very limited prior research on the interactive effects of parenting practices and violence exposure on young children's functioning, Katz and Windecker-Nelson (2006) found that maternal coaching of sadness, anger, and fear protected preschool children from the effects of domestic violence, such that children who had mothers who were high in emotion coaching did not display negative adaptation. Similarly, in studies of community violence exposure, Bailey and colleagues (2006) found that young children who perceived that their mothers accepted and supported them experienced either low levels of behavior problems or none at all. Kliewer and colleagues (1998) reported similar findings for school-aged children. However, Oracevz et al. (2008) found that children whose mothers were more nurturing, consistent, and responsive were not buffered from either domestic or community violence. The findings in this current study also indicate that a mother's responsiveness to her young child's sad and angry emotions did not remediate the effects of domestic and community violence exposure.

It is unclear why, in this study, maternal responsiveness was not related to child outcomes and did not help protect children from the effects of violence exposure. From a measurement perspective, it is possible that the particular semi-structured interview format and scoring protocol used in this study did not accurately capture how responsive a mother may have been to her child's sad and angry feelings. In addition, given the relatively low Cohen's kappa ($K = .60$) and relatively low percent-agreement (72.20%) between raters for the Meta-Emotion Interview data, it is possible that the reliability of the maternal responsiveness measure was a drawback in this study. As such, the maternal responsiveness measure used may not have accurately indexed the ability of a mother to respond to and assist her child with negative emotions. This may contribute, in part, to the lack of association between maternal responsiveness and child

behavioral outcomes, as well as to the finding that maternal responsiveness did not moderate the effects of violence exposure on young children's behavioral functioning.

Furthermore, it is possible that the construct of maternal responsiveness used in this study was not valid for this sample of mothers and children. First, the measure of maternal responsiveness may have been too general or global and therefore failed to capture a specific aspect of maternal responsiveness that might have been more helpful to children struggling with difficult emotions. Although constructs of early childhood emotion regulation and attachment theory illuminate the importance of maternal sensitivity, availability, and responsiveness in helping infants and young children learn about and manage their emotions, it may be that certain aspects of maternal responsiveness—such as problem-solving strategies or emotion awareness—are more effective. Although the scale in this measure was internally consistent, it may have been too broad to capture specific aspects of responsiveness that may be of more help to children who are feeling sad or angry.

In addition, there may be a distinction between the types of sad and angry emotions and situations mothers were thinking about while being interviewed, and the types of emotions and behavior problems captured by the behavior scales used in this study. It is possible that mothers were responding to more typical emotions and situations, such as a child's upset over the loss of a toy or a child's anger with a peer. Thus, maternal responsiveness as measured in this study may be related to a range of child emotions other than those formed in response to violence exposure. Similarly, maternal responsiveness in this study may have buffered or protected children in situations not as stressful or traumatic as violence exposure.

There is some support for this suggestion. In their discussion of early childhood emotional development, Thompson and Lagattuta (2006) distinguished the normative pathways of emotional maturation from those available to young children facing violence. Described as emotionally vulnerable, children exposed to violence may be in greater need of help in order to cope with their experiences. The authors suggested that therapeutic efforts aimed at helping emotionally vulnerable children regain age-appropriate coping strategies may be necessary. Indeed, child-parent psychotherapy employed for mothers and young children coping with domestic violence (Lieberman, Ippen, & Van Horn, 2006), maltreatment (Toth, Maughan, Manly, Spagnola, & Cicchetti, 2002), terrorism (Coates & Schechter, 2004), and war (Almqvist & Broberg, 2003) has proven successful in helping young children manage their experience of violence. It is interesting to note that child-parent psychotherapy practices enlist the emotional experience and expression of both mother and child, promote open communication about their difficulties, and support the development of narrative discourse about the experience and impact of violence exposure—all dyadic and parenting characteristics that promote self-regulation and coping in young children. Therefore, it may be that for this sample, maternal responsiveness as measured, although sufficient to help young children cope with everyday emotions, may not provide the degree of responsiveness required to help young children with the emotional and behavioral experience associated with violence exposure.

