MATERNAL HISTORY OF CHILDHOOD TRAUMA, PARENTING STRESS
AND HOME ENVIRONMENT PROVIDED FOR CHILDREN

by

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At any given time there are many thousands of mothers in the United States who have a history of traumatic childhood experience. In a community sample of 218 biological mothers the relationship between severity of maternal history of childhood trauma and quality of home environment provided for children was examined. The study also explored the impact of current exposure to violence, current substance use, perceived social support, and avoidant coping style on levels of parenting stress experienced, and asked whether parenting stress mediated the relationship between severity of maternal history of childhood trauma and the quality of home environment provided children. The study was a secondary data analysis, and data were analyzed using hierarchical multiple regression. In this sample, severity of history of maternal childhood trauma was not found to predict quality of home environment provided children. However, increased maternal verbal ability, higher levels of maternal mental health, higher income, and fewer children ≤ 18 years old living in the household did predict increased quality of home environment provided. Increased levels of perceived social support and of maternal mental health predicted lower levels of parenting stress, though current exposure to violence, current substance use, and avoidant coping were not predictive of parenting stress. An increased incidence of potentially traumatogenic experiences in childhood was
positively associated with higher levels of parenting stress, and higher levels of parenting stress, in turn, were associated with a diminished quality of home environment provided children. Implications of findings for future research and for social work policy and practice are discussed.
Chapter 1. Introduction

Definition and Scope of the Social Problem

The prevalence of family violence, child abuse and neglect, and parental substance abuse in the contemporary United States results in substantial numbers of American women whose lives, often from a very early age, have been impacted by potentially traumatogenic experiences. Further, the majority of these women are eventually responsible—and often solely responsible—for the parenting of their own offspring, and so for providing a home environment that will optimize their children’s development. However, we know relatively little about the characteristics of the home environments provided to children by the many mothers with a history of childhood trauma. This gap in our knowledge in many cases necessarily limits the efficacy of social work interventions designed to address those parental behaviors and environmental conditions in the home which undermine optimal child development and family functioning. The current study is intended to begin to fill this gap.

It is important to recognize that the specific developmental trajectory and subsequent adulthood of any given woman with a history of childhood exposure to traumatogenic experience will vary (see, for example, Briere & Jordan, 2009; Fassler, Amodeo, Griffin, Clay, & Ellis, 2005; Najavits, Weiss, & Shaw, 1999; Neigh, Gillespie, & Nemeroff, 2009; Owens & Chard, 2003; Rodgers, Lang, Laffaye, Satz, Dresselhaus, & Stein, 2004; Silverman, Reinherz, & Giaconia, 1996; van der Kolk & McFarlane, 1996). A woman’s adult capacity to function will be determined by the complex and unique interaction of her innate psychobiological characteristics, the nature of specific trauma-
inducing experience(s), and the presence or absence of protective factors—a supportive adult mentor, for example, or educational advantages—that may mitigate the impact of traumatic experience over the course of her development. In addition, specific adult roles and responsibilities, the availability of social support, financial resources, and access to needed services, as well as environmental factors such as neighborhood safety, will further determine what sort of home environment a mother who has experienced trauma ultimately provides for her child. Finally, a woman’s own history with respect to mental health issues, substance use, and physical health will also impact upon her particular set of parenting skills and capabilities (Leonard & Eiden, 2007; Saltzberg, 2000; Suchman, McMahon, Decoste, Castiglioni, & Luther, 2008). It is of particular concern that women with childhood histories of trauma and PTSD symptomatology frequently develop co-occurring substance use disorders as well, thus further undermining their ability to care for and protect either themselves or their children (Lisak & Miller, 2003; Newmann & Sallmann, 2004; Schuck & Widom, 2001; Simpson & Miller, 2002).

It is difficult to determine with precision just how many mothers in the United States have a history of childhood trauma, especially given the many definitional and methodological discrepancies across studies, which tend not to differentiate between exposure to potentially traumatogenic experiences vs. experiencing an event as traumatic. That is to say, at the level of each individual child, the fact of having been exposed to a potentially traumatizing experience does not necessarily equate to that child’s being traumatized and/or to experiencing symptoms of PTSD, though of course it is well established that it frequently does (see, for example, Hawkins & Radcliffe, 2006; Rodgers, Lang, Laffaye, Satz, Dresselhaus, & Stein, 2004). For purposes of the present
study, “history of childhood trauma” is being defined according to the criteria for emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect as specified by the Childhood Trauma Questionnaire (Bernstein & Fink, 1998, p.2).

