

INTERGENERATIONAL CONTINUITY OF ADVERSE CHILDHOOD
EXPERIENCES IN HIGH-RISK FAMILIES

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Abstract

Despite the wealth of research on adverse childhood experiences (ACEs) in nationally representative samples and intergenerational maltreatment in high-risk families, no study has merged these concepts to examine the intergenerational continuity of ACEs in severely impoverished families. This study investigated intergenerational ACEs and the role of risk, promotive, and protective factors, including adulthood adversity, harsh versus effective parenting, and social support quality, in homeless parents and 4-6-year-old children. Parents ($n = 107$; $M = 31.27$ years, $SD = 6.59$, range = 20.01-49.47 years; 63.6% African-American, 12.1% Caucasian, 8.4% Biracial/Multiracial, and 15.9% other) completed the ACEs survey developed by the Center for Disease Control and Prevention; measures on adulthood adversity, child ACEs, and social support; and observational assessments of parenting. Path analyses revealed direct effects of parent ACEs to child ACEs and partial mediation of adulthood adversity, but not harsh parenting, for intergenerational continuity of ACEs. Rates of prospective ACEs continuity were approximately 80%. Parental social support was a promotive factor for lower child ACEs. Findings emphasize the role of negative early experiences in the intergenerational continuity of ACEs, above and beyond adversity in adulthood. Providing resources to high-risk parents with histories of ACEs and improving parental support from partners may be promising strategies to deter generational trauma.

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Intergenerational Continuity of Adverse Childhood Experiences in High-Risk Families

The effects of trauma across lifetimes and subsequent generations have been extensively studied for decades in two major avenues of research. In the maltreatment literature, a sharp understanding of the intergenerational transmission of maltreatment has been developed and refined to be sensitive to population characteristics, study designs, and methodological caveats (Egeland, Jacobvitz, & Sroufe, 1988; Ertem, Leventhal & Dobbs, 2000; Pears & Capaldi, 2001; Thornberry, Knight, & Lovegrove, 2012; Widom, 1989). Broadly stated, rates of intergenerational transmission of maltreatment tend to be modest, closely related to characteristics of the sample under investigation, and lower than the rates at which maltreated parents do not maltreat their own children (Ertem et al., 2000; Hunter & Kilstrom, 1979; Kaufman & Zigler, 1987). More recently, the effects of childhood trauma on lifetime mental and physical health problems have been investigated by the Adverse Childhood Experiences (ACEs) studies in collaboration with the Center of Disease Control and Prevention (CDC, 2013a; Felitti et al., 1998; Whitfield, 1998). In a series of nationally-representative studies of more than 17,000 U.S. adult health maintenance organization (HMO) members that began in 1995, the ACEs studies have documented that greater exposure to childhood trauma and family dysfunction predicts adolescent and adulthood psychological disorders, high-risk behaviors, and earlier morbidity (e.g., Dube, Felitti, Dong, Giles, & Anda, 2003; Edwards, Holden, Felitti, & Anda., 2003; Felitti et al., 1998; Schilling, Aseltine, & Gore, 2007).

The ACEs score is a cumulative risk index based on ten possible risk items that occur before age 18. These items include parental domestic violence, psychopathology, substance use, incarceration, and divorce/separation in addition to five types of child

maltreatment: physical, sexual, and verbal abuse, and physical and emotional neglect (CDC, 2013a, b). The association between ACE scores and health and well-being depicts a dose-response relationship (Garnezy, 1983; Masten & Narayan, 2012; Rutter, 1999) in multiple ways, such that higher cumulative ACE scores relate to greater risks for, and greater numbers of, more severe adulthood problems (Anda, 2012, Dube et al., 2003; Edwards et al., 2003; Hillis et al., 2004). Rates of ACEs are generally stable across time and cohorts and are unaffected by changes in social or secular trends (Dube, Williamson, Thompson, Felitti, & Anda, 2004). Generally, respondents are willing to endorse ACEs (Edwards, Dube, Felitti, & Anda, 2007). Furthermore, ACEs are prevalent. Only a third of HMO study participants reported zero ACEs, whereas two-thirds of participants reported at least one ACE and one tenth of participants reported five or more ACEs (Anda, 2012, CDC, 2013c). Finally, although ACEs are predominantly derived retrospectively, they are considered to be a valid indicator of relatively objective traumatic life events, as shown in a validity study of retrospectively recalled adverse experiences. In that study, retrospective reports that a traumatic event, such as an episode of physical or sexual abuse, had occurred were deemed to be more reliable than retrospective reports of the details of such events (Hardt & Rutter, 2004).

Despite these major developments in the trauma literature, there are numerous gaps in this research base. Little is known about the continuity and discontinuity of trauma, beyond child maltreatment and inclusive of all ACEs items, across generations and in samples of severely disadvantaged, chronically impoverished families. For instance, studies utilizing the ACEs as an index of trauma have not examined rates of ACEs in impoverished families, intergenerational continuity of ACEs, mediating

processes that account for continuity or discontinuity of ACEs from parents to children, or the effects of ACEs on parenting quality. Although chronic, cumulative trauma is highly prevalent in the developmental histories of parents in severely impoverished families (Bassuk, Perloff, & Dawson, 2001; Browne & Bassuk, 1997; Goodman, 1991; Herman, Susser, Struening, & Link, 1997), less is known about the processes by which parental trauma, such as ACEs, predicts child trauma across generations and affects parent and child functioning.

Furthermore, the term “intergenerational transmission,” as applied to the observation that some parents who have experienced maltreatment or trauma have children who become maltreated or traumatized, may imply that factors responsible for transmission stem from within the parent. However, this notion can be refuted in at least two ways. Most parents who are maltreated do not maltreat their children (Ertem et al., 2000; Hunter & Kilstrom, 1979; Kaufman & Zigler, 1987). Historical and contemporary research indicates that the strongest predictor of generational maltreatment is a constellation of contextual factors including environmental, social, and sociodemographic risks, in addition to parental characteristics (Belsky, 1984; Belsky & Jaffee, 2006; Egeland et al., 1988). Thus, the current study adopts the term “intergenerational continuity” rather than “intergenerational transmission” of trauma to argue that pathways from trauma in parents’ childhoods to their children’s childhoods may be best characterized by a combination of risk factors, including ACEs in the family of origin; parental agency in behavior, relationships and experiences across development; and contextual influences, such as poverty. The present study places specific emphasis on the continuity of ACEs in severely impoverished families, as it would be expected that rates

of ACEs would be particularly high across generations in contexts where parents were reared in poverty and continue to experience chronic poverty into adulthood and parenthood (Browne, 1993; Harper, Marcus, & Moore, 2003).

In severely economically deprived families, chronic and acute poverty frequently co-occur with cumulative trauma, often rendering families ineffective in securing protective resources, yet vulnerable to ongoing adversity (Browne, 1993; Haber & Toro, 2004; Hausman & Hammen, 1993; Milburn & D'Ercole, 1991; Rog & Buckner, 2007). Thus, families with these dual risks likely face particularly precarious odds against child and family adaptation and are particularly deserving of research and policy efforts to understand and deter processes that propagate intergenerational continuity of cumulative trauma. The purpose of this study was to examine the intergenerational continuity of parental trauma in childhood, conceptualized by ACEs, to child trauma and maladjustment in severely disadvantaged families; the mediating roles of adult adversity and parenting quality along these pathways; and the protective processes that may buffer the intergenerational continuity of trauma from parents to children.

Theoretical Perspectives on Developmental Continuity of Trauma

Multiple compatible theoretical perspectives provide a foundation from which to study pathways of intergenerational continuity of trauma. According to the developmental psychopathology (DP) perspective, early experiences and environments play an integral role in shaping pathways to future adaptation and maladaptation by organizing expectations about social behavior, perceptions of safety within relationships and families, and the foundations of emotion-and behavior-regulation skills (Bowlby, 1969; Rutter, 1989; Sameroff, 2000; Sroufe, Egeland, Carlson, & Collins, 2005). As an

equally valuable counterpart to early experiences, cumulative experiences throughout the lifespan continue to shape and constrain developmental pathways and afford the ability to observe continuities and discontinuities in developmental trajectories (Cicchetti & Toth, 2009; Masten, 2006; Rutter, 2013; Sroufe, 1997, 2013).

Following the DP perspective and incorporating social-interaction learning and social-information processing perspectives (Dishion & Patterson, 2006; Dodge, Bates, & Pettit, 1990), early environments characterized by trauma and dysfunction, defined here as all items comprising the ACEs, would increase children's exposure to deleterious environmental influences and compromise effective emotion regulation and conflict resolution during childhood (Cicchetti & Valentino, 2006; Davies & Cummings, 1994; Margolin, 2005; Moffitt & the Klaus-Grawe 2012 Think Tank, 2013). Subsequently, it would be expected that trauma-exposed youth would be at higher risk for internalizing expectations of violence and aggression as characteristics of family environments (Bowlby, 1969; Cicchetti & Valentino, 2006; Dishion & Patterson, 2006; Sroufe et al., 2005). In turn, they may be more apt to perceive, react to, and apply social behaviors involving interpersonal harshness, aggression, and violence to subsequent behavior and relationships, thereby strengthening pathways to maladaptation and potential for future trauma (Davies & Martin, 2013; Dishion & Patterson, 2006; Dodge et al., 1990; Moffitt, 1993; Sroufe et al., 2005; Straus, 1979). While human development following early negative experiences is probabilistic rather than deterministic for future maladaptation, opportunities for positive influences to take root would become less accessible as negative behaviors and relationships accumulate over time (Cicchetti & Toth, 2009; Moffitt, 1993; Sroufe, 1997, 2013).

The progression and accumulation of experiences has been differentiated into two distinct types of developmental continuity of human functioning. Passive environmental influences have been described as cumulative continuity, while active, transactional influences have been described as interactional continuity (Caspi, Bem, & Elder, 1989). In the case of continuity of trauma, chronic exposure to environments where trauma occurs would reflect cumulative continuity, and relationships and behaviors that reinforce the likelihood of being involved in, or victimized by interpersonal trauma and dysfunction would reflect interactional continuity. Both types of continuity are compatible and could co-occur within individuals, families or socioeconomic groups (Caspi et al., 1989; Conger, Schoefield, Neppl, & Merrick, 2013). Across many contexts, both types of continuity have been shown to reinforce patterns of adaptation and maladaptation over the lifespan and across generations, and also may apply to developmental pathways that are characterized by competence (Conger et al., 2013; Scarr & McCartney, 1983).

Despite lawful continuity over time, which is a hallmark of the DP perspective (Cicchetti & Toth, 2009; Sroufe & Rutter, 1984; Sroufe, 2013), many caveats remain when applying concepts of cumulative and interactional continuity to intergenerational continuity of trauma. As acknowledged above, the majority of parents with family-of-origin maltreatment do not perpetrate maltreatment against their children (Ertem et al., 2000; Kaufman & Zigler, 1987; Straus, 1979). For example, one seminal study found that when maltreatment transmission rates were examined retrospectively (i.e., the number of children who were maltreated and who had a primary caregiver who had been maltreated), rates of intergenerational transmission of trauma appeared to be as high as

90%. When examined prospectively, however (i.e., the number of parents who were maltreated and subsequently maltreated their own children), the actual rate was closer to 18% (Hunter & Kilstrom, 1979). This observation is suggestive of the presence of multiple pathways following traumatic experiences and the potential for resilience processes to account for developmental discontinuities (Masten, 2006; Cicchetti & Rogosch, 1996).

In addition to DP and social learning perspectives, a resilience framework also informs understanding of child, parent, and family adaptation in the context of parental ACEs. Highly adverse or traumatic circumstances, although often destructive, may inform understanding of fundamental human strength (Cicchetti, 2010; Masten & Narayan, 2012). The capacities and limitations of human adaptive systems can be observed when trauma threatens the positive function or viability of an individual, yet the individual successfully adapts to, or overcomes, the stressors personally or for the benefit of offspring (Masten, 2011; Wright, Masten, & Narayan, 2013). Given that many parents who have experienced adversity or trauma display positive, adaptive functioning (Luthar, 2006; Masten, 2001), it is critical to understand what factors differentiate pathways of continuity of discontinuity following traumatic experiences such as ACEs. Numerous personal, relational, and environmental resources have been implicated as protective factors that deter intergenerational maltreatment (Belsky, 1984; Egeland et al., 1988; Jaffee et al., 2013). Thus, when identifying families or socioeconomic groups who might be particularly vulnerable to cumulative and interactional continuity of trauma, it is critical to also identify the types of environments in which intergenerational continuity of trauma is most likely to co-occur (Kaufman & Zigler, 1987; Straus, 1979).

Intergenerational Poverty and Trauma

Environments that are severely impoverished and deprived of resources may be particularly likely conditions where intergenerational continuity of trauma would occur, because in many ways, intergenerational poverty and intergenerational trauma are highly compatible (Harper et al., 2003). Investigators who study intergenerational poverty within families or socioeconomic groups have observed that trauma, such as violent conflict and maltreatment, are more likely to occur when resources are low and survival is prioritized (Corcoran, 1995; Foster & Brooks-Gunn, 2009; Harper et al., 2003). Broadly speaking, parents who struggle to meet basic needs of children because of severe poverty may expend their limited economic and emotional resources on survival needs rather than monitoring or protecting children in contexts where violence, maltreatment, or exploitation are likely to occur (Conger & Donnellan, 2007; Egeland et al., 1988; Harper et al., 2003; Straus, 1979). Social resources, that conceivably could buffer parents from isolation and provide children with contextual support, also tend to be limited in conditions of ongoing poverty and trauma (Appleyard, Egeland, & Sroufe, 2007; Berlin, Appleyard, & Dodge, 2011; Cicchetti & Lynch, 1993; Harper et al., 2003). Thus, environments of co-occurring poverty and trauma would be particularly favorable contexts for intergenerational continuity of trauma to develop.