The Influence of Maternal Responsiveness: Mediation of Domestic and Community Violence Exposure

In this study, maternal responsiveness did not mediate the relation between either form of violence exposure and children's outcomes. For maternal responsiveness to partially mediate the association between violence and outcome, it must first be related to both violence exposure and child outcome. Neither of these conditions was met. As noted above, maternal responsiveness was not related to child outcomes despite expectations from findings in prior research. In addition, neither domestic violence exposure nor community violence exposure predicted maternal responsiveness in this study. According to the spillover hypothesis, stress and conflict in the microsystem (domestic violence) should result in negative changes in the quality of the mother-child relationship through poor parenting practices. Multiple studies of the effects of domestic violence exposure on young children establish that a mother's parenting capacities are negatively impacted by her exposure to violence. However, the findings in this study did not support these prior results.

The expectation that children's exposure to community violence would influence maternal responsiveness was also not supported. Conceptualizing violence exposure within an ecological-transactional framework makes it possible to extend the spillover hypotheses to include stress and conflict in the mother's exosystem (i.e., community violence), factors which are hypothesized to result in negative changes in the quality of the mother-child relationship and maternal parenting. In addition, young children are most frequently in the presence of their primary caregivers and live in the same neighborhood, subject to the same crime rates. As such, in this study, it was suggested that the quality of maternal responsiveness would be negatively influenced by community violence as measured by children's exposure. These expectations were not met. Therefore, it is not possible to support an extension of the spillover hypothesis.

Given that two requirements for testing mediation were not met (the relation between violence and maternal responsiveness, and the relation between maternal responsiveness and child outcome), mediation was not a mechanism through which young children in this sample were influenced by violence exposure. Confirmatory hierarchical linear regressions supported this finding.

Limitations

A number of important limitations related to design and measurement in this study must be considered. First, this study utilized cross-sectional data in examining relationships between the variables of violence exposure, child behavioral outcomes, and maternal responsiveness. A cross-sectional design limits the inference of causal relationships, and therefore it was not possible to attribute cause and effect or directionality to the relations between domestic and community violence exposure and child outcomes. A longitudinal design that follows young children over time could help determine the directionality of the effects of violence exposure and child outcome. Furthermore, participation in the present study was voluntary and composed primarily of a clinical sample. As a result, this sample is neither random nor representative of the general population of mothers and young children facing violence exposure.

Second, maternal report was the only source of information utilized in this study. Maternal perceptions of child community violence exposure, child functioning, and maternal responsiveness may reflect single-reporter bias. Therefore, further studies of young children's exposure to violence should utilize additional reporters and observational measures. Although it is difficult to assess community violence exposure of young children without using maternal (or parental) report, neighborhood crime rate statistics could serve as an additional metric for violence exposure (Farver et al., 2005; Linares et al., 2001). Differentiating maternal perception of community violence threat from exposure checklists might help clarify maternal fears and expectations from actual occurrence (Linares et al., 2001). Because of the young age of the children in this study, self-report measures of community violence exposure were not utilized. However, Shahinfar and colleagues (2000) investigated the use of a cartoon-based interview developed to assess preschool children's exposure to violence. In their study, Shahinfar and colleagues found that in a sample of urban children participating in a Head Start program, child report of exposure to violent events was greater than parent report. This supports the finding by Richters and Martinez (1993) that school-age children reported greater levels of witnessing and direct experience of community violence than their parents reported. These results suggest that young children, particularly those who spend significant amounts of time in the community away from their parents (e.g., daycare or preschool), may be experiencing greater amounts of violence than accounted for by their parents. However, in the Shahinfar (2000) study, young children's ability to respond to the self-report instrument was dependent upon their cognitive development, and the accuracy, stability, and validity of measures designed for preschool-age children is a subject of considerable debate in the self-report literature.