*Emotional abuse* refers to verbal assaults on a child’s sense of worth or well-being, or any humiliating, demeaning, or threatening behavior directed toward a child by an older person. *Physical abuse* refers to bodily assaults on a child by an older person that pose a risk of, or result in, injury. *Sexual abuse* refers to sexual contact or conduct between a child and older person; explicit coercion is a frequent but not essential feature of these experiences. *Emotional neglect* refers to the failure of caretakers to provide a child’s basic psychological and emotional needs, such as love, encouragement, belonging, and support. *Physical neglect* refers to the failure of caregivers to provide a child’s basic physical needs, including food, shelter, safety and supervision, and health.

Methodological issues aside, national studies tracking childhood sexual abuse in adult women have found occurrence rates ranging from 3% to 37% (Fassler, Amodeo, Griffin, Clay, & Ellis, 2005). In a study which attempted to track rates of childhood sexual abuse at the national level, Molnar, Buka, and Kessler (2001) found that one out of every seven women (14%) reported childhood sexual abuse, while Briere and Elliot (2003) determined a national rate of 32% of women with a history of childhood sexual abuse and 20% of women with a history of childhood physical abuse (see also Finkelhor & Jones, 2006; Jones & Finkelhor, 2001, on methodological difficulties inherent to quantifying national rates of child maltreatment, and rates of child sexual abuse in particular).

None of these studies, however, differentiate between women who are mothers
and women who are not. According to the U. S. Census Bureau (Dye, 2005), four out of every five American women (81%) has at least one child by the age of 44 (the majority of women complete childbearing by age 45), and of course many women live in families with children other than their own to whom they relate and care for in a variety of ways. Interestingly, there is apparently little recent data available as to the total number of women nationwide who are actively mothering minor children. While the Census Bureau tracks age and gender, related fertility rates, and household composition at the aggregate level, it does not appear to count or even interpolate the number of mothers who are still caring for minor children in their home (see, for example, U. S. Census data from the Fertility Supplement to the June 2004 Current Population Survey, as summarized by Dye, 2005). According to the U. S. Centers for Disease Control and Prevention (CDC) (2007), in 2001 (based on U. S. Census data from 2000) there were an estimated 80.5 million women in the United States who were mothers, but this number included all mothers, many of whose children would have been adults.

As there is little evidence to support the notion that women with histories of childhood trauma disproportionately avoid bearing and/or mothering children, in spite of a tendency to express misgivings about their own parenting abilities (see, for example, Armsworth & Stroneck, 1999; Gelinas, 1983; Saltzberg, 2000; Tracy & Johnson, 2006), it can be inferred from what data is available that there are many thousands of mothers across the country with a history of potentially traumatic childhood experience at any given time. In 2004, for example, 872,000 children were confirmed to have been maltreated by Child Protective Service (CPS) agencies across the United States (Child Welfare League of America (CWLA), 2007); 52% of these maltreated children were
girls, at least 80% of whom are likely to bear children during their adulthood (U. S. Census Bureau, 2004, in Dye, 2005; U.S. Department of Health and Human Services, Administration on Children, Youth, and Families, 2006). Thus, as of 2004 there were 362,720 girls within the American child welfare system alone who had been identified as having been maltreated, most of whom will grow up to be mothers with histories of exposure to potentially traumatizing experiences. It should be noted that these numbers do not include the many little girls who experience corrosive and traumatic life events but who, for a variety of reasons, do not enter the child welfare system.