Across development, pathways of poverty and trauma often become intertwined. Parental trauma from childhood, including multiple types of maltreatment and substance use in the family of origin, has been found to predict debilitating poverty, such as homelessness (Herman et al., 1997; Stein, Leslie, & Nyamathi, 2002). In a large study of homeless families, two thirds of parents experiencing their first homeless episode

reported childhood physical abuse and one-third of parents reported sexual abuse. Those with multiple past homeless episodes reported even higher rates of previous trauma (Bassuk et al., 2001). Notably, however, the relations between child trauma and adult poverty do not only apply to parents experiencing homelessness. Homeless and low-income parents often report comparable levels of childhood trauma, including violence exposure, and physical and sexual assault (Browne & Bassuk, 1997; Goodman, 1991).

Parents reporting childhood histories of trauma, adult adversity, and ongoing poverty face the difficult position of remaining in poverty with limited options to improve conditions for themselves or their children (Browne, 1993; Harper et al., 2003; Hausman & Hammen, 1993). Their children typically have elevated rates of emotional and behavior problems (Hausman & Hammen, 1993; Masten, Miliotis, Graham-Bermann, Ramirez, & Neemann, 1993; Rog & Buckner, 2007). Notably, racial or ethnic characteristics have not been found to directly increase the risk of intergenerational trauma, such as maltreatment; rather, poverty itself more strongly accounts for these effects (Cicchetti & Valentino, 2006; Straus, 1979).

Two Conceptual Pathways of Trauma

Two developmental pathways reflecting continuity, lifecourse poverty and intergenerational poverty, distinguish the developmental progression of poverty and also translate well to understanding pathways of trauma. Lifecourse poverty reflects children reared in poverty who remain in poverty throughout adulthood, and intergenerational poverty reflects children reared in poverty who rear their own children in poverty (Harper et al., 2003). Adopting these distinctions, it would be expected that parents exposed to childhood trauma would be more likely to experience traumatic events in adolescence

and adulthood (Pratchett & Yehuda, 2011; Sroufe et al., 2005), reflective of lifecourse trauma. It would also be expected that particularly in conditions where resources and opportunities are scarce (Harper et al., 2003), parents exposed to childhood trauma would become parents of children with heightened trauma exposure.

Pathways of lifecourse and intergenerational continuity of trauma are empirically supported. Childhood trauma exposure prospectively predicts adulthood adversity, such as shallow support networks, affiliation with deviant counterparts, perpetration and victimization of violence, retraumatization, and elevated psychopathology (Ehrensaft et al., 2003; Lansford et al., 2002; Narayan, England, & Egeland, 2013; Moffitt et al., 2013; Widom, Czaja, & Dutton, 2013). These conditions would reflect lifecourse continuity of trauma and increase the odds that family environments would continue to be characterized by low resources, survival priorities and potentially, high risk of offspring trauma exposure (Caspi et al., 1989; Harper et al., 2003; Hausman & Hammen, 1993; Sroufe et al., 2005). The conditions that would be expected to propagate intergenerational continuity of trauma are described next, as they would be expected to be an extension of, and mediated by parents' lifecourse trauma in adulthood.

Mediating Risk Processes in the Intergenerational Continuity of Trauma

When identifying circumstances in which intergenerational continuity of trauma is present, it is critical to identify the specific risks and processes by which continuity may occur (Ehrensaft et al., 2003; Kaufman & Zigler, 1987; Narayan et al., 2013; Thornberry et al., 2012; Widom et al., 2013). A risk factor is a measurable predictor of a negative or undesirable outcome in human adaptive or competent functioning, regardless of whether it occurs in a negative or positive context (Masten, 2007; Sameroff, 2000).

For example, a childhood trauma, such as maltreatment, would be expected to directly increase the likelihood of subsequent maladjustment among a group of individuals in any context (Cicchetti & Valentino, 2006; Moffitt et al., 2013; Sroufe et al., 2005). A risk index, reflected by higher cumulative experiences of trauma in childhood, i.e., the ACEs score, is another way of operationalizing risk with a composited variable. Higher cumulative trauma on a risk index predicts poorer long-term personal maladaptation and greater likelihood of perpetrating trauma against offspring (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Wekerle, Wall, Leung, & Trocmé 2007).

Risk processes delineate how a risk factor or index may work to produce negative outcomes, either directly or indirectly through mediated pathways (Luthar, 2006; Masten, 2001; Rutter, 1989). An example of a mediating risk process would be the role of childhood exposure to violence in predicting adulthood involvement in violence directly, or indirectly through higher externalizing behavior in adolescence (Ehrensaft et al., 2003; Narayan et al., 2013). Reflected in this example and in other types of childhood trauma, risk processes may include direct links between a risk and an outcome or mediating risk factors within the broader risk pathway.

In the intergenerational pathways from parents' childhood trauma to their children's trauma, two distinct risk pathways are indicated by theory and empirical findings described above. First, child trauma could elevate the risk for adult adversity, which then poses risks for child trauma or adversity in the next generation. In this case, parents' cumulative adversity in adulthood, broadly including contemporaneous trauma, deviant behavior, and psychopathology would be expected to mediate the risk pathway of parent trauma to child trauma. According to past studies, adult adversity is retrospectively

predicted by a history of trauma, particularly in impoverished families (Goodman, 1991; Browne & Bassuk, 1997; Williams & Hall, 2009). Adult adversity also has been found to prospectively predict children's exposure to trauma, either directly via traumatic exposure to the whole family, or indirectly via the effects of parents' symptoms or impairment on children's functioning or the protection of children (Egeland et al., 1988; Pears & Capaldi, 2001; Yehuda, Halligan, & Grossman, 2001). Various types of adult adversity, including violence victimization, substance use, and internalizing psychopathology (depression, post-traumatic stress disorder) influence the pathways from parental history of trauma to offspring experiences of trauma (Pears & Capaldi, 2001; Thompson, 2006; Wekerle et al., 2007; Yehuda et al., 2001). Thus, the extent of parents' adulthood adversity would be a likely mediator in the intergenerational continuity of parents' ACEs and children's ACEs (Figure 1).

A second possible pathway for intergenerational continuity of trauma focuses on the mediating role of negative or harsh parenting linking parent trauma to child trauma, and in turn, child maladjustment. There is strong evidence that parents' childhood exposure to trauma, including maltreatment and violence, predicts more harsh treatment of offspring (e.g., Belsky, Conger, & Capaldi, 2009; Conger et al., 2013; Herrenkohl, Herrenkohl, & Toedter, 1983; Newcombe & Locke, 2001; Widom, 1989). Conceptually, family stress theories have proposed that when parents are emotionally and economically stressed by poverty, psychopathology, or experiences of trauma, there is a greater risk for this stress to spill over and affect parenting (Conger & Donnellan, 2007; Deater-Deckard, 1998; Hausman & Hammen, 1993). Particularly under conditions of severe poverty, when struggling to secure basic needs becomes overwhelming, parents face an elevated

risk for harsh parenting (Dix, 1991; Straus, 1979). Empirical support for these spillover effects is evident in studies finding that if parents were maltreated as children and were more harsh or hostile towards their own children, they also were at higher risk for perpetrating maltreatment (Egeland et al., 1988; Newcombe & Locke, 2001).

Parental harshness and hostility may increase the risk for children's experiences of maltreatment, other forms of trauma, and child maladjustment. This may be due to higher risk for maltreatment in families where harshness or hostility occurs (Paz-Montes, de Paúl, & Milner, 2001; Cicchetti & Howes, 1991) or the lack of positive parenting behavior that might otherwise buffer children from experiencing trauma or displaying maladjustment (Narayan, Sapienza, Monn, Lingras, & Masten, 2014; Sroufe et al., 2005). Thus, the current study tested the mediating effects of negative parenting practices, in addition to the mediating role of adult adversity, as a potential intergenerational risk pathway linking parent ACEs to child ACEs.

Promotive and Protective Factors to Buffer the Continuity of ACEs

As a counterpart to the mediating risk processes that may perpetuate intergenerational continuity of ACEs, the current study also considered positive influences, such as promotive or protective factors, that may shield children of parents with ACEs. Promotive factors directly predict positive outcomes regardless of risk level, whereas protective factors moderate the effects of risk (Wright et al., 2013; Sameroff, 2000). Examples of promotive factors, generally favorable for positive outcomes in human development, would be economic resources, safe neighborhoods, good health, or good health care (Masten, 2001; Sameroff, 2000). In regards to ACEs, a promotive factor would be any influence that directly predicts lower likelihood of experiencing ACEs,

such as a safe, nonviolent home or community. Alternatively, a protective factor would be expected to moderate the link between adversity and risk by mitigating the effects of risk on human functioning, specifically when the level of adversity rises (Masten, 2007; Rutter, 1987). An example of a protective factor is a tornado shelter, which would be particularly important when a natural disaster is forecasted but less needed when the weather is clear. Finally, some factors in children's lives can function as both promotive and protective factors. For instance, parental warmth promotes positive development in any context but has been found to be especially effective in buffering child adjustment when environmental adversity is high (Herbers et al., 2011; Kim-Cohen, Moffitt, Caspi, & Taylor, 2004; Narayan et al., 2014).

Despite the lack of research on the intergenerational continuity of ACEs, studies on risks for intergenerational maltreatment have identified key promotive and protective factors, including positive parenting practices and social support (Schofield, Lee, & Merrick, 2013). Both of these factors have strong implications for this study. In studies of parents who have experienced maltreatment in childhood, aspects of positive parenting (emotional warmth, satisfaction with parenting, enjoyment of the child) distinguished maltreated parents who did versus did not maltreat their own children (Jaffee et al., 2013; Thornberry et al., 2013). These findings echo the conceptual literature on resilience by accentuating the importance of parental warmth for child resilience in contexts of extreme poverty (Luthar, 2006; Masten, 2001).

In addition to positive parenting, evidence also suggests that social support may deter child maltreatment or trauma in families with parental trauma histories. Historically, evidence in the maltreatment literature emphasizes the importance of

support from the romantic partner or the child's father (Egeland et al., 1988; Hunter & Kilstrom, 1979). Contemporary research on deterring intergenerational continuity of maltreatment also illustrates how the presence of a supportive romantic partner can be a promotive or protective factor that differentiates maltreated parents who do not maltreat their children from those who do (Dixon, Browne, & Hamilton-Giachritsis, 2009; Jaffee et al., 2013; Thornberry et al., 2013). Taken together, these findings suggest that the presence of positive parenting skills and the extent of social support, particularly from a romantic partner or co-parent, may be integral factors in buffering children from experiencing ACEs and decreasing intergenerational continuity of trauma.

The Current Study

The current study was designed to address the gaps on intergenerational continuity of trauma, defined as the ACEs, in severely disadvantaged families. The aims were to examine (a) two key pathways in the intergenerational continuity of trauma, namely, from parents' family-of-origin ACEs to adulthood adversity (lifecourse trauma pathway), and from family-of-origin ACEs to child ACEs (intergenerational trauma pathway); (b) the mediating roles of parents' adversity in adulthood and harsh parenting of children in the intergenerational pathways from parent ACEs to child ACEs; and (c) the promotive or protective effects of positive parenting practices and social support in reducing or buffering generational continuity of trauma. Given that the crux of this study was to examine how trauma affects development across generations, study aims regarding trauma continuity also examined the effects of children's ACEs on their concurrent socioemotional maladjustment (Figure 1). Study aims regarding promotive or protective effects also examined parental involvement in Child Protective Services (CPS)

as an additional consequence of parental ACEs that would reflect intergenerational continuity of trauma.

Hypotheses. Consistent with the first aim, it was hypothesized that parent trauma in childhood (parent ACEs) would be significantly related to higher rates of adult adversity (lifecourse pathway), and both parent ACEs and adult adversity would be significantly associated with higher child ACEs (intergenerational pathway).

According to the second aim, it was hypothesized that both adult adversity and harsh parenting, operationalized in two ways as negative expressed emotion (EE) and harsh/hostile observed parenting behaviors, would each independently partially mediate the pathway between parent ACEs and child ACEs. In turn, child ACEs were expected to predict child socioemotional maladjustment, including behavioral and peer problems at school, independent of the effects of harsh parenting. Partial, rather than full mediation of parent ACEs to child ACEs was anticipated, with significant direct effects from parent ACEs to child ACEs, given the salience of early experiences on later adaptation.

Finally, consistent with the third aim, it was anticipated that positive parenting practices and the presence of high quality parental social support from a romantic/co-parental figure would buffer the risks associated with intergenerational continuity of trauma by moderating the relations between parental ACEs and child ACEs, and parental ACEs and CPS involvement.