In addition, maternal report about her child's behavior may be influenced by her own experience and response to violence (Johnson & Lieberman, 2007). Teacher or daycare provider report and direct observations of child behavior (in the home, on a playground, at a preschool or day care site, or in a laboratory setting) could provide additional measures of child behavioral functioning. Although a self-report measure of distress is available for young children (Shahinfar et al., 2000), concerns about the psychometric properties of preschool-age instruments remains. In addition, direct observation of the interaction between mother and child, either at home or in a laboratory setting, could provide information about the child's behavioral functioning within the mother-child relationship.

Furthermore, a mother's report about her own parenting abilities may reflect bias due to her desire to be a competent and caring parent, as well as her difficulty in disclosing what might be perceived as parenting problems or inadequacies. To address this potential bias, maternal responsiveness could also be measured during either home visitation or observed mother-child interaction in a laboratory setting. Studies that examined mother and child behavior during dyadic interaction establish a link between maternal response and child coping abilities (Gorman, 1999; Levendosky et al., 2003; Linares & Morin, 2006). Perhaps for young children, maternal responsiveness is best captured through mother-child interaction (as supported by attachment theory), and not through a subjective interview of the mother alone.

Third, the community violence questionnaire used in this study was a true-or-false checklist asking the mother to identify violence events her child had experienced during the child's lifetime. An amended form that included information about the mother's own exposure,

her co-witnessing exposure with her child, the frequency of events, and the status of victim or perpetrator (stranger, friend, or family member) for each violent event would have provided additional information about the mother's exposure to community violence, as well as more detailed information about the child's exposure. This information would have allowed for a more reliable assessment of mothers' community violence exposure and would have allowed for a more accurate study of the relation between mothers' community violence exposure and maternal responsiveness. Furthermore, this additional information would allow investigators to differentiate violence events along multiple dimensions (e.g., the influence of frequency of events, events experienced when the mother was present, the role of victim or perpetrator), which would have enabled investigators to examine the relation between different dimensions of community violence exposure and child functioning in a more finely-tuned way.

In addition, in this study, there was a possible confound between domestic violence exposure and a small selection of community violence exposure items. Typically, community violence exposure questionnaires evaluate events involving the use or threat of physical force that occur between neighbors, between strangers, or between police enforcement officers and neighbors. The questionnaire in this study also included items about family violence (see Appendix A, items 21- 23, particularly item 22). It is possible that interpersonal violence and family violence events may have been endorsed by mothers exposed to domestic violence as items pertaining to them. Although domestic violence exposed mothers endorsed some family violence and physical aggression items more frequently than did non-exposed mothers, non-exposed mothers endorsed the same items in significant numbers; some items were endorsed in even greater numbers by non-exposed mothers. Entering domestic violence exposure as a dummy variable protected against the possible confound of domestic violence exposure and allowed for interpersonal violent events to be included in this study. Future use of this questionnaire could address these issues either by administering the questionnaire by interview and asking each mother not to include herself as the victim, or by including additional queries about victims and perpetrators.

Suggestions for Future Research

The findings of this study support earlier research on the direct effects of exposure to violence on child behavioral functioning, but they do not necessarily indicate the experience of trauma. Earlier studies of children's violence exposure suggest that very young children are uniquely impacted by events involving the injury or death of a parent, particularly if the child is a witness (Ruttenberg, 1997), and that witnessing a violent threat against a parent or caregiver elicits higher rates of posttraumatic stress symptoms than do other types of traumatic events (Rossman, et al., 1997; Scheeringa & Zeanah, 1995; Silva et al., 2000). Because the majority of children in this study (77.62%) had witnessed domestic violence against their mothers, it is likely that they may have experienced posttraumatic stress. Although this study did not assess the presence of posttraumatic stress symptoms in these young children, future research should examine this domain of psychological and behavioral adaptation. Both the Diagnostic and Statistical Manual of the American Psychiatric Association (American Psychiatric Association, 2000) and the Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (*Zero to Three*, 1994) provide nosologies for evaluating young children's posttraumatic stress responses.