Further, many women experience interpersonal violence within the context of their intimate relationships and families of procreation once they are adults, and this in turn exposes their own children to potentially traumatic experiences as well. As many as 4.8 million adult women are physically and/or sexually assaulted by an intimate partner each year, and as many as 2.9 million men are physically assaulted by theirs, and many of those victimized are parents, with violence perpetration in heterosexual couples most often being bidirectional in nature (CDC, 2009; Dutton & Corvo, 2006; Straus, 1999). It is estimated that in the United States each year a minimum of 1.5 million children witness domestic violence, and possibly as many as 3.3 million are affected (CWLA, 2003). Many of these children inadvertently suffer physical injury during violent physical altercations between their parents (CDC, 2006; U. S. Department of Health and Human Services, Office on Child Abuse and Neglect, 2003). Moreover, it has been found that those women affected by interpersonal violence in the context of family, whether as victim or perpetrator, are also more likely to maltreat children in the home (Jones, Gross, & Becker, 2002). While the extent of such overlap is difficult to determine, it is thought
that in 30-60% of homes where domestic violence is occurring, child abuse and/or neglect is occurring as well (U. S. Department of Health and Human Services, Office on Child Abuse and Neglect, 2003; see also Jouriles, McDonald, Slep, Heyman, & Garrido, 2008, for a discussion of how definitions of child maltreatment, and thus co-occurrence rates, vary widely across studies).

Both intimate partner violence perpetration and child maltreatment are, in turn, highly correlated with parental substance abuse and addiction (CWLA, 2007; Kyriacou et al, 1999; O’Farrell, Van Hutton, & Murphy, 1999; Sedlak & Broadhurst, 1996). However, definitive numbers as to how many substance abusing and/or dependent women are also mothering children are somewhat difficult to come by. The 1995 National Household Survey on Drug Abuse, for example, found that about 15% of all American women of childbearing age were currently abusing alcohol and/or other drugs (Blumenthal, 1998). Based on data collected in 2001, the 2002 National Survey on Drug Use and Health (NSDUH, formerly the National Household Survey on Drug Abuse), estimated that 4% of US mothers, vs. 8% of fathers, met criteria for abuse of and/or dependence on alcohol or an illegal drug within the past year (Office of Applied Studies, Substance Abuse and Mental Health Services Administration (OAS, SAMHSA), 2004). It should be noted that of the household addresses initially screened for the 2001 wave of the NSDUH less than half actually responded, and so the possibility that many more parents who have problems with substances self-selected out of the study cannot be discounted. Further, it is not made clear in the study’s official report just how these percentages vis a vis mothers and fathers with substance abuse/dependence were derived from the data. The 2002 NSDUH study found that approximately 6 million children
lived with one or more parent who abused or was dependent on alcohol and/or other drugs within the past year (OAS, SAMHSA, 2004). The most recent NSDUH report does not specify numbers of parents with substance use disorders or numbers of children living with them; rates of use of alcohol and of illegal drugs by pregnant women is reported, but there is no mention of mothers’ or fathers’ use with respect to children actually born (OAS, SAMHSA, 2008).

Based on data from the 1992 National Longitudinal Alcohol Epidemiologic Survey sponsored by the National Institute on Alcohol Abuse and Alcoholism, Grant (2000) estimates that approximately one in seven American children (1 in 6.6) lives in a household where one or more adults have been actively abusing or dependent upon alcohol within the past year. When a lifetime diagnosis of alcohol abuse and/or dependence is the metric, then approximately one in three of these children (1 in 2.3) are exposed while growing up to some degree of alcohol abuse and/or dependence by one or more adult household member(s) (Grant, 2000). It is likely, then, that about one in four children grow up in households where they are exposed to some degree of adult alcohol abuse and/or dependence; it should be noted that these numbers do not include potential exposure to alcohol use by relatives, friends, and others who are not considered to be residents of those homes (Grant, 2000).

Whatever the specific stressors and conflicts inevitably present in any family’s life, the cognitive distortions and disinhibition of aggressive impulses inherent to ongoing substance abuse inevitably exacerbate and confuse the situation. Parental substance abuse and/or dependence often results in the disruption of family roles, routines and rituals (Griffin, Amodeo, Fassler, Ellis, & Clay, 2005; Olson, O’Connor, & Fitzgerald,
2001; Steinglass, Bennett, Wolin, & Reiss, 1987; Tracy & Martin, 2007), increases the risk of unreliable and/or neglectful caretaking and of child maltreatment (Cash & Wilke, 2003; Schilling, Mares, & El-Bassel, 2004; VanDeMark, Russell, O’Keefe, Finkelstein, Noether, & Gampel, 2005), and undermines the interpersonal predictability and emotional safety necessary to optimal child-parent attachment, and to healthy developmental outcomes across the lifespan (Dube, Anda, Felitti, Croft, Edwards, & Giles, 2001; Felitti et al, 1998; Garbarino, Eckenrode, & Bolger, 1997; Grant, 2000; Hien & Honeyman, 2000). Finally, rates of co-occurring substance abuse and domestic violence perpetration are thought to range from 23% to as high as 100% (Corvo & Carpenter, 2000; Dutton & Corvo, 2006; Flanzer, 1993; Irons & Schneider, 1997; O’Farrell, Van Hutton, & Murphy, 1999), thus placing the members of these already compromised families at increased risk, especially for any children involved.