Method

Participants

Participants were 107 families of primary caregivers ($M = 31.27$ years, $SD = 6.59$, range = 20.01-49.47 years; 63.6% African-American, 12.1% Caucasian, 8.4%

Biracial/Multiracial, and 15.9% other) and 4-6-year-old children (55% male; $M = 5.88$, $SD = .64$, range = 4.17-6.99 years; 65.4% African-American, 4.7% Caucasian, 23.4% Biracial/Multiracial, 6.5% other). They were recruited during the summer and fall of 2012 from two emergency homeless shelters for families in a Midwest metropolitan area. These two shelters provide housing to the majority of homeless families in this metropolitan area and the majority of homeless children who attend schools in the local metropolitan districts. Children and primary caregivers (88.9% biological mothers, 5.6% biological fathers, 3.7% grandparents, 1.8% other) participated in the current study as part of a larger study on parenting, executive functioning, and school readiness for kindergarten or first-graders. Families were considered eligible if they had been residing the shelter for at least three consecutive nights to allow for an adjustment period, parents and children spoke English well enough to understand instructions, and children were without identified developmental delays.

Procedure

The institutional review board at the University of Minnesota approved all study procedures. Parents provided informed consent for themselves and their children prior to enrolling in the study. Parents participated in two-hour individual interviews that included questionnaires on experiences of trauma, including ACEs, adult adversity, and their children's ACEs; demographic information; previous episodes of homelessness; and mental health. Children independently completed a two-hour assessment of cognitive and behavioral tasks. Then, parents and children completed a brief (20-min), structured sequence of observational tasks and games that were adapted, abridged, and validated for use with this sample (Forgatch & DeGarmo, 1999; Gewirtz, DeGarmo, Plowman,

August, & Realmuto, 2009; Narayan, Herbers, Plowman, Gewirtz, & Masten, 2012) and subsequently coded for parent and child behavior. Tasks included two five-min problem solving discussion in which dyads discussed two family issues, one selected by the parent and one selected by the child during the individual interviews; and three collaborative teaching tasks, during which parents led children through a guessing game, a labyrinth game, and geometric puzzles (DeGarmo, Patterson, & Forgatch, 2004).

Parents provided consent for schoolteachers to be contacted approximately three months after participation about children's academic and socioemotional functioning at school. Teachers were contacted via school principals, who received and distributed brief teacher questionnaires about students who had taken part in a study of residentially mobile families. As compensation for study participation, parents and teachers received honoraria, and children received small toys.

Measures: Intergenerational Continuity and Mediator Models

Parent adverse childhood experiences (parent ACEs). As part of the parent interview, primary caregivers were administered the Adverse Childhood Experiences scale (CDC, 2013b). Using this scale, parents endorsed whether ten items had occurred between ages 0 to 18 years. They were not probed for details about the experience if they positively endorsed an item. Consistent with the usual composite scoring for this measure (CDC, 2013b), the total number of endorsed items was summed to derive a total ACEs score out of 10 for each parent.

Adulthood adversity. During the parent interview, parents were also administered a series of questionnaires, including the Family Information Questionnaire, the K6 Scale for Serious Mental Illness (Kessler et al., 2003; National Comorbidity

Survey, 2005), the Life Events Questionnaire-Parent Version (LEQ-P), and the Lifetime Events Form-Parent Version (LTE-P) (Masten et al., 1993; Masten, Neemann, & Andenas, 1994). Questions from each of these forms were compiled to generate a list of adverse adulthood experiences that paralleled the ACEs but pertained to adulthood. These items included verbal abuse (a reason for coming to the shelter was relationship problems), physical or sexual abuse (violence victimization, such as assault, kidnapping, or other injury at or after age 18), physical safety needs not met (a reason for coming to the shelter was violence in the neighborhood or substandard or unsafe housing), divorce or separation (the parent had been divorced or separated at or after age 18), domestic violence (a reason for coming to the shelter was a battering or abusive relationship), substance use (a reason for coming to the shelter was a drinking or drug problem, or the parent had hospitalized for a problem with drugs and alcohol at or after age 18), mental illness (parents endorsed a score of at least 6 on the K6 scale), and incarceration (the parent had been incarcerated at or after age 18). Positively endorsed items were summed. Of note, emotional neglect in adulthood was not measured, and adulthood physical abuse and sexual assault were combined into one item, resulting in a total possible adulthood adversity score of eight.

Child adverse childhood experiences (child ACEs). Using a child version of the LTE-C that contained questions about stressors relevant to the lives of children (Masten et al., 1993), parents endorsed whether children had experienced a series of adverse experiences from birth to present that paralleled items on the parent ACEs. These experiences included physical or sexual abuse (over his/her lifetime, the child was the victim of physical violence, including serious injury or rape), other maltreatment (the

child was involved with Child Protective Services during his/her lifetime), parental divorce or separation (over his/her lifetime, the child experienced the divorce or permanent separation of his/her parents), domestic/parental violence (over his/her lifetime, the child saw a parent injured by another person or lived in a home with fights or severe relationship problems between adults taking care of him/her), parental substance use (over his/her lifetime, the child lived with a parent who had a serious alcohol or drug problem), parental mental illness (over his/her lifetime, the child lived with a parent who had a serious mental illness), and parental incarceration (over his/her lifetime, the child had a parent who was in prison). Positively endorsed items were summed. Of note, physical and sexual abuse, and any child CPS involvement were collapsed for one item reflecting child maltreatment, which resulted in a total possible child ACEs score of six.

Harsh parenting: Observed harshness. Two raters coded the parent-child interactions for harsh parenting, comprised of authoritarian, oppressive, hostile, sarcastic, rejecting, or physical parenting behaviors. Ratings reflected coder impressions across the entire 20-min parent-child interaction tasks and were comprised of 6 items, such as “Overly strict, authoritarian, and oppressive,” “Uses physical restraint or other physical means of managing behavior” and “Uses sarcastic, mocking, or contemptuous language or behavior” (DeGarmo et al., 2004). The six items showed good internal consistency ($\alpha = .76$) and were composited into one variable of observed harsh parenting.

Harsh parenting: Expressed negativity. Negativity was rated from the Five-Minute Speech Sample (FMSS; Magaña-Amato, 1993), during which parents were audiorecorded as they spoke about their child and the parent-child relationship for five minutes. Two independent raters scored negativity on a 0-5-point scale ($M = 1.35$, $SD =$

1.08) based on the entire speech sample for evidence of a global tone or statements that were rejecting, harsh, disparaging, or critical. The exact scoring system developed by Caspi and colleagues (Caspi et al., 2004) was utilized, as it has been found to demonstrate good psychometric properties and concurrent validity in a similar sample of homeless families (Narayan et al., 2012). Raters had good agreement (intraclass correlation coefficients, $ICC = .84$) and averaged their scores.

Child socioemotional adjustment: Peer problems. Teachers rated children's peer problems from the Health and Behavior Questionnaire (HBQ; Armstrong & Goldstein, 2003). The HBQ is comprised of two subscales, Peer Acceptance/Rejection (eight items, e.g., "Has lots of friends at school" or "Is not much liked by other children") and Bullied by Peers (three items, e.g., "Is teased and ridiculed by other children"), which have shown good psychometric properties and predictive validity in a similar sample (Narayan et al., 2014). All items on both subscales are rated on 1-4-point scales from "Not at all like [the child] to Very much like [the child]". The Peer Acceptance/Rejection ($M = 3.25$, $SD = .68$) and Bullied by Peers ($M = 1.25$, $SD = .47$) subscales were modestly associated ($r = .46$, $p < .01$) and were averaged (Peer Acceptance/Rejection was reverse scored) to form Peer Problems ($\alpha = .73$ for all 11 items).

Child socioemotional adjustment: Behavior problems. Teachers rated children's behavior problems from the Strengths and Difficulties Questionnaire (SDQ) teacher-report form, a well-validated behavioral screening questionnaire with good concurrent validity with parent reports of child behavior and discriminative validity for psychological problems (Goodman, 1997). Teachers completed items (five per subscale) on 0-2-point scales (*Not true* to *Certainly true*), and then items were summed for a

possible score out of ten on each subscale (Emotional Problems: $M = 1.95$, $SD = 2.02$, range = 0-7; Conduct Problems: $M = 2.23$, $SD = 2.58$, range = 0-9; and Hyperactivity: $M = 4.23$, $SD = 3.28$, range = 0-10). As is standard procedure for scoring the measure, the three subscales ($\alpha = .63$) were summed together ($M = 8.41$, $SD = 6.08$, range = 0-24) to form one total score for Behavior Problems (the Peer Problems subscale was excluded).

Covariates. In the path analyses, parent age and parental negativity about self were controlled on the paths that included parent ACEs and parent adulthood adversity, and child age and gender were controlled on the paths that predicted children's socioemotional problems. Parental negativity about self was coded from the audio-recorded FMSS (Magaña-Amato, 1993), during which parents spoke about themselves for five minutes. Negativity about self was coded by two independent raters on 0-5-point scales ($M = 1.69$, $SD = 1.07$). This scale was adapted from the previously validated scale for negativity (Caspi et al., 2004) to pertain to parents' EE about themselves. Raters had good agreement ($ICC = .84$) and averaged their scores.

Measures: Promotive and Protective Effects Models

Observed effective parenting. Two independent raters coded the parent-child interaction tasks for four parenting variables that have been identified as key constructs in normative parenting research and in high-risk families (Forgatch & DeGarmo, 1999; Gewirtz et al., 2009; Narayan et al., 2012). These four variables, derived from the standardized coding criteria developed by the Parent Management Training-Oregon model (DeGarmo et al., 2004; Forgatch & DeGarmo, 1999) included positive involvement ($ICC = .88$, $\alpha = .92$), rated from the entire interaction for qualities of positive affect, affection, empathy, and support towards the child; problem-solving (ICC

= .85, $\alpha = .87$), rated from the two discussions for reasonable, collaborative, and mutually satisfactory conversations and solutions; skill encouragement ($ICC = .77$, $\alpha = .89$), rated from the teaching tasks for qualities such as scaffolding, positive reinforcement, and ability to break task into age-appropriate, clear, and manageable steps; and inept coercive discipline (reverse scored; $ICC = .90$, $\alpha = .82$), rated from the entire task for ineffective, weak or erratic limit-setting, nagging or pleading for compliance, or lack of follow-through. The four parenting constructs were z-scored and then composited to form one overall effective variable due to modest correlations between all variables ($r = .49-.68$, $p < .01$), a procedure that has been used in other samples (Forgatch & DeGarmo, 1999; Narayan et al., 2012).

Social support quality. To assess satisfaction of support with a romantic/co-parental figure, parents completed an adapted version of the Social Support Questionnaire—Short Form (SSQ; Sarason, Sarason, Shearin, & Pierce, 1987). The SSQ contains six scenarios, such as “Who can you really count on to be dependable when you need help?” Respondents are instructed to indicate how many people (e.g., mother, partner, friend, child) fit this description and to what degree they feel that that this support is adequately provided on a six-point scale of *Very satisfied* to *Very dissatisfied*. This study focused on quality of perceived support, which has been suggested to be more predictive of positive family adaptation than quantity of support in very impoverished families (Shinn, Knickman, & Weitzman, 1991). For the current study, parents responded to an additional question added to the SSQ, “How satisfied as you with the support from [child’s] father?” Given the distribution of these responses with the majority of parents indicating *Very dissatisfied* ($n = 43$) or *Very satisfied* ($n = 33$), this question was

dichotomized into “not satisfied” or “satisfied.” In addition, because many parents tended to have children with numerous fathers, it was not necessarily the case that lack of support from the target child’s father resulted in low quality support for the parent. Thus, an additional item asked earlier in the interview, “Are you currently living with a partner?” also was included in this variable. Responses were composited on a 0-2 point scale of *Not satisfied with target child’s father support and not living with a partner*, *Either satisfied with father support or living with a partner*, and *Satisfied with father support and living with a partner*.

Child protection services involvement. During the interview, parents responded to a question about whether they had ever been involved with Child Protective Services (CPS) as a parent. To preserve positive rapport and minimize suspicious or defensive sentiments among participating families, parents were only asked to indicate a binary response and were not probed for any details. The current variable was dichotomous (no CPS involvement versus CPS involvement).

Data Analytic Plan

Descriptive data. For the path analyses, all parent ACEs or adult adversity involving maltreatment or assault (experiences of verbal, physical, or sexual abuse, or emotional or physical neglect) were collapsed into a binary variable before summing total ACE scores. This was done to compensate for limitations in assessing maltreatment subtypes in adulthood and in children and to avoid over-inflating the effects of parental maltreatment from the ACEs on child ACEs. As a result, for the path analyses parent ACEs, adult adversity, and child ACEs ranged from possible scores of zero to six.

Path analyses. Three hierarchically nested models were examined and compared, using path analyses in Mplus Version 7.0 (Muthén & Muthén, 1998-2013) to test the direct or indirect effects of parent ACEs on child ACEs and child socioemotional problems through adult adversity and harsh parenting. The first model (Model 1, Figure 2a, “Double Partial Mediation Model”) included both mediating risk processes (parent ACEs to child ACEs through adult adversity and through harsh/negative parenting). Both risk processes were partially mediated pathways, as direct paths from parent ACEs to all key variables (adult adversity, both aspects of harsh parenting, child ACEs and child socioemotional problems) also were included. The second model (Model 2, Figure 2b, “Single Partial Mediation Model”) only included one partial mediating risk process (parent ACEs to child ACEs through adult adversity), as well as specific direct effects of parent ACEs on child ACEs, adult adversity, and harsh parenting. The third model (Model 3, Figure 2c, “Single Full Mediation Model”) examined a fully mediated risk process (parent ACEs to child ACEs through adult adversity) with no other direct effects from parent ACEs. All three models included direct paths from harsh and negative parenting and child ACEs to children’s socioemotional problems because there were not specific hypotheses about the relative strengths of these three proximal risks for children’s socioemotional problems.