Evaluating posttraumatic stress response is particularly important given the finding in this study that domestic violence exposure predicted internalizing problems in young children but did not predict either externalizing or total behavior problems. Internalizing problems are understood to reflect anxiety and withdrawal symptoms in young children, and posttraumatic stress disorder is classified as a subtype of anxiety disorders (American Psychiatric Association, 2000). Future studies should investigate the relation between young children's posttraumatic stress and their internalizing symptoms. In particular, not only should a direct effects model be employed (assessing the relation between posttraumatic stress and internalizing behavior problems) but an indirect effects model should be examined to ascertain if posttraumatic stress is a mediator of the relation between domestic violence exposure and internalizing behavior problems. Help and intervention for a young child with internalizing behavior problems may be quite different from the support and assistance required by a young child with posttraumatic stress. Ascertaining the relation between the two may reveal important conceptual and clinical implications of the effects of violence exposure on young children's functioning, and may also indicate the types of parenting behavior that help children to manage their experience.

There are two major theoretical points that pertain to this study's findings. First, it is possible that the experience of violence within the microsystem (domestic violence) may result in a different set of effects than violence experienced in the more distal exosystem (community violence), because the experience of violence is different in each domain. Anxiety, withdrawal, and other internalizing behaviors may be more salient for young children exposed to domestic violence, because expressing externalizing or aggressive behaviors within a violent home setting may increase the risk of physical and verbal abuse. Second, witnessing a mother's battering is likely to threaten a child profoundly with the traumatic loss of the mother and promote intense fear. While this fear is likely to activate attachment behaviors, the likely unavailability of the battered mother simultaneously threatens the attachment relationship (for a discussion of this dilemma, see Lieberman & Amaya-Jackson, 2005). Anxiety and withdrawal in the face of these threats may represent the child's immediate emotional and psychological responses as well as the adaptations that best help to preserve the attachment relationship and ensure the availability and safety of the mother. A child who is aggressive in the face of domestic violence may not successfully signal the need for protection from threat and fear to a mother who is suffering.

These types of adaptive pressures do not necessarily occur in the experience of community violence, and therefore a wider range of behavioral responses may be available to the young child exposed to this form of violence alone. Although Bronfenbrenner (1977) suggested that community violence occurs within the microsystem because of its influence on child development, the majority of community violence events occur largely outside of the mother-child relationship. Unless the violence experienced is a threat to the physical well-being of the mother, community violence events may engage attachment and caregiving systems, but do not inherently compromise them. As such, the child may be more able to experience and express emotional and behavioral upset, fear, and dysregulation through a broader range of behaviors and actions, and these behaviors may be appropriate signals for help and protection from a non-compromised attachment system.

An additional theoretical point concerns the evaluation of the effects of violence exposure across diverse social and risk ecologies. It is possible that Malik's (2008) findings that domestic

and community violence interacted to predict child aggression were a result of her exploration with a low-risk population. As noted above, perhaps violence is experienced differently by older, low-risk children than by high-risk children, and has different effects, not only from a developmental perspective but from an ecological-transactional perspective. Certainly the ecologies of these populations are distinct: The complex experience of young and older high-risk children and their families may speak to an experience of violence that is influenced not only by the developmental vulnerability of the young child but by the multiple dimensions of risk and adaptation that high-risk families may experience. Perhaps older children who experience less risk experience the joint impact of both types of violence exposure in a different way than high-risk children do, and thus exhibit divergent patterns of adaptation. Why low-risk, school-age children experience interactive effects of violence while young and older high-risk children do not would be an important question to consider in future research. Because violence occurs across multiple ecologies, it would be helpful to know the differential effects of violence exposure on children and adults who live in different social and community environments. A comparison of the experiences and effects of domestic and community violence exposure across risk ecologies and populations may help elucidate the ways in which children from various communities experience and respond to violence.