Additionally, exposure to violence in childhood is strongly associated with subsequent difficulties in regulating emotion, and with aggressive behaviors towards others (e.g. Dodge, Bates, & Pettit, 1990; Dutton, 1999b; Hanson, Lipovsky, & Saunders, 1994; Karr-Morse & Wiley, 1997; Lewis, 1992; Perry, 1997, 2006; Sappington, 2000; Singer, Miller, Guo, & Flannery; Teicher, 2002). Children who experience or witness such violence also tend to manifest significant emotional, interpersonal, and sexual difficulties in their adult relationships and roles (e.g. Davis & Petretic-Jackson, 2000; Garbarino, 1999; Goodman, Dutton, & Harris, 1997; Harris, 1996; Holtzworth-Munroe, Bates, Smutzler, & Sandin, 1997; Swett, Surrey, & Cohen, 1990; van der Kolk & McFarlane, 1996). Many of them demonstrate substantive neurocognitive deficits in processing information and in problem-solving, thus
undermining their ability to fully develop academic, interpersonal, and work-related skills (e.g. Hawkins & Trobst, 2000; Lewis, Pincus, Feldman, Jackson, & Bard, 1986; Warnken, Rosenbaum, Fletcher, Hoge, & Adelman, 1994).

A number of studies have found that, of those who experience interpersonal violence as a child, about one out of three becomes an adult who then tends to engage in interpersonal aggression (see, for example, Buchanan, 1998; Cerezo, 1997; Egeland, 1993; Pears & Capaldi, 2001; Simons & Johnson, 1998). It should be noted that women, who continue to be responsible for most of the childcare in our society, are very much implicated in this process—in 2007, for example, 38.7% of such child victims were maltreated by their mothers acting alone, 16.8% were harmed by both parents, and 17.9% by their father acting alone (U. S. Department of Health and Human Services, Administration on Children, Youth and Families, 2009; see also CDC, 2009).

Given the foregoing phenomena, mothers with a history of childhood trauma are at increased risk for what is referred to as “parenting stress.” Parenting stress (Abidin, 1992) is a fluctuating level of tension that may arise for any parent when assessing the goodness-of-fit between his/her expectations and goals of “self-as-parent,” vs. his/her ability to actualize those expectations and goals given individual emotional capacity, judgment, behavior patterns, and access to material and social resources. It has been found that levels of parenting stress for mothers may in turn be impacted by a number of factors, such as ongoing exposure to violence, maternal substance abuse, deficits in coping, and perceived lack of social support (see, for example, Chasnoff, Anson, Hatcher, Stenson, Iaukea, & Randolph, 1998; Florsheim et al., 2003; McCurdy, 2005; Nair, Schuler, Black, Kettinger, & Harrington, 2003; Tracy & Johnson, 2006; Tracy & Martin,
The current study proposes to examine possible relationships between maternal history of childhood trauma, parenting stress, selected temperamental, behavioral, and environmental risk factors, and the home environment provided for children.

**Purpose and Overview of the Research Study**

This study is a secondary data analysis of selected data from the first and the fifth year of Dr. Lynn Singer’s study “Cocaine-exposed infants and their mothers” (R01-DA07957), an ongoing longitudinal, prospective cohort study (panel design) of substance abusing mothers and their children conducted at Case Western Reserve University (1998-present), funded by the National Institute of Drug Abuse. The purpose of the present study was to examine how a mother’s history of childhood trauma may be related to the quality of home environment she provides for her children, and to identify possible elements of her contemporary adult experience which may further determine the nature of that relationship. The study’s main outcome variable was the quality of home environment provided by maternal caregivers for their children at age four in terms of dimensions of the Early Childhood version of the Home Observation for Measurement of the Environment (EC-HOME), dimensions such as parental “pride, affection, and warmth,” “modeling and encouragement of social maturity,” and “language stimulation,” for example (Bradley & Caldwell, 1976; see also Bradley & Caldwell, 1979, 1984). The study also examined the impact of these mothers’ current substance use, current exposure to violence, perceived social support, and avoidant coping on levels of parenting stress, and the mediating effect of overall level of parenting stress upon the quality of home environment provided for children.