In terms of covariates, parental negativity about self and parent age were intercorrelated and controlled on all paths in which parent ACEs predicted adult adversity or either type of parenting. Parental negativity was controlled to account for the potential of reporter bias, given that parents reported on their ACEs, adult adversity, and child ACEs. Parental age was also controlled to account for the possibility that age may covary

with the number of adverse experiences in parents had adulthood. Child sex and age were controlled on all paths predicting to child behavior and peer problems. Finally, shelter site was also controlled on all paths in all models, given that participating families stayed in one of two homeless shelters.

The Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root-Mean-Square Residual (SRMR) were used to determine acceptable model fit. Consistent with standard criteria for structural equation models, an acceptable fit was considered to be a $CFI \geq .90$ and a RMSEA (or SRMR) $\leq .08$, and a good fit was considered to be a $CFI \geq .95$ and an RMSEA (or SRMR) $\leq .05$ (Hoyle, 1995; McDonald & Ho, 2002). Model comparisons across all path models were conducted via chi-square difference testing (Muthén & Muthén, 1998-2013). On all analyses, including indirect effects, bootstrapped standard errors in Mplus were used to correct for non-normality (Preacher & Hayes, 2008).

Intergenerational continuity analyses. Rates of intergenerational continuity of ACEs were determined by examining the numbers of parents with any ACEs and the number of children with any ACEs. Both child ACEs and parent ACEs were collapsed into binary variables of absence of any ACEs or presence of at least one ACE. These analyses mirrored that of Hunter and Kilstrom (1979), who showed that the accurate rate of intergenerational continuity reflected the number of parents who had experienced trauma and had children who experienced trauma. In the present study, the total number of parents with any ACEs was the denominator and the number of these parents who had children with any ACEs was the numerator.

Protective effects models. The protective factors were tested across two outcomes (child ACEs and parental CPS involvement). Both protective factors involved continuously distributed moderators. They were mean-centered and multiplied by parent ACEs, also mean centered, to create the interaction terms. Hierarchical linear regressions were utilized for the models predicting to child ACEs, and binary logistic regressions were utilized for the models predicting to CPS involvement. All regressions were examined for influential cases according to Cook's d (Cook & Weisberg, 1982; Rawlings, 1988).

Missing data. The amount of overall missing ranged from approximately 0% to 6% on all variables except for children's socioemotional problems, which was approximately 24%. Only 83 children of 107 children could be located in schools in the fall, despite ongoing assistance from shelter staff and school administrators. Across the entire dataset, the amount of missing data was less than 1%, which is consistent with findings from similar samples (Masten et al., 2012). To account for missingness, full information maximum likelihood (FIML) estimation in Mplus was utilized for parameter estimation (Muthén & Muthén, 1998-2013). This approach makes use of all the data in the dataset and generates unbiased parameter estimates for data missing at random or missing completely at random (Graham, Cumsille, & Elek-Fisk, 2003; McDonald & Ho, 2002). Independent t-tests indicated that no significant differences on parent ACEs, adversity, age, negativity on self or child, harshness, or child ACEs between families who had teacher data on children versus those who did not.

Results

Descriptive Characteristics of the Sample

Within this sample of 107 homeless families, 72 (67.3%) of parents had previously experienced a homeless episode. Of these 72 parents, all had experienced at least one previous homeless episode as an adult, after age 18 ($M = 3.46$, $SD = 3.48$, range = 1-20), and 25 parents had experienced a previous homeless episode as a child ($M = 1.25$, $SD = 2.22$, range = 0-10). Furthermore, 43 parents (40.2%) reported that their child had experienced a previous episode of homelessness, with many of these children experiencing multiple previous episodes ($M = 2.99$, $SD = 2.77$, range = 1-15) beginning at a very young age ($M = 2.04$, $SD = 1.73$, range = 0-6 years). In terms of additional parental risk characteristics, 44 (41.1%) of parents were less than 18 years old when their first child was born, 49 (45.8%) parents had four or more children, 26 (24.3%) had less than a high school education, and 83 (77.6%) were currently unemployed.

Descriptive Statistics of ACEs

ACEs were highly prevalent in current sample of parents (Table 1) and markedly more prevalent than in the national ACEs study of U.S. adults (Table 2). Over 80% of current parents had experienced at least one ACE, although no parent experienced all ten ACEs. According to Table 2, the most common ACE in this sample was emotional neglect (51.4%) followed by parental divorce/separation (48.9%) and substance use (43.9%). Conversely, in the original ACEs study, the most common ACE was physical abuse (28.3%) although parental substance use (26.9%) and parental divorce/separation (23.3%) also were in the top three most prevalent ACEs (CDC, 2013c, Table 2). Every ACE was more prevalent in the current sample of parents than in the original ACEs study of adults. Approximately one-third of the current parents had experiences of verbal abuse (34.6%), physical abuse (32.7%), or sexual abuse (31.8%) during childhood, and

approximately two-thirds (64.9%) of parents had experienced at least one of the five types of maltreatment (Table 2). Notably, in the current sample of parents, it was more common to endorse any one of the ten ACEs than to endorse no ACEs, evident by the higher prevalence of each ACE item ($\geq 17.8\%$ for all items) than the prevalence of no ACEs (15.0%). Alternatively, in the original ACEs study, the most prevalent response was to have experienced no ACEs (36.1%), rather than to have experienced any ACE at all (CDC, 2013c).

Bivariate correlations for all variables in the path analyses are presented in Table 3. Parent ACEs were significantly associated with adult adversity ($r = .29, p < .01$) and child ACEs ($r = .42, p < .01$), and adult adversity and child ACEs also were significantly associated ($r = .47, p < .01$). Table 4 presents descriptive information on individual ACE items for parent ACEs, adult adversity, and child ACEs. For instance, 69 parents (64.9%) reported some type of childhood maltreatment, 57 parents (53.2%) reported an assault in adulthood (after age 18), and 23 parents (21.5%) reported some type of lifetime maltreatment of their child.

Observed effective parenting was not significantly associated with parent ACEs ($r = .08, p = \text{n.s.}$), child ACEs ($r = .07, p = \text{n.s.}$) or parental CPS involvement ($r = .08, p = \text{n.s.}$), but it was significantly positively associated with higher adult adversity ($r = .24, p < .05$). Higher social support quality was associated with higher levels of adult adversity ($r = -.35, p < .01$) and child ACEs ($r = -.33, p < .01$), but not parent ACEs ($r = .00, p = \text{n.s.}$) or CPS involvement ($r = -.01, p = \text{n.s.}$). Parents with involvement in CPS had higher levels of parent ACEs, $t(1, 100) = 4.30, p < .01$, and child ACEs $t(1, 105) = 3.33, p < .01$, but not adult adversity, $t(1, 100) = 1.64, p = \text{n.s.}$

Mediation Models

Model 2 was the best-fitting model according to chi-square difference testing (Table 5). Fit statistics indicated that Model 2 had good fit with the data, CFI = 1.00, $p = .76$, $\chi^2/df = .80$, RMSEA = .00 (90% CI = .00 - .54), and SRMR = .05.

All significant paths in Model 2 are displayed in Figure 3. Parent ACEs was a significant direct predictor of child ACEs ($\beta = .32, p < .01$), after accounting for the paths from parent ACEs to adult adversity ($\beta = .27, p < .01$), and from adult adversity to child ACEs ($\beta = .36, p < .01$). In addition to the direct effect from parent ACEs to child ACEs, there also was a significant indirect effect of parent ACEs to child ACEs through adult adversity ($\beta = .10, p < .05$). Together, these effects accounted for 36.4% of the variance in child ACEs.

Results from Model 2 also indicated that although parent ACEs predicted subsequent adult adversity and child ACEs, parent ACEs did not significantly predict either aspect of negative parenting ($\beta = -.02, p = .n.s.$ for parental negativity and $\beta = .11, p = .n.s.$ for observed harshness). Moreover, child ACEs did not predict concurrent behavioral problems ($\beta = .07, p = .n.s.$) or peer problems ($\beta = -.17, p = .n.s.$). However, parental age was a significant predictor of observed harshness ($\beta = -.20, p < .05$), which in turn was a marginally significant predictor of peer problems ($\beta = .25, p < .10$). Older parents were harsher, and parents who were harsher were marginally significantly more likely to have children with poorer peer relations.

Rates of Intergenerational Continuity of ACEs

Results revealed that 86 parents out of the total sample (80.4%) had any ACEs, and 68 (79.1%) of these parents had children with ACEs, whereas 18 (20.1%) of these

parents had children without ACEs. These results indicate that the rate of intergenerational continuity of ACEs in the current sample was approximately 79.1%, and the rate of discontinuity was 20.1%.

The intergenerational continuity of specific ACEs items also was computed (Table 6). Consistent with the path analyses, parent ACEs and child ACEs involving any type of maltreatment were collapsed into one binary variable reflecting any maltreatment. The rate of maltreatment continuity, reflecting parents who were maltreated and then reported their children had experienced maltreatment, was 24.6%, whereas the rate of discontinuity was 75.4%. Parental divorce/separation (40.4%), substance use (19.1%), and incarceration (21.1%) also had continuity rates that were less than 50%. Conversely, domestic violence exposure (58.1%) and parental mental illness (62.5%) had continuity rates that were over 50%.

Promotive/Protective Effects Models

To examine promotive or protective factor for child ACEs and parental CPS involvement, two separate regressions models were conducted for effective parenting and then repeated for social support. All four models included parental negativity on self, shelter site, and adult adversity as covariates, given their previously established associations with parent ACEs and child ACEs in the mediation models. An inspection of each of the regression analyses with Cook's *d* indicated that no influential cases affected the pattern of results in any of the models.

For the first model, a hierarchical regression, child ACEs was regressed onto covariates in the first step, parent ACEs and observed effective parenting in the second step, and the interaction of ACEs and observed parenting in the third step. Results

revealed main effects of parent ACEs ($\beta = .30, p < .01$) and adult adversity ($\beta = .40, p < .01$), no main effect of observed parenting, and no significant interaction. In the second model, a binary logistic regression was conducted with parental involvement in CPS as the outcome and the same three steps as model 1. Results indicated a main effect of parent ACEs ($\beta = .58, SE = .17, p < .05, OR = 1.79$) and no main effects of observed parenting or other variables, and no significant interaction.

For the third and fourth models, the first and second models were repeated with social support substituted for observed effective parenting. In the third model, the hierarchical linear regression revealed main effects of parent ACEs ($\beta = .32, p < .01$), adult adversity ($\beta = .31, p < .01$), and social support quality ($\beta = -.34, p < .01$) for child ACEs, but no significant moderation of parent ACEs and child ACEs by social support (Table 7). Analyses of simple slopes of parental support at one standard deviation above, below, and at the mean indicated that higher quality social support predicted lower numbers of child ACEs across the whole sample and did not interact with parental ACEs (Figure 4). In the fourth model, the logistic regression revealed only main effects of parent ACEs for CPS involvement ($\beta = .61, SE = .17, p < .05, OR = 1.83$) and no main effects of partner support or other variables, and no significant interaction.

Discussion

The present study examined the intergenerational continuity and discontinuity of ACEs from parents to children and the role of risk, promotive, and protective processes in the intergenerational pathways of ACEs. The purpose was to address two gaps in the trauma literature, including the need to determine the extent to which ACEs, conceptualized broadly by the CDC as maltreatment and family dysfunction, occur across

generations; and the need to sharpen understanding of intergenerational continuity of trauma, including but not limited to maltreatment, in very disadvantaged families. From DP and social learning perspectives and informed by a resilience framework that together emphasize the role of early experiences, interactional processes, and lifespan development in shaping pathways to adaptation versus maladaptation (Cicchetti & Toth, 2009; Masten, 2006; Rutter, 2013; Sroufe, 2013), this study anticipated that the intergenerational continuity of trauma in homeless families would be high due to the chronic and acute poverty in the lives of these families.

General Prevalence and Associations of Parent ACEs across Development

Descriptively, the prevalence of ACEs in the current sample was substantial. Less than one-fifth of homeless parents reported never experiencing any ACEs, compared to over one-third of the adults comprising the nationally representative sample in the original ACE study. Moreover, the level of cumulative risk in this sample was high, with over 40% of parents reporting four or more ACEs, in contrast to approximately 12% of U.S. adults reporting this rate (Felitti et al., 1998; CDC 2013a, c). The observation that experiencing any type of ACE was more common in the current sample than experiencing no ACEs was particularly striking, given that the most common response in the national sample was to endorse no ACEs (CDC 2013c).

The first main aim of the present study was to establish whether parent ACEs in their families of origin would be significantly associated with continuity in adversity and trauma in subsequent developmental periods, including adulthood and parenthood. The hypotheses, which specified that both associations would be significant, were supported. Bivariate associations, confirmed by path analyses, indicated that greater numbers of

parental ACEs in childhood predicted more adult adversity and greater number of ACEs in children. The relation between parental ACEs and adult adversity reflects lifecourse continuity of ACEs, such that parents who had heightened levels of traumatic experiences in childhood were at risk for heightened levels of traumatic experiences in adulthood (Harper et al. 2003; Pratchett & Yehuda, 2011; Sroufe et al., 2005). This observation is reflected more specifically in Table 4, which illustrates the extent to which parent ACEs, adult adversity, and children's ACEs were elevated across the sample. Broadly, 80.4% of parents reported any ACE, 72.9% of parents reported at least one form of adult adversity, and 70.0% of parents reported their children had experienced at least one ACE. Taken together, this group of families reported high levels of almost all types of ACEs.