The results of this study also suggest a number of practical implications. The particular pattern of associations between violence exposure and young children's behavioral functioning found in this study—domestic violence predicting internalizing behavior and community violence predicting all behavioral domains—emphasizes the necessity of assessing exposure to *both* forms of violence when trying to discern antecedents that may have influenced a young child's functioning. In particular, in this study, community violence exposure predicted child functioning above and beyond exposure to domestic violence. This finding highlights the need to assess community violence exposure in high-risk children. Screening measures used by pediatricians, child development centers, and private and community mental health services should include assessments for both forms of violence exposure, and primary caregivers should be interviewed about children's exposure to violence. Similarly, preschool administrators, teachers, and resource personnel should be informed about the possible effects of both domestic and community violence exposure on young children's behavior, and school psychologists should be trained to identify families whose young children need help to cope with violence exposure and provide them with assistance or referrals.

An inquiry into the effects of violence exposure on young children points to the importance of clarifying definitional constructs, obtaining better prevalence estimates, and examining ecological influences on the experience of and adaptation to violence. The findings presented here also highlight the importance of protecting young children from violence exposure and supporting them in their development when they have been exposed to violence. Because they are young, they rely on their caregivers for help to manage and understand their experience. Identifying aspects of parenting that facilitate young children's regulation of emotions associated with violence exposure can inform parents as well as the resource providers that assist them and their children. Although the parenting measure examined in this study was not related to child functioning, continued evaluation of specific types of what Cummings and Davies (2010) call "emotional" parenting (p. 120) may serve to clarify particularly salient and helpful parenting characteristics. In addition, violence exposure and its effects are experienced

in an ecological-transactional context. As members of the community—as participants in the microsystems, exosystems, and macrosystems that shape young children’s lives—individuals as well as schools, community organizations, and public policymakers can take part in the active caregiving required by young children who find themselves struggling with the effects of violence exposure.

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Appendix A

The Survey of Children's Exposure to Community Violence, Parent Report Version

1. My child has been chased by a gang or older kids
2. My child has seen someone else being chased by gangs or older kids
3. My child knows someone who has been chased by gangs or older kids
4. My child has been asked to use, sell, or help distribute illegal drugs
5. My child has seen other people get asked to use, sell, or help distribute illegal drugs
6. My child knows someone who has been asked to use, sell, or help distribute illegal drugs
7. My child has seen other people use, sell, or help distribute illegal drugs
8. My child has been in a serious accident where he/she thought that someone would get hurt very badly or die
9. My child has seen someone else have a serious accident where he/she thought that someone would get hurt very badly or die
10. My child knows someone who has been in a serious accident where he/she thought that someone would get hurt very badly or die
11. My child has been at home when someone has broken into or tried to force a way into the house or apartment
12. My child has been away from home when someone has broken into or tried to force a way into the house or apartment
13. My child has seen someone trying to force a way into somebody else's house or apartment
14. My child knows someone whose house or apartment has been broken into
15. My child has been picked up, arrested, or taken away by the police
16. My child has seen someone else get picked up, arrested, or taken away by the police
17. My child knows someone who has been picked up, arrested, or taken away by the police
18. My child has been threatened with serious physical harm by someone
19. My child has seen someone else get threatened with serious physical harm
20. My child knows someone who has been threatened with serious physical harm
21. My child has been slapped, punched, or hit by a member of the family
22. My child has seen someone else slapped, punched, or hit by a member of the family
23. My child knows someone who has been slapped, punched, or hit by a member of the family
24. My child has been slapped, punched, or hit by someone who is not a member of the family
25. My child has seen another person getting slapped, punched, or hit by someone who was not a member of the family
26. My child knows someone who has been slapped, punched, or hit by someone who was not a member of the family
27. My child has been beaten up or mugged
28. My child has seen someone else getting beaten up or mugged
29. My child knows someone who has been beaten up or mugged
30. My child has been sexually assaulted, molested, or raped
31. My child has seen someone else being sexually assaulted, molested, or raped