It should be noted that previous research findings derived from the Singer study
data set have focused mainly on child outcomes as related to prenatal maternal substance use and maternal psychosocial characteristics (see, for example, Linares et al., 2006; Min, Farkas, Minnes, & Singer, 2007; Minnes, Singer, Humphrey-Wall, & Satayathum, 2008; Minnes et al., 2008; Noland, Singer, Arendt, Minnes, Short, & Bearer, 2003; Singer, Arendt, Minnes, Farkas, & Salvator, 2000; Singer, Arendt, Minnes, Farkas, Yamashita, & Kliegman, 1995; Singer et al., 2008; Singer, Salvator, Arendt, Minnes, Farkas, & Kliegman, 2002). However, in continued work related to the original and ongoing longitudinal study, it has been noted by Singer and colleagues that total score on HOME, i.e. quality of home environment provided for child, is a major predictor of child cognitive and language outcome, but this outcome variable has not yet been studied in any detail as related to mothers’ characteristics (Minnes, 2003a, 2003b, 2009). Thus, the current study’s focus on the home environment as an outcome variable in this data set furthers knowledge in this area.

**Relevance of Study Findings to Social Work Practice**

This study was designed to contribute to increased understanding of specific characteristics of the home environments that women with a history of trauma provide for their children. While fully acknowledging the complexity of individual experience, nonetheless specific features of parenting and developmental context are both identifiable and quantifiable, and increasing numbers of researchers are working towards a more concrete understanding of what Bronfenbrenner (1979, 1990, 2001a) has referred to as “the bioecology of human development”—i.e. how and why the interaction of specific psychosocial, physical, and material features of the developing child’s environment help or hinder that child in expressing his or her full potential as an adult.
Further, the focus of this study also contributes to the effort currently ongoing across various disciplines to isolate and explain the specific functional elements which drive causal process in the “intergenerational transmission of violence,” and so answer the question of just what it is that is being “transmitted”—or replicated—in patterns of interpersonal violence that tend to run in families across generations. Specifically, the nature of parenting characteristics as expressed in the child’s home environment was examined, parenting characteristics which may have been shaped by these mothers’ own experience of childhood trauma. Such findings have direct implications for policy and practice in addressing family and child welfare problems—particularly those interrelated problems integral to “the intergenerational transmission of violence”—child abuse and neglect, domestic violence, and substance abuse—within an overall conceptual framework of an “ecology of human development” (Bronfenbrenner, 1986; Cash & Wilke, 2003; Tracy & Johnson, 2006; Garbarino, 1977, 2001).

In summary, the cumulative impact of persisting patterns of traumatogenic behaviors and events across generations is enormous in terms of the resulting physical injury, emotional pain, and social dysfunction at the individual, family, and community levels. Further, policy initiatives and practice interventions to date have not been notably successful in addressing the many interrelated social welfare problems associated with the intergenerational transmission of violence in the United States (Corcoran, 2000; Corvo & Johnson, 2003; Dutton & Corvo, 2006; Gondolf, 1999; Holmes & Slap, 1998; Melton, 2002; National Institute of Justice, 1998; Pandya & Gingerich, 2002; Scott & Wolfe, 2000; Smith, 2002; Starzyk & Marshall, 2003; Weinstein & Weinstein, 2000, 2005). Especially given the many associated political and ideological tensions confusing
and confounding these issues, well-supported research findings as to what processes perpetuate childhood traumatization are key to the development of effective interventions and social policy initiatives so as to address it.

**Statement of the Research Questions**

The study design and methodology was formulated to answer the following research questions.

**Question One (Q1).** What is the nature of the relationship between degree of severity of maternal caregivers’ history of childhood trauma and the quality of the home environment provided for the children they parent?

**Question Two (Q2).** Does 1) severity of current exposure to violence, 2) severity of current substance abuse, 3) current level of perceived social support, and 4) “avoidant” coping style impact upon levels of parenting stress experienced by maternal caregivers with any level of childhood trauma?