The processes by which high levels of parent ACEs may predict high levels of adult adversity could be accounted for by passive continuity and interactive continuity (Caspi et al., 1989; Conger et al., 2012). For example, almost two thirds of parents reported ACEs involving child maltreatment, and more than half of parents reported being physically or sexually assaulted as adults. Although the specific circumstances of these events are not known, these high rates of maltreatment/assault could either reflect passive continuity, such that maltreated children could continue to live in environments where risk for adulthood assault was elevated (Caspi et al., 1989; Pratchett & Yehuda, 2011); or interactional continuity, whereby maltreated children may internalize expectations of aggression and enact them with subsequent social partners (Davies & Martin, 2013; Caspi et al., 1989; Dodge et al., 1990). Other examples of lifecourse continuity, such as exposure to parental divorce or domestic violence in childhood followed by becoming divorced or involved in domestic violence in adulthood may

similarly reflect both passive and interactive continuity, depending on the circumstances. Broadly, these findings are consistent with past research on elevated lifecourse experiences of physical and sexual assault, which suggests that individuals who are not protected from trauma exposure as children may be at higher risk for having problems protecting themselves from traumatic experiences as adults (Pratchett & Yehuda, 2011; Widom et al., 2013).

Intergenerational Continuity of Parent ACEs

The hypothesis that parent and child ACEs would be associated also was supported, and the nature of this relation was sharpened with path analyses. Even after accounting for the predictive effects of parent ACEs on adult adversity and adult adversity on child ACEs, there was a significant direct effect of parent ACEs on child ACEs. Statistically, this finding was evident by the observation that Model 2 was a significantly better fit than Model 3, which did not include the direct path from parent ACEs to child ACEs. Broadly, this finding suggests that even after considering the continuity of trauma from parents' childhoods to adulthoods, and the extent to which adult adversity and child ACEs likely co-occurred, the intergenerational continuity of trauma in parents' childhoods to their children's childhoods was apparent. These findings resonate with well-established research on the role of early, negative experiences in shaping pathways to future maladaptation (Bowlby, 1969; Rutter, 1989; Sameroff, 2000; Sroufe et al., 2005). Parents with higher ACEs as children were likely to have children with higher ACEs.

Rates of intergenerational continuity of total ACEs and specific ACE items also were computed to inform understanding about patterns of ACEs continuity and

discontinuity. With respect to the importance of calculating rates of intergenerational continuity prospectively rather than retrospectively (Hunter & Kilstrom, 1979; Thornberry et al., 2012; Widom, 1989), the intergenerational continuity of total ACEs was approximately 79%. Of parents who had at least one ACE in their family of origin, 79% of them had children who also had at least one ACE.

Notably, these rates are higher than the rates of prospective, intergenerational maltreatment reported in the literature (Egeland et al., 1998; Ertem et al., 2000; Kaufman & Zigler, 1987) for a variety of reasons. First, ACEs are a broader category of trauma that is more inclusive of other types of trauma and family dysfunction, in addition to maltreatment. As previously identified by other investigators, the broader the inclusion criteria, the higher the rates of continuity are likely to be (Kaufman & Zigler, 1987). Second, it is possible that rates of generational trauma were higher in the current sample due to the nature of risk that characterized this population. Many parents in this study had a high degree of sociodemographic risk factors, including but not limited to young age at first childbirth, multiple children per family, low educational attainment, and unemployment. Previous homeless episodes had affected most of the sample, with the majority of parents with prior homelessness in adulthood and childhood. More than one third of the parents also reported that their child had experienced prior homelessness, and this subset of children had an average of three previous homeless episodes.

Together, these observations suggest a high level of cumulative risk, as well as acute, chronic, and intergenerational poverty within these families. Given these circumstances, it is critical to consider that this group of families reflected a specific, non-representative sample of the general population when interpreting these findings.

Families were selected for the broader study based on sheltered status, and parents were then retrospectively asked about ACEs. As a result, these rates of lifecourse and intergenerational continuity of trauma can only be interpreted within families who are severely impoverished and sheltered, not compared against families who are severely impoverished but not sheltered, or those who are not impoverished. Thus, the current study provides preliminary evidence that within a group of chronically impoverished, sheltered families, continuity of trauma across the lifespan and subsequent generations is high.

Although preliminary, these findings suggest that high rates of intergenerational poverty may be compatible environments for high rates of intergenerational trauma to co-occur (Conger & Donnellan, 2007; Harper et al., 2003). When economic resources are limited, parents may be less equipped to provide secure environments for child-rearing, protect children from unsafe individuals and communities, and invest in effective parenting and social networking strategies that may otherwise shield children from the effects of trauma exposure (Appleyard et al., 2005; Cicchetti & Lynch, 1993; Corcoran, 1995; Foster & Brooks-Gunn, 2009; Harper et al., 2003). Indeed, as evident in the high level of sociodemographic risk, it was the norm in this sample to have multiple children and be a single, unemployed mother. This level of poverty and risk was a likely contributor to parent and child ACEs, and the intergenerational continuity of trauma that connected them (Bassuk et al., 2001; Herman et al., 1997). However, to more strongly establish this conjecture, these findings would need to be replicated across a more representative range of parents, all of who are not sheltered, and compared against lower risk socioeconomic groups.

Mediating Risk Processes of ACEs Continuity

The second hypothesis expected that both adult adversity and harsh parenting would independently mediate the intergenerational continuity of parent ACEs and child ACEs. Part of this hypothesis was supported, such that adult adversity was a significant partial mediator of parent ACEs and child ACEs, whereas neither measure of harsh parenting was a partial mediator in this pathway. Regarding adult adversity, this finding suggests that within the current sample, there were two longitudinal pathways to child ACEs, a direct path from parent ACEs and an indirect path through adult adversity, both of which reflected risk processes (Luthar, 2006; Masten, 2001; Rutter, 1989). These findings extend the literature on adult adversity as a mediator of intergenerational maltreatment to adult adversity as a mediator of intergenerational continuity of ACEs (Pears & Capaldi, 2001; Thompson, 2006; Wekerle et al., 2007). These findings suggest that many parents in extremely disadvantaged environments experience development as a chain of traumatic experiences beginning in childhood, and continuing with lifecourse and intergenerational continuity of trauma.

Harsh parenting did not serve as a mediator of parental ACEs and child ACEs. Contrary to previous research (e.g., Belsky et al., 2009; Cicchetti & Howes, 1991; Conger et al., 2013; Herrenkohl et al., 1983; Newcombe & Locke, 2001, harsh parenting in the form of observed harshness or negative EE was not predicted by higher parental trauma in childhood, and it did not predict higher trauma exposure in children. Potentially, neither parent nor child ACEs were associated with harsh parenting because general levels of harsh parenting were low in the current sample, reflected by relatively low means on negative EE and observed harshness.

Alternatively, there may be domain-specific, canalized risk pathways following parental ACEs that specifically predict lifecourse and intergenerational continuity of trauma but do not predict other aspects of maladaptive functioning, such as harsh parenting. This possibility is further supported by the finding that higher levels of child ACEs did not predict higher levels of concurrent socioemotional or peer problems in school. In the current study, socioemotional and peer competence, measured in kindergarten or first grade, may have been affected by a myriad of other risk factors associated with poverty and homelessness, in addition to, or exclusive of, child ACEs. It also is possible that there are long-term, sleeper effects of child ACEs on socioemotional and peer functioning that were not evident here but will emerge over time, rather than concurrently. By projecting findings from this study, child ACEs may be especially likely to continue to predict experiences of trauma and adversity as children develop. To test these possibilities, however, a subsequent prospective, longitudinal study following children with both low and high levels of ACEs and predicting to future periods of socioemotional adjustment and trauma exposure would be needed.

Promotive Processes for Child ACEs

The third set of hypotheses anticipated that positive observed parenting and social support from a co-parent or romantic partner would each independently serve as protective factors in the intergenerational pathways of trauma. Two specific outcomes, child ACEs, and parental involvement in CPS, were expected to be lower in contexts where protective factors were higher. Effective parenting did not moderate the association between parental ACEs and child ACEs or parental ACEs and CPS involvement, nor were any main effects of effective parenting on either outcome.

Although these findings are not consistent with the maltreatment literature, which has found positive parenting to buffer intergenerational risk (Jaffee et al., 2013; Schofield et al., 2013; Thornberry et al., 2013), they are consistent with the current lack of findings regarding harsh parenting. The lack of findings for parenting may be accounted for by issues with restricted range in this sample, such that parent and child ACEs were elevated to the extent that neither aspect of parenting had a significant mediating or moderating effect.

Parental social support from the child's biological parent or from a current romantic partner was found to directly predict lower levels of child ACEs. However, support did not moderate the association between parental ACEs and child ACEs, or parental ACEs and CPS involvement. These findings indicate that parental support served as a promotive factor, such that higher levels of support predicted lower levels of child ACEs, regardless of the level of parental ACEs. This finding is consistent with both historical and contemporary literature on the importance of a romantic partner or co-parent in lowering the risk for child maltreatment in parents with trauma histories (Dixon et al., 2009; Egeland et al., 1988; Hunter & Kilstrom, 1979; Jaffee et al., 2013; Thornberry et al., 2013).

Higher parental social support may have predicted lower child ACEs for multiple reasons. Parents with higher levels of support also had significantly lower levels of adult adversity but not lower ACEs. Potentially, parental support may have related to lower child ACEs and adult adversity because the partners' presence reduced the risks that parents would experience adult adversity (e.g., face violence victimization, be separated or divorced) and children would be exposed to ACEs. Conversely, children of parents

who were not supported by a partner may have experienced higher ACEs due to a lack of a supportive co-parent to protect them from trauma, or due to a co-parent who in some way contributed to a greater risk of trauma exposure (e.g., by engaging in violence with the primary caregiver).

Finally, although not specifically hypothesized, a secondary finding emerged regarding parental CPS involvement. Higher levels of parental ACEs in the family of origin, but not higher levels of adult adversity, predicted higher odds of CPS involvement. This observation bolsters the current findings on the role of traumatic early experiences, above and beyond traumatic experiences in adulthood, on future parent and child outcomes. Parental ACEs directly predicted child ACEs and parental CPS involvement above and beyond the effects of adult adversity.

Strengths and Limitations

This was the first study to examine intergenerational continuity of trauma in very disadvantaged, homeless families, using the cumulative trauma index of ACEs. Despite the wealth of research on physical and mental health outcomes of adults with histories of ACEs (CDC, 2013a; Felitti et al., 1998; Whitfield, 1998), characterizing intergenerational ACEs in homeless families provides a more clear understanding on the etiology and generational continuity of trauma in families who are chronically and acutely impoverished. Many of the parents from these families likely experienced child development in environments with very limited resources for relational support and experiences of child homelessness, in addition to exposure to interpersonal violence and family dysfunction. The findings that emerged from this study provide important insight that efforts to improve the lives of homeless families and deter intergenerational

continuity of trauma should focus on reducing childhood trauma to thwart lifecourse and intergenerational trauma continuity.

Despite these strengths, there were numerous, significant limitations. The current sample was relatively small and included homeless families from only one urban, Midwestern city, with high levels of acute and chronic poverty. It was a non-representative, sheltered sample in which rates of adversity would be expected to be elevated to begin with, due to the nature of sampling. Results may not generalize to other more representative families, or to other types of homelessness, such as single men, women without children, families doubled-up with friends or relatives, or homeless families in other regions.

Additional limitations involved the ACEs and adversity measures. Parent ACEs were gathered retrospectively. Although parents were only asked to objectively indicate whether ACEs had occurred and not describe details, a distinction that is likely to increase reliability (Hardt & Rutter, 2004), prospective accounts of ACEs would have been preferable. Another important limitation involved how child ACEs, and specifically, child maltreatment was estimated. Because the larger study from which this sample was drawn did not gather nuanced, cross-referenced information on child maltreatment, the estimate of child ACEs involving maltreatment was likely an underrepresentation. Thus, although intergenerational rates of maltreatment in the current sample were relatively aligned with previous studies at approximately 25% (Ertem et al., 2000; Hunter & Kilstrom, 1979; Kaufman & Zigler, 1987), actual rates of child maltreatment may have been higher with county records. Finally, reports of adult adversity also were likely

underestimated, as information on specific adversity items (e.g., domestic violence involvement) across the entirety of adulthood was not available.

Limitations also involved potential reporter biases and design issues. Parental ACEs, adult adversity, and child ACEs were all reported by parents, which may have introduced informant biases as a source of methodological error. To address this limitation, however, parental negativity about themselves and their children was accounted for by the FMSS. This measure can effectively capture negativity with low face validity (Caspi et al., 2004) and was used as a way to account for reporter bias. Finally, with the exception of children's socioemotional and peer functioning, all data were collected cross-sectionally. Thus, all analyses involving longitudinal or intergenerational hypotheses relied on conceptually driven predictions in the absence of temporally determined data.

Implications and Conclusions

Empirical implications of the current study point to multiple avenues for future research. First and foremost, the intergenerational continuity of ACEs in very impoverished, sheltered families should be replicated in a larger, multi-regional sample, and rates of intergenerational continuity of ACEs should be compared with those of more representative samples. Conceivably, a future study should administer the ACEs to a nationally representative sample of parents, use a stratified design to select parents with high ACEs and those with low ACEs into two separate groups, and then compare rates of intergenerational continuity of ACEs in their children. The empirical processes that account for lifecourse continuity of parental ACEs to adult adversity also should be sharpened to understand what social, emotional, or contextual factors contribute to the

channels linking ACEs in the family of origin to heightened adversity in adulthood. More research also is needed to identify protective factors that buffer the continuity of ACEs from parents to children. Potentially, factors that would reduce the risks associated with poverty while simultaneously protecting children from ACEs exposure, such as the availability of safe neighborhoods or stable housing, would be worthwhile to examine. Finally, ongoing, prospective research following intergenerational continuity of ACEs further into the second generation is needed to more clearly understand the developmental effects of ACEs.