32. My child knows someone who has been sexually assaulted, molested, or raped
33. My child has seen someone carrying or holding a gun or knife (do not include police, military, or security officers)
34. My child knows someone who carries or holds a gun or knife (do not include police, military, or security officers)
35. My child has been attacked or stabbed with a knife
36. My child has seen someone else being attacked or stabbed with a knife
37. My child knows someone else who has been attacked or stabbed with a knife
38. My child has seen a seriously wounded person after an incident of violence
39. My child has been seriously wounded in an incident of violence
40. My child knows someone who has been seriously wounded in an incident of violence
41. My child has seen or heard a gun fired in your home
42. My child has been shot or shot at with a gun
43. My child has seen someone else get shot or shot at with a gun
44. My child knows someone who has been shot or shot at with a gun
45. My child has seen a dead person somewhere in the community (do not include wakes and funerals)
46. My child has heard about a dead person found somewhere in the community (do not include wakes and funerals)
47. My child has seen someone committing suicide
48. My child has known someone who committed suicide
49. My child has seen someone being killed by another person
50. My child has known someone who was killed by another person
51. My child has been in a situation not already described where he/she was extremely frightened or thought that he or she would get hurt very badly or die. Please describe that situation in your own words.

Note: For three events, the mother was asked an additional question related to her child witnessing the event (items 7, 12, and 41). Four events did not include questions about direct experience (see items 44-50).

Appendix B

Weighted Violence Exposure

1. Chased by a gang or older kids
 - a. My child knows someone who has been chased by gangs or older kids
 - b. My child has seen someone else being chased by a gang or older kids
 - c. My child has been chased by gangs or older kids
2. Use, sell, or help distribute drugs
 - a. My child knows someone who has been asked to use, sell, or help distribute illegal drugs
 - b. My child has seen other people get asked to use, sell, or help distribute illegal drugs
 - c. My child has been asked to use, sell, or help distribute illegal drugs
3. Serious accident where he/she thought someone would get hurt very badly or die
 - a. My child knows someone who has been in a serious accident where he/she thought that someone would get hurt very badly or die
 - b. My child has seen someone else have a serious accident where he/she thought that someone would get hurt very badly or die
 - c. My child has been in a serious accident where he/she thought that someone would get hurt very badly or die
4. Break-in or forced entry
 - a. My child knows someone whose house or apartment has been broken into
 - b. My child has seen someone trying to force a way into somebody else's house or apartment
 - c. My child has been at home when someone has broken into or tried to force a way into the house or apartment
5. Picked up, arrested, or taken away by police
 - a. My child knows someone who has been picked up, arrested, or taken away by the police
 - b. My child has seen someone else get picked up, arrested, or taken away by the police
 - c. My child has been picked up, arrested, or taken away by the police
6. Threatened with serious physical harm
 - a. My child knows someone who has been threatened with serious physical harm
 - b. My child has seen someone else get threatened with serious physical harm
 - c. My child has been threatened with serious physical harm by someone
7. Being slapped, punched, or hit by a family member or a non-family member
 - a. My child knows someone who has been slapped, punched, or hit by a member of the family or by someone who was not a member of the family
 - b. My child has seen someone else slapped, punched, or hit by a member of the family or by someone who was not a member of the family
 - c. My child has been slapped, punched, or hit by a member of the family or by someone who was not a member of the family

8. Beaten up or mugged
 - a. My child knows someone who has been beaten up or mugged
 - b. My child has seen someone else getting beaten up or mugged
 - c. My child has been beaten up or mugged
9. Sexual assault, molestation, or rape
 - a. My child knows someone who has been sexually assaulted, molested, or raped
 - b. My child has seen someone else being sexually assaulted, molested, or raped
 - c. My child has been sexually assaulted, molested, or raped
10. Carrying or holding a gun or knife
 - a. My child knows someone who carries or holds a gun or knife (do not include police, military, or security officers)
 - b. My child has seen someone carrying or holding a gun or knife (do not include police, military, or security officers)
11. Being attacked or stabbed with a knife or shot/shot at with a gun
 - a. My child knows someone else who has been attacked or stabbed with a knife or shot/shot at with a gun
 - b. My child has seen someone else being attacked or stabbed with a knife or shot/shot at with a gun
 - c. My child has been attacked or stabbed with a knife or shot/shot at with a gun
12. Serious wound after an incident of violence
 - a. My child knows someone who has been seriously wounded in an incident of violence
 - b. My child has seen a seriously wounded person after an incident of violence
 - c. My child has been seriously wounded in an incident of violence
13. Awareness of a dead person, suicide, or homicide
 - a. My child has heard about a dead person found in the community, a suicide, or a homicide
 - b. My child has seen a dead person in the community, a suicide, or a homicide

Note: Forty-seven of the 50 items from the The Survey of Children's Exposure to Community Violence, Parent Report Version were used in this scale. Three items were omitted due to discrepant non-Guttman style formatting (items 7, 12, and 41). Eleven items of this weighted scale have three levels of violence exposure and two items have only two levels (witnessed and known).

Appendix C

Meta-Emotion Interview

Initial Question: “I’m going to be asking you questions about the times when (your child) experienced feeling sad and angry. Let’s start by thinking of a time when (your child) was feeling *sad/angry* and tell me about it.

Queries:

1. How did you know (your child) was feeling *sad/angry*?
2. Can you usually tell when (your child) is feeling *sad/angry*? If yes, how do you know when (your child) was feeling *sad/angry*?
3. How were you feeling when (your child) was feeling *sad/angry*? Did you feel that way because (your child) was feeling *sad/angry*?
4. What was going through your mind when (your child) was feeling *sad/angry*?
5. How did you respond to (your child) when he/she is feeling *sad/angry*?
6. Is that how you typically try to respond to (your child) when he/she is feeling *sad/angry*?
7. Are there things that you would hope for (your child) to learn at times when he/she is feeling *sad/angry*?

Appendix D

Meta-Emotion Items

Italicized items are reverse scored

1. Parent notices that child has this emotion
2. Parent has no problem distinguishing this emotion
3. Parent is descriptive of child's experience of emotion
4. Parent has insight into child's experience of this emotion
5. Parent is descriptive of some part of remediation process
6. Parent knows cause of child's emotion
7. Parent talks at length about child's experience
8. Parent answers questions quickly and easily about child's emotion
9. Parent seems comfortable with child's emotion and expression
10. Child expresses the emotion
11. Parent empathizes with child's emotion (consider voice tone)
12. Parent wants child to know its "okay" to have this feeling
13. Parent wants child to talk to them about the emotion
14. Parent judges how/when child could express the emotion
15. *Child is ever isolated when expressing the emotion*
16. *Child is ever punished when/for expressing the emotion*
17. *Child is ever restrained when expressing the emotion*
18. *Parent prefers child to be soothed before parent gets involved*
19. Parent ever distracts child from the emotion
20. *Parent ever offers treat to distract from the emotion*
21. Parent uses a mental (analytical) approach to child's emotion
22. Parent says it is important to talk about the emotion (in general)
23. Parent dislikes way others express this emotion
24. Parent confides in interviewer
25. Parent digresses from the question being asked
26. Parent shows respect for child's experience of emotion
27. When child is upset, parent talks about situation, emotion
28. Parent intervenes (protects from cause) in situations causing emotion
29. Parent comforts during emotion
30. Parent teaches rules for appropriate expressiveness to child
31. Parent educates child about the nature of the emotion
32. Parent teaches child strategies to soothe own emotion
33. Parent seems involved in child's experience of the emotion
34. *Parent seems unsure of how to deal with this emotion*
35. Parent seems to have given thought and energy to emotions and what she wants her child to know about them
36. Parent's strategies seem age- and situationally appropriate

Appendix E

Linear Regression Results for Total Violence Exposure Models

Table E1

Stepwise Hierarchical Regression Analysis Examining Domestic Violence and Total Violence Exposure as Predictors of Young Children's Internalizing, Externalizing, and Total Behavior (Total Violence Exposure added in Final Step)