Clinical implications of the current study include multiple targets for intervention to reduce intergenerational continuity of ACEs. Youth with high levels of ongoing ACEs should be identified and provided with resources and support to deter pathways to adult adversity before they become parents. Specifically targeting and reducing continuity of individual ACEs, such as lifecourse violence victimization, incarceration, divorce, psychopathology, or addiction also would be promising strategies to reduce ACEs continuity from the bottom up. Adults with histories of ACEs and ongoing adversity also could be provided with supportive resources, such as enhanced support networks and access to safe communities, to prevent ACEs in their children.

In conclusion, the present study sharpens and deepens understanding of intergenerational continuity of trauma. Primary findings emphasize the powerful role of negative early experiences across development and generations, evident in the observation that higher parental ACEs in the family of origin had significant direct effects on higher child ACEs and predicted higher odds of parental CPS involvement, above and beyond the effects of ongoing parental adversity in adulthood. Direct and

mediating risk processes to child ACEs were characterized specifically by lifecourse and intergenerational continuity of trauma, rather than parenting quality. Rates of prospective, intergenerational continuity of ACEs were higher than previously established rates of intergenerational maltreatment, potentially due to the inclusiveness of ACEs and the extent of severe environmental adversity continuing to affect these families. Despite these risk pathways, ACEs were lower in children of parents who had more support from their child's fathers, their romantic partners, or both. Intergenerational continuity rates of specific ACE items also were much lower than the continuity rate of total ACEs, with substance use and incarceration having the lowest continuity rates. Together, these findings speak to the need to continue to support and promote family competence and resilience in very disadvantaged families to prevent trauma exposure from continuing to pervade the lives of impoverished children and parents and disconnect the links between intergenerational poverty and trauma.

References

- Anda, R. (2012). The health and social impact of growing up with adverse childhood experiences: The human and economic costs of the status quo. San Diego, CA: ACE Study.
http://acestudy.org/files/Review_of_ACE_study_with_references_summary_table_2_.pdf (accessed September 5, 2013)
- Appleyard, K., Egeland, B., van Dulmen, M. H. M., & Alan Sroufe, L. (2005). When more is not better: The role of cumulative risk in child behavior outcomes. *Journal of Child Psychology and Psychiatry, 46*, 235-245.
- Appleyard, K., Egeland, B., & Sroufe, L. A. (2007). Direct social support for young high risk children: Relations with behavioral and emotional outcomes across time. *Journal of Abnormal Child Psychology, 35*, 443-457.
- Armstrong, J. M., & Goldstein, L. H. (2003). *Manual for the MacArthur Health and Behavior Questionnaire (HBQ 1.0): MacArthur Foundation Research Network on Psychopathology and Development*. Pittsburgh: University of Pittsburgh.
- Bassuk, E. L., Perloff, J. N., & Dawson, R. (2001). Multiply homeless families: The insidious impact of violence. *Housing Policy Debate, 12*, 299-320.
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development, 55*, 83-96.
- Belsky, J., Conger, R. D., & Capaldi, D. M. (2009). The intergenerational transmission of parenting: Introduction to the special section. *Developmental Psychology, 45*, 1201-1204.

- Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: Mediating mechanisms and implications for prevention. *Child Development, 82*, 162-176.
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. London: Hogarth.
- Browne, A. (1993). Family violence and homelessness: The relevance of trauma histories in the lives of homeless women. *American Journal of Orthopsychiatry, 63*, 370-384.
- Browne, A., & Bassuk, S. S. (1997). Intimate partner violence in the lives homeless and poor housed women: Prevalence and patterns in an ethnically diverse sample. *American Journal of Orthopsychiatry, 67*, 261-278.
- Caspi, A., Bem, D. J., & Elder, G. H. (1989). Continuities and consequences of interactional styles across the life course. *Journal of Personality, 57*, 375-406.
- Caspi, A., Moffitt, T. E., Morgan, J., Rutter, M., Taylor, A., Arseneault, L., ... Polo-Thomas, M. (2004). Maternal expressed emotion predicts children's antisocial behavior problems: using monozygotic-twin differences to identify environmental effects on behavioral development. *Developmental Psychology, 40*, 149-161.
- Center for Disease Control and Prevention (2013a). Adverse Childhood Experiences (ACE) Study. San Diego, CA: ACE Study. <http://www.cdc.gov/ace/index.htm> (accessed November 7, 2013)
- Center for Disease Control and Prevention (2013b). Finding your ACE score. San Diego, CA: ACE Study. http://acestudy.org/yahoo_site_admin/assets/docs/ACE_Calculator-English.127143712.pdf (accessed August 12, 2013)

- Center for Disease Control and Prevention (2013c). Data and Statistics: Prevalence of Individual Adverse Childhood Experiences. San Diego, CA: ACE Study.
<http://www.cdc.gov/ace/prevalence.htm> (accessed November 7, 2013)
- Cicchetti, D. (2010). Resilience under conditions of extreme stress: A multilevel perspective. *World Psychiatry, 9*, 145-154.
- Cicchetti, D., & Howes, P. W. (1991). Developmental psychopathology in the context of the family: Illustrations from the study of child maltreatment. *Canadian Journal of Behavioural Science, 23*, 257-281.
- Cicchetti, D., & Lynch, M. (1993). Toward an ecological/transactional model of community violence and child maltreatment: Consequences for children's development. *Psychiatry, 56*, 96-118.
- Cicchetti, D., & Rogosch, F. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology, 8*, 597– 600.
- Cicchetti, D., & Toth, S. L. (2009). The past achievements and future promises of developmental psychopathology: The coming of age of a discipline. *The Journal of Child Psychology and Psychiatry, 50*, 16-25
- Cicchetti, D., & Valentino, K. (2006). An ecological transactional perspective on child maltreatment: Failure of the average expectable environment and its influence on child development. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 3. Risk, disorder, and adaptation* (pp. 129–201). New York: Wiley.

- Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology, 58*, 175-199.
- Conger, R. D., Schofield, T. J., Neppl, T. K., & Merrick, M. T. (2013). Disrupting intergenerational continuity in harsh and abusive parenting: The importance of a nurturing relationship with a romantic partner. *Journal of Adolescent Health, 53*, S11-S17.
- Cook, D. R., & Weisberg, S. (1982). *Residuals and influence in regression*. London: Chapman & Hall.
- Corcoran, M. (1995). Rags to rags: poverty and mobility in the United States. *Annual Review of Sociology, 21*, 237–267.
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin, 116*, 387–411.
- Davies, P. T., & Martin, M. J. (2013): The reformulation of emotional security theory: The role of children’s social defense in developmental psychopathology. *Development and Psychopathology, 25*, 1435-1454.
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice, 5*, 314-332.
- DeGarmo, D. S., Patterson, G. R., & Forgatch, M. S. (2004). How do outcomes in a specified parenting training intervention maintain or wane over time? *Prevention Science, 5*, 73-89.
- Dishion, T. J., & Patterson, G. R. (2006). The development and ecology of antisocial behavior in childhood and adolescence. In D. Cicchetti & D. J. Cohen (Eds.),

Developmental psycho- pathology Vol. 3: Risk, disorder, and adaptation (pp. 503–541). New York, NY: Wiley.

- Dix, T. (1991). The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin*, *110*, 3-25.
- Dixon, L., Browne, K., & Hamilton-Giachritsis, C. (2009). Patterns of risk and protective factors in the intergenerational cycle of maltreatment. *Journal of Family Violence*, *24*, 111-122.
- Dodge, K. A., Bates, J. E., & Pettit, G. S. (1990). Mechanisms in the cycle of violence. *Science*, *250*, 1678-1683.
- Dube, S. R., Felitti, V. J., Dong, M., Giles, W. H., & Anda, R. F. (2003). The impact of adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900. *Preventive Medicine*, *37*, 268-277.
- Dube, S. R., Williamson, D. F., Thompson, T., Felitti, V. J., & Anda, R. F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse and Neglect*, *28*, 729-737.
- Edwards, V. J., Dube, S. R., Felitti, V. J., & Anda, R. F. (2007). It's ok to ask about past abuse. *American Psychologist*, *62*, 327-328.
- Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry*, *160*, 1453-1460.

- Egeland, B., Jacobvitz, D., & Sroufe, L. A. (1988). Breaking the cycle of abuse. *Child Development, 59*, 1080-1088.
- Ehrensaft, M. K., Cohen, P., Brown, J., Smailes, E., Chen, H., & Johnson, J. G. (2003). Intergenerational transmission of partner violence: A 20-year prospective study. *Journal of Consulting and Clinical Psychology, 71*, 741– 753.
- Ertem, I. O., Leventhal, J. M., & Dobbs, S. (2000). Intergenerational continuity of child physical abuse: how good is the evidence? *The Lancet, 356*, 814-819.
- Felitti, M. D., Vincent, J., Anda, M. D., Robert, F., Nordenberg, M. D., Williamson, M. S., ... & James, S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*, 245-258.
- Forgatch, M. S., & DeGarmo, D. S. (1999). Parenting through change: an effective prevention program for single mothers. *Journal of Consulting and Clinical Psychology, 67*, 711-724.
- Foster, H., & Brooks-Gunn, J. (2009). Toward a stress process model of children's exposure to physical family and community violence. *Clinical Child and Family Psychology review, 12*, 71-94.
- Garnezy N. 1983. Stressors of childhood. In N. Garnezy & M. Rutter (Eds.), *Stress, Coping, and Development* (pp. 43–84). New York: McGraw-Hill
- Gewirtz, A. H., DeGarmo, D. S., Plowman, E. J., August, G., & Realmuto, G. (2009). Parenting, parental mental health, and child functioning in families residing in supportive housing. *American Journal of Orthopsychiatry, 79*, 336-347.

- Goodman, L.A. (1991). The prevalence of abuse in the lives of homeless and housed poor mothers: A comparison study. *American Journal of Orthopsychiatry*, *61*, 489-500.
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: Research Note. *Journal of Child Psychology and Psychiatry*, *38*, 581-586.
- Graham, J. W., Cumsille, P. E., & Elek-Fisk, E. (2003). Methods for handling missing data. In J. A. Schinka & W. F. Velicer (Eds.), *Handbook of psychology: Research methods in psychology, Vol. 2* (pp. 87-114). Hoboken, NJ: Wiley.
- Haber, M. G., & Toro, P. A. (2004). Homelessness among families, children and adolescents: An ecological-developmental perspective. *Clinical Child and Family Psychology Review*, *7*, 123-164.
- Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry*, *45*, 260-273.
- Harper, C., Marcus, R., & Moore, K. (2003). Enduring poverty and the conditions of childhood: lifecourse and intergenerational poverty transmissions. *World Development*, *31*, 535-554.
- Hausman, B., & Hammen, C. (1993). Parenting in homelessness: The double crisis. *American Journal of Orthopsychiatry*, *63*, 358-369.
- Herbers, J. E., Cutuli, J. J., Lafavor, T. L., Vrieze, D., Leibel, C., Obradović, J., & Masten, A. S. (2011). Direct and indirect effects of parenting on the academic functioning of young homeless children. *Early Education and Development*, *22*, 77-104.

- Herman, D., Susser, E., Struening, E., & Link, B. (1997). Adverse childhood experiences: Are they risk factors for adult homelessness? *American Journal of Public Health*, 87, 249-255.
- Herrenkohl, E. C., Herrenkohl, R.C, & Toedter, L. J.(1983). Perspectives on the intergenerational transmission of abuse. In D. Finkelhor, R. J. Gelles, G. T. Hotaling, & M. A. Straus (Eds.), *The dark side of families* (pp. 305-316). Beverly Hills, CA: Sage.
- Hillis, S. D., Anda, R. F., Dube, S. R., Felitti, V. J., Marchbanks, P. A., & Marks, J. S. (2004). The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial consequences, and fetal death. *Pediatrics*, 113, 320-327.
- Hoyle, R. H., ed. (1995). *Structural equation modeling: Concepts, issues and applications* (pp. 1-15). London: Sage.
- Hunter, R. S., & Kilstrom, N. (1979). Breaking the cycle in abusive families. *American Journal of Psychiatry*, 136, 10, 1320-1322.
- Jaffee, S. R., Bowes, L., Ouellet-Morin, I., Fisher, H. L., Moffitt, T. E., Merrick, M. T., & Arseneault, L. (2013). Safe, stable, nurturing relationships break the intergenerational cycle of abuse: A prospective nationally representative cohort of children in the United Kingdom. *Journal of Adolescent Health*, 53, S4-S10.
- Kaufman, J., & Zigler, E. (1987). Do abused children become abusive parents? *American Journal of Orthopsychiatry*, 57, 186-192.

- Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., ...
Zaslavsky, A. M. (2003). Screening for serious mental illness in the general
population. *Archives of General Psychiatry*, *60*, 184-189.
- Kim-Cohen, J., Moffitt, T. E., Caspi, A., & Taylor, A. (2004). Genetic and
environmental processes in young children's resilience and vulnerability to
socioeconomic deprivation. *Child Development*, *75*, 651-668
- Lansford, J. E., Dodge, K. A., Pettit, G. S., Bates, J. E., Crozier, J., & Kaplow, J. (2002).
A 12-year prospective study of the long-term effects of early child physical
maltreatment on psychological, behavioral, and academic problems in
adolescence. *Archives of Pediatrics & Adolescent Medicine*, *156*, 824-830.
- Luthar, S. S. (2006). Resilience in development: A synthesis of research across five
decades. In D. Cicchetti and D. J. Cohen (Eds.), *Developmental Psychopathology*
(2nd ed.): *Vol. 3 Risk, Disorder, and Adaptation* (pp. 739-795). Hoboken, NJ:
Wiley and Sons.
- Magaña-Amato, A. (1993). *Manual for coding expressed emotion from the five-minute
speech sample: UCLA Family Project*. Los Angeles: University of California, Los
Angeles.
- Margolin, G. (2005). Children's exposure to violence: Exploring develop- mental
pathways to diverse outcomes. *Journal of Interpersonal Violence*, *20*, 72-81.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American
Psychologist*, *56*, 227-238.
- Masten, A. S. (2006). Developmental psychopathology: Pathways to the future.
International Journal of Behavioral Development, *31*, 46-53.

- Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and Psychopathology, 19*, 921-930.
- Masten, A. S. (2011). Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Development and Psychopathology, 23*, 141-154.
- Masten, A. S., Herbers, J. E., Desjardins, C. D., Cutuli, J. J., McCormick, C. M., Sapienza, J. K., ... & Zelazo, P. D. (2012). Executive function skills and school success in young children experiencing homelessness. *Educational Researcher, 41*, 375-384.
- Masten, A. S., Miliotis, D., Graham-Bermann, S. A., Ramirez, M., & Neemann, J. (1993). Children in homeless families: risks to mental health and development. *Journal of Consulting and Clinical Psychology, 61*, 335-343.
- Masten, A. S. & Narayan, A. J. (2012). Child development in the context of disaster, war and terrorism: Pathways of risk and resilience. *Annual Review of Psychology, 63*, 227-257.
- Masten, A. S., Neemann, J., & Andenas, S. (1994). Life events and adjustment in adolescents: The significance of event independence, desirability, and chronicity. *Journal of Research on Adolescence, 4*, 71-97.
- McDonald, R. P., & Ho, M. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods, 7*, 64-82.
- Milburn, N., & D'Ercole, A. (1991). Homeless women: Moving towards a comprehensive model. *American Psychologist, 46*, 1161-1169.

- Moffitt, T. E. (1993). Adolescent-limited and life-course persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, 100, 674– 701.
- Moffitt, T. E., & the Klaus-Grawe 2012 Think Tank. (2013). Childhood exposure to violence and life-long health: Clinical intervention science and stress biology research join forces. *Development and Psychopathology*, 25, 1619-1634.
- Muthén, L. K., & Muthén, B. O. (1998-2011). *Mplus user's guide. Sixth Edition*. Los Angeles, CA: Muthén & Muthén.
- Narayan, A. J., Englund, M. M., & Englund, B. (2013). Developmental timing and continuity of exposure to interparental violence and externalizing behavior as prospective predictors of dating violence. *Development and Psychopathology*, 25, 973-990.
- Narayan, A. J., Herbers, J. E., Plowman, E. J., Gewirtz, A. H., & Masten, A. S. (2012). Expressed emotion in homeless families: A methodological study of the five-minute speech sample. *Journal of Family Psychology*, 26, 648.
- Narayan, A. J., Sapienza, J. K., Monn, A. R., Lingras, K. A., & Masten, A. S. (2014 online). Risk, vulnerability, and protective processes of parental expressed emotion for children's peer relations in contexts of parental violence. *Journal of Clinical Child and Adolescent Psychology*.
- National Comorbidity Survey (2005). K10 and K6 scales. Boston, MA.
http://www.hcp.med.harvard.edu/ncs/k6_scales.php. (accessed August 12, 2013)
- Newcombe, M. D., & Locke, T. F. (2001). Intergenerational cycle of maltreatment: A popular concept obscured by methodological limitations. *Child Abuse and Neglect*, 25, 1219-1240.

- Paz Montes, M., de Paúl, J., & Milner, J. S. (2001). Evaluations, attributions, affect, and disciplinary choices in mothers at high and low risk for child physical abuse. *Child Abuse and Neglect, 25*, 1015-1036.
- Pears, K. C., & Capaldi, D. M. (2001). Intergenerational transmission of abuse: a two-generational prospective study of an at-risk sample. *Child Abuse and Neglect, 25*, 1439-1461.
- Pratchett, L. C., & Yehuda, R. (2011). Foundations of posttraumatic stress disorder: does early life trauma lead to adult posttraumatic stress disorder? *Development and Psychopathology, 23*, 477-491.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891.
- Rawlings, J. O. (1988). *Applied regression analysis: A research tool*. Pacific Grove, CA: Wadsworth & Brooks/Cole Advanced Books and Software.
- Rog, D. J., & Buckner, J. C. (2007, September). 5-Homeless Families and Children. In *Toward Understanding Homelessness: The 2007 National Symposium* (Vol. 4).
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry, 57*, 316-331.
- Rutter, M. (1989). Pathways from childhood to adult life. *Journal of Child Psychology and Psychiatry, 30*, 23-51.
- Rutter, M. L. (1999). Psychosocial adversity and child psychopathology. *The British Journal of Psychiatry, 174*, 480-493.

- Rutter, M. (2013). Developmental psychopathology: A paradigm shift, or just a relabeling? *Development and Psychopathology, 25*, 1201-1213.
- Sameroff, A. J. (2000). Developmental systems and psychopathology. *Development and Psychopathology, 12*, 297-312.
- Sarason, I. R., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4*, 497-510.
- Scarr, S., & McCartney, K. (1983). How people make their own environments: A theory of genotype→ environment effects. *Child Development, 54*, 424-435.
- Schilling, E. A., Aseltine, R. H., & Gore, S. (2007). Adverse childhood experiences and mental health in young adults: a longitudinal survey. *BMC Public Health, 7*, 30-39.
- Schofield, T. J., Lee, R. D., & Merrick, M. T. (2013). Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: A meta-analysis. *Journal of Adolescent Health, 53*, S32-S38.
- Shinn, M., Knickman, J. R., & Weitzman, B. C. (1991). Social relationships and vulnerability to becoming homeless among poor families. *American Psychologist, 46*, 1180-1187.
- Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology, 9*, 251-268.
- Sroufe, L. A. (2013): The promise of developmental psychopathology: Present and future. *Development and Psychopathology, 25*, 1215-1224.

- Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, W. A. (2005). *The development of the person*. New York: Guilford.
- Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development, 55*, 17-29.
- Stein, J. A., Leslie, M. B., & Nyamathi, A. (2002). Relative contributions of parent substance use and childhood maltreatment to chronic homelessness, depression, and substance abuse problems among homeless women: Mediating roles of self-esteem and abuse in adulthood. *Child Abuse & Neglect, 26*, 1011-1027.
- Straus, M. A. (1979). Family patterns and child abuse in a nationally representative American sample. *Child Abuse and Neglect, 1979, 3*, 213-225.
- Thompson, R. (2006). Exploring the link between maternal history of childhood victimization and child risk of maltreatment. *Journal of Trauma Practice, 5*, 57-72.
- Thornberry, T. P., Henry, K. L., Smith, C. A., Ireland, T. O., Greenman, S. J., & Lee, R. D. (2013). Breaking the cycle of maltreatment: The role of safe, stable, and nurturing relationships. *Journal of Adolescent Health, 53*, S25-S31.
- Thornberry, T. P., Knight, K. E., & Lovegrove, P. J. (2012). Does maltreatment beget maltreatment? A systematic review of the intergenerational literature. *Trauma, Violence, and Abuse, 13*, 135-151.
- Wekerle, C., Wall, A-M., Leung, E., & Trocmé, N. (2007). Cumulative stress and substantiated maltreatment: The importance of caregiver vulnerability and adult partner violence. *Child Abuse and Neglect, 31*, 427-443.

- Whitfield, C. L. (1998). Adverse childhood experiences and trauma. *American Journal of Preventative Medicine, 14*, 361-364.
- Widom, C. S. (1989). Does violence beget violence? A critical examination of the literature. *Psychological Bulletin, 106*, 3-28.
- Widom, C. S., Czaja, S., & Dutton, M. A. (2013 online). Child abuse and neglect and intimate partner violence victimization and perpetration: A prospective investigation. *Child Abuse and Neglect*.
- Williams, J. K., & Hall, J. A. (2009). Stress and traumatic stress: How do past events influence current traumatic stress among mothers experiencing homelessness? *Social Work Research, 33*, 199-207.
- Wright, M. O., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of Resilience in Children (2nd ed., pp. 15-37)*. New York: Kluwer/Academic Plenum.
- Yehuda, R., Halligan, S. L., & Grossman, R. (2001). Childhood trauma and risk for PTSD: relationship to intergenerational effects of trauma, parental PTSD, and cortisol excretion. *Development and Psychopathology, 13*, 733-753.

Table 1

Prevalence of ACEs in Homeless Sample

Total ACEs	n (%)
0	16 (15.0%)
1	19 (17.8%)
2	13 (12.1%)
3	8 (7.5%)
4	8 (7.5%)
5	13 (12.1%)
6	11 (10.3%)
7	7 (6.5%)
8	5 (4.7%)
9	2 (1.9%)
10	0 (0.0%)

Table 2

Prevalence of Specific ACEs in Homeless versus National Sample

Type of ACE	(%) Homeless	(%) National*
No ACEs	15.0%	36.1%
Verbal abuse	34.6%	10.6%
Physical Abuse	32.7%	28.3%
Sexual Abuse	31.8%	20.7%
Emotional Neglect	51.4%	14.8%
Physical Neglect	17.8%	9.9%
Divorce/Separation	48.9%	23.3%
Domestic Violence	29.0%	12.7%
Substance Abuse	43.9%	26.9%
Mental Illness	22.4%	19.4%
Incarceration	17.8%	4.7%

Note. *CDC, 2013c.

Table 3

Bivariate Correlations Between All Variables

Primary Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Parent ACEs	-											
2. Adult Adversity	.29**	-										
3. Child ACEs	.42**	.47**	-									
4. Parent Negativity on Child	.06	.10	.18†	-								
5. Parent Harshness	.10	-.07	.10	.22*	-							
6. Child Behavior Problems	.08	-.10	.11	.20†	.17	-						
7. Child Peer Problems	-.05	-.11	-.15	-.02	.27*	.56**	-					
Control Variables												
8. Parent Negativity on Self	.22*	.16†	.12	.32**	.14	.05	.01	-				
9. Parent Age	-.02	.20†	-.07	.03	-.28**	-.10	-.11	-.11	-			
10. Child Sex (Male)	-.01	-.04	-.02	.02	.17†	.35**	.19†	-.09	-.11	-		
11. Child Age	.01	-.04	-.07	-.16	-.16†	-.02	-.05	-.03	.02	.06	-	
12. Shelter (PSP)	-.02	.03	.24*	.06	.30**	.19*	.10	.02	-.21*	.12	.03	-
Descriptive Statistics												
Mean % if ordinal)	2.30	1.69	1.65	1.35	1.62	8.48	1.50	1.69	31.27	55.1%	5.88	62.6%
SD	1.60	1.30	1.49	1.08	.62	6.08	.50	1.07	6.59	NA	.64	NA
Sample Range	0-9	0-6	0-5	0-4.5	1-4	0-24	1-3.42	0-4.5	20-49	NA	4.0-6.9	NA
Possible Total Value	10	8	6	5	6	30	4	5	49	NA	6.99	NA
Missing Data	5	5	0	3	5	24	25	6	5	0		0

† $p < .10$, * $p < .05$, ** $p < .01$, ** $p < .01$

Table 4

Prevalence of Parental ACEs, Adult Adversity, and Child ACEs

Variable	Parent ACEs n (%)	Adult Adversity n (%)	Child ACEs n (%)
Any ACE Item	86 (80.4%)	78 (72.9%)	75 (70.0%)
Any Maltx/Assault	69 (64.9%)	57 (53.2%)	23 (21.5%)
Divorce/Separation	52 (48.9%)	32 (29.9%)	38 (35.5%)
Domestic Violence	31 (29.0%)	20 (18.7%)	46 (43.0%)
Substance Abuse	47 (43.9%)	5 (4.7%)	15 (14.0%)
Mental Illness	24 (22.4%)	38 (35.5%)	32 (29.9%)
Incarceration	19 (17.8%)	23 (21.5%)	23 (21.5%)

Table 5

Goodness of Fit Indices for all Models

Model	df	χ^2	<i>p</i> -value	χ^2/df	$\Delta\chi^2$ (Δdf)	Model			
						Comparison	CFI	RMSEA	SRMR
Null (0)	56	179.26	.00			--	--	--	--
1	22	19.82	.59	.90	--	--	1.00	.00	.05
2	28	22.45	.76	.80	2.63 (6)	1 vs. 2	1.00	.00	.05
3	31	38.08	.18	1.23	15.63 (3)	2 vs. 3	.94	.05	.06

Note. Model 2 was not a better fit than Model 1, but Model 2 was more parsimonious. Model 2 was a significantly better fit than Model 3. Model 2 was deemed the best-fitting model.