Predictor	Final Model				Adjusted R^2 Added
	B	SE	β	p	
<i>Internalizing</i>					
Latina	6.94	1.76	.30	.000	.110**
DV exposure	5.22	2.06	.20	.012	.064**
Total violence exposure	.408	.119	.26	.001	.059**
<i>Externalizing</i>					
Latina	3.78	1.72	.19	.030	.057**
Maternal age	-.88	-.59	-.13	.141	
DV exposure	-.76	1.97	-.03	.701	-.006
Total violence exposure	0.27	.12	.20	.023	.028*
<i>Total</i>					
Latina	5.70	1.70	.26	.001	.065**
DV exposure	1.10	1.99	.05	.583	.011
Total violence exposure	.49	.12	.34	.000	.103**

Note. Results are reported for the final models. DV = domestic violence. Internalizing Behavior Total Adjusted $R^2 = .233$; Externalizing Behavior Total Adjusted $R^2 = .079$; Total Behavior Total Adjusted $R^2 = .179$.

* $p < .05$, ** $p < .01$.

Table E2

Stepwise Hierarchical Regression Analysis Examining Domestic Violence and Total Violence Exposure as Predictors of Young Children's Internalizing, Externalizing, and Total Behavior (Domestic Violence Exposure added in Final Step)

Predictor	Final Model				Adjusted R^2 Added
	B	SE	β	p	
<i>Internalizing</i>					
Latina	6.94	1.76	.30	.000	.110**
Total violence exposure	.41	.12	.26	.001	.093**
DV exposure	5.22	2.06	.20	.012	.030*
<i>Externalizing</i>					
Latina	3.78	1.72	.19	.030	.057**
Maternal age	-.88	.59	-.13	.141	
Total violence exposure	.27	.12	.20	.023	.028*
DV exposure	-.76	1.97	-.03	.701	-.006
<i>Total</i>					
Latina	5.70	1.70	.26	.001	.065**
Total violence exposure	.49	.12	.34	.000	.118**
DV exposure	1.10	1.99	.05	.583	-.004

Note. Results are reported for the final models. DV = domestic violence. Internalizing Behavior Total Adjusted $R^2 = .233$; Externalizing Behavior Total Adjusted $R^2 = .079$; Total Behavior Total Adjusted $R^2 = .179$.

* $p < .05$. ** $p < .01$.

Table E3

Significance Values for the Interaction Terms in the Moderation Models

Model	CBCL Internalizing	CBCL Externalizing	CBCL Total
Total violence model			
Total violence x domestic violence	.657	.334	.575
Total violence x maternal response	.260	.195	.379
Domestic violence x maternal response	.988	.533	.493

Note. CBCL = Child Behavior Checklist.

Table E4

Linear Regression Results for Maternal Responsiveness on Violence Exposure

Violence Exposure Variable	B	SE	β	<i>p</i>
Total Violence Exposure	-.04	.144	-.02	.803
Domestic violence exposure	1.40	2.42	.05	.564
Total Adjusted R^2	-.012			

Table E5

Results for Regressing Child Behavior Problems on Violence Exposure Measures and Maternal Responsiveness

Child Behavior	B	SE	β	<i>p</i>
<i>Internalizing</i>				
Latina	6.77	1.77	.29	.000
Total Violence Exposure	.41	.12	.26	.001
Domestic violence exposure	5.37	2.07	.20	.010
Maternal Responsiveness	-.07	.07	-.07	.321
<i>Externalizing</i>				
Latina	3.69	1.74	.18	.035
Maternal age	-.89	.596	-.13	.138
Total Violence Exposure	.27	.12	.20	.024
Domestic violence exposure	-.68	1.98	-.03	.731
Maternal Responsiveness	-.04	.07	-.05	.577
<i>Total</i>				
Latina	5.58	1.71	.26	.001
Total Violence Exposure	.49	.12	.34	.000
Domestic violence exposure	1.20	2.00	.04	.550
Maternal Responsiveness	-.05	.07	-.06	.472