Table 6

Rates of Intergenerational Continuity of Total ACEs and Specific ACEs

Item	Transmission Rate	Non-Transmission Rate
Any ACE	79.1%	20.9%
Maltreatment*	24.6%	75.4%
Divorce/Separation	40.4%	59.6%
Domestic Violence	58.1%	41.9%
Substance Use	19.1%	80.9%
Mental Illness	62.5%	37.5%
Incarceration	21.1%	78.9%

Table 7

Hierarchical Linear Regression of Parent ACEs by Social Support Quality

	<i>B</i>	SE	β	R ²	F	ΔR^2
Step 1: Covariates				.51	10.01	.26*
Shelter	.63	.29	.20*			
Parent Negativity on Self	.15	.13	.10			
Adult Adversity	.50	.11	.44**			
Step 2: Main Effects				.63	11.20	.40*
Shelter	.51	.27	.16†			
Parent Negativity on Self	.08	.12	.15			
Adult Adversity	.30	.11	.26**			
Parent ACEs	.34	.08	.37**			
Parent Support	-.35	.17	-.19*			
Step 3: Interaction Effects				.64	9.56	.41
Shelter	.48	.27	.15†			
Parent Negativity on Self	.10	.13	.07			
Adult Adversity	.31	.11	.27**			
Parent ACEs	.32	.08	.35**			
Parent Support	-.34	.17	-.19*			
Parent ACEs x Support	.10	.09	.10			

† $p < .10$, * $p < .05$, ** $p < .01$, ** $p < .01$

Figure 1

Conceptual Diagram for Path Analyses

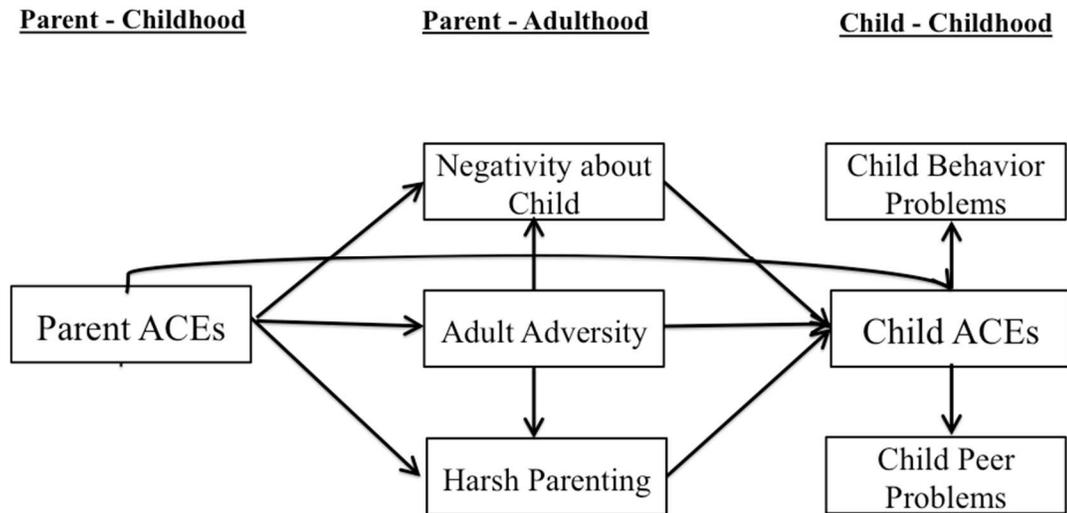
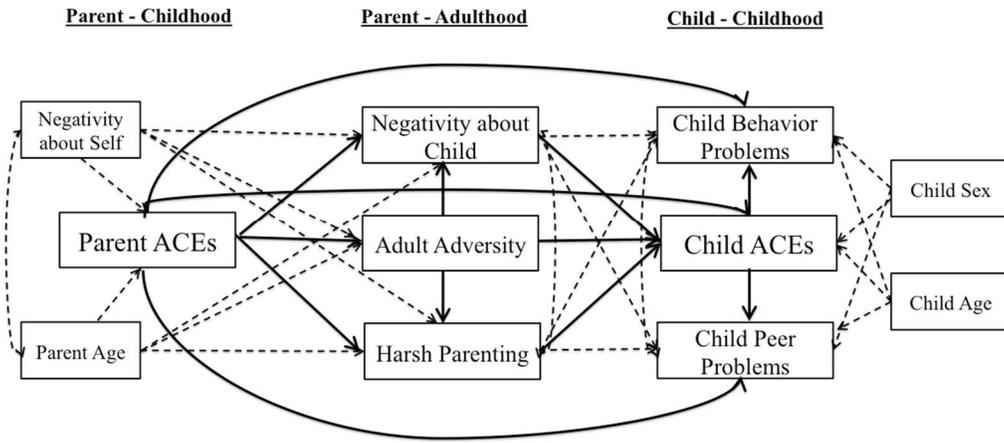
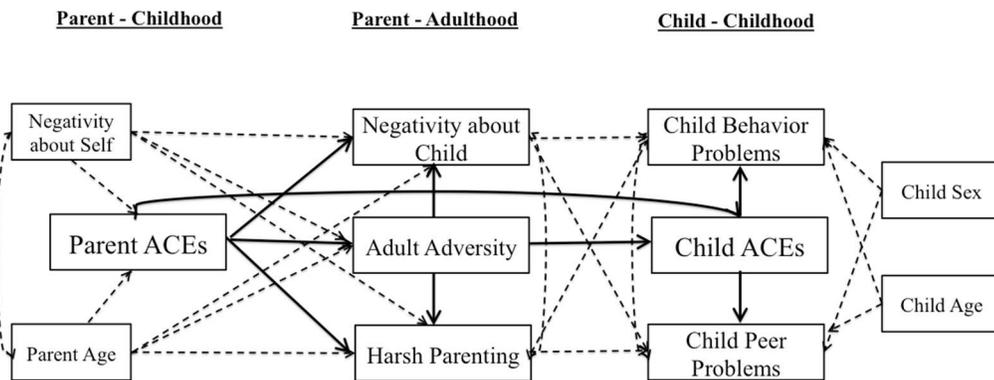


Figure 2a-c.

(a) *Double Partial Mediation Model*



(b) *Single Partial Mediation Model*



(c) *Single Full Mediation Model*

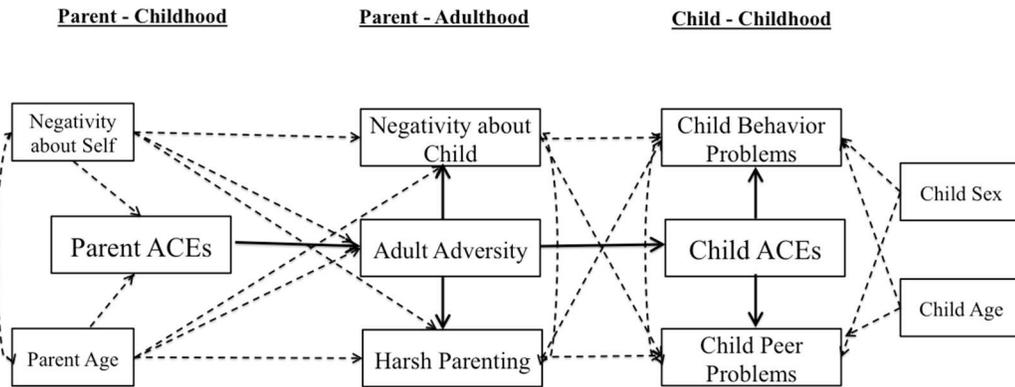
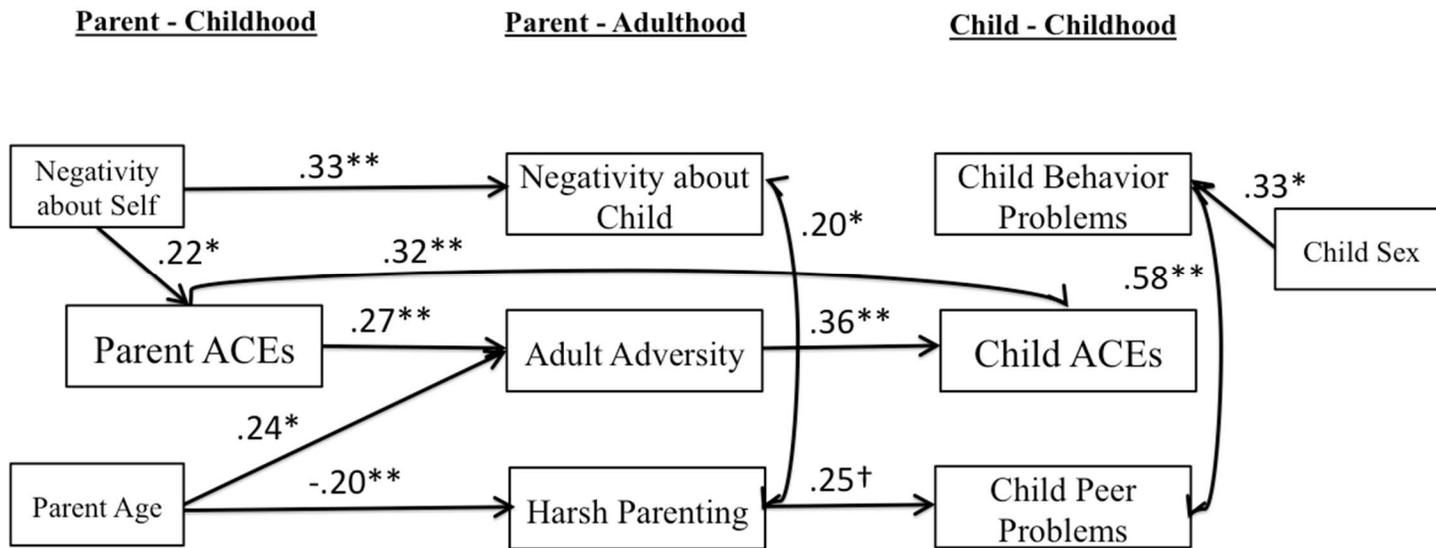


Figure 3

Best Fitting Model (Model 2) from Path Analyses

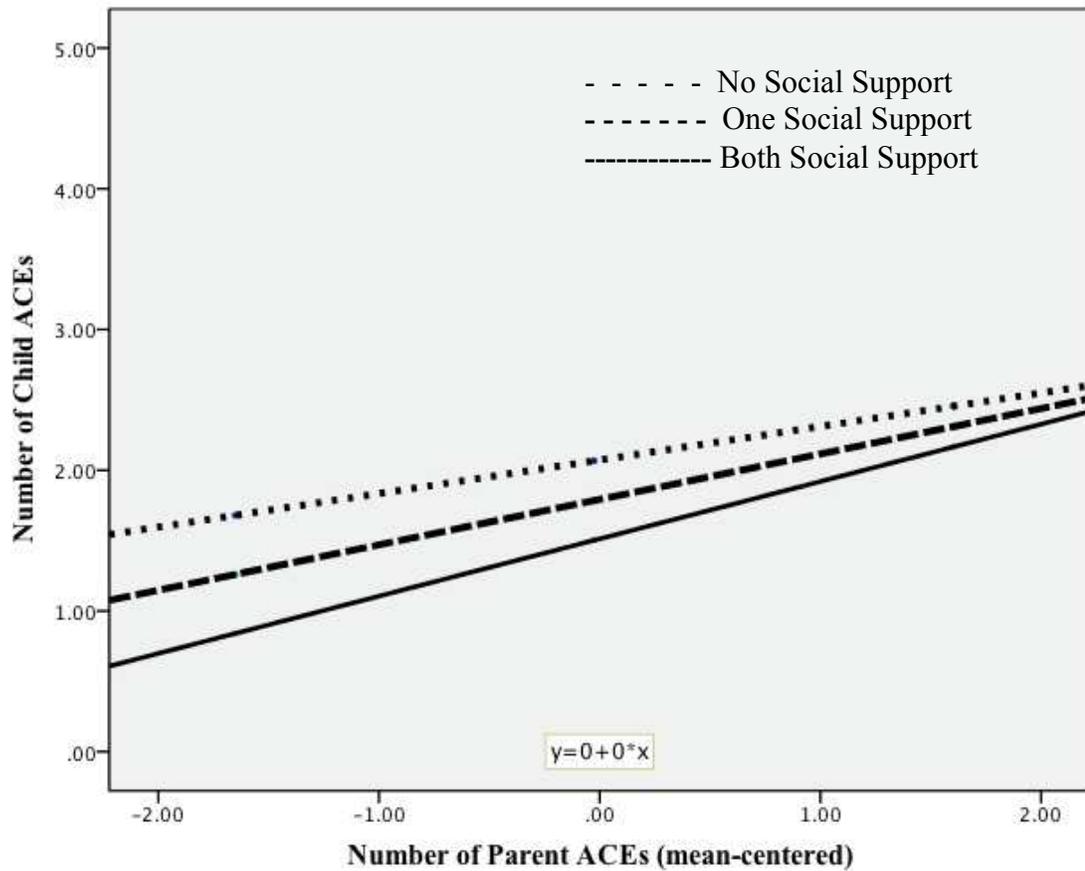


Note. $\chi^2(28, 107) = 22.53, p = .76, RMSEA = .00, SRMR = .052, CFI = 1.00.$

† $p < .10, * p < .05, ** p < .01, *** p < .001$

Figure 4

Association of Parent ACEs and Child ACEs by Social Support Quality



Note. No Social Support = Absence of satisfaction with social support from child's father and not living with a romantic partner; One Social Support = Social support from child's father or romantic partner; Both Social Support = Social support from child's father and romantic partner. Mean ACEs = 2.30.