**Question Three (Q3).** Does a maternal caregiver’s level of parenting stress mediate the relationship between severity of history of childhood trauma and the quality of home environment provided for children?
Chapter 2. Literature Review and Conceptual Framework

This chapter begins with a literature review tracing the main theoretical and conceptual lines of thought guiding the development of the present study. The literature review is then followed by a discussion summarizing the resulting conceptual model as derived from the literature.

Literature Review

The following literature review is organized in terms of the key theoretical concepts which frame the present study. First, a cross-disciplinary overview of the historical and conceptual context of scientific investigations of parenting and home environment as related to child outcomes and “intergenerational transmission” issues is provided. Next, Urie Bronfenbrenner’s “bioecological theory of human development” as relevant to issues of parenting, quality of home environment provided, and optimal child development is delineated. This is followed by a discussion of quality of home environment provided for children as the expression and manifestation of mothering capacities and skills. Next, the interrelationships between maternal history of childhood trauma, mothering skills, the home environment as developmental context, and child outcome will be examined. Parenting stress as germane to mothering and to the home environment will then be addressed, including a brief discussion of the stress/diathesis model as it pertains to parenting stress and possible moderators of that stress in the home. Finally, mothers’ current exposure to violence, current substance abuse, coping style, and perceived social support with respect to parenting stress and possible implications of quality of home environment will be examined in turn.
The scientific search for causal process in child developmental outcome: As pointed out by Neugeboren (1996), social work theorists and practitioners have, since the advent of the profession, focused on various dimensions of what he refers to as “social environments,” environments created by the dynamic and recursive interactions of human beings with the material and sociocultural features of the environments in which they live. However, in the past social work logic and theory have too often foundered upon what are essentially false dichotomies—micro vs. macro, sociological vs. psychological, the what vs. the why of human behavior—which then undermines the profession’s ability to address the complexities of the human condition it purports to celebrate. Germain and Gitterman (1996), for example, argue persuasively for “ecological thinking” in social work practice, but then undermine their own call to recognize reciprocity and interaction by urging a focus on consequences vs. causes in analyzing human phenomena. Similarly, Specht and Courtney (1994) famously charged contemporary social workers with betraying their professional forebears by moving away from “community-based systems of care” and into private practice settings. However, such “either/or” thinking ignores the reality of the necessary interface between individual function, family health, and community well being.

Such dichotomous thinking is particularly problematic with respect to child development and child welfare issues. Increasingly the research points to the moment-to-moment interaction between a child’s biopsychology and the child’s lived experience of environmental stimuli in determining developmental outcomes (see, for example, Karr-Morse & Wiley, 1997; Perry, 2006; Siegel, 1999; Smith, 1994). These environmental stimuli are sensory (i.e. experiences of seeing, touching, hearing, smelling, or tasting
elements of the physical world), emotional (e.g. experiences of feeling safe or threatened), and social in nature (e.g. experiencing many cheerful visitors in the home, vs. solitary interaction between a socially isolated mother and her toddler). The growing child’s response to the environment, first in utero and then at home during the preschool years, is literally integrated into a still-developing nervous system, setting the course of the child’s developmental trajectory based on a neuropsychological template of capacity and vulnerability which carries into adulthood—a capacity to self-soothe, for example, or a tendency to detach from others.

The notion that family context and family member characteristics impact upon a child’s development, that how a given child’s parents actually “parent” then correlates to adult outcomes for that child, is hardly a new one. Nonetheless, it should be noted that scientific efforts to track and assess parenting behaviors are in fact relatively recent—and even within the context of scientific inquiry the mother-child relationship has been valorized, minimized, or vilified by turns over the years, depending in large part on the sociocultural fashion of the day. Well into the twentieth century, for example, behaviorist John Watson’s (1928) *Psychological Care of Infant and Child* was enormously influential in its often misogynistic formulations as to how best one should rear children. Watson warns against “The Dangers of too much mother love” (p. 69), characterizing maternal response as a first step onto the slippery slope of inevitable self-gratification (1928):

The mother knows the infant can smile and gurgle and chuckle with glee.

She knows it can coo and hold out its chubby arms. What more touching and sweet, what more thrilling to a young mother! And the mother to get these thrills
goes to extreme lengths. She picks the infant up, kisses and hugs it, rocks it, pets it and calls it “mother’s little lamb,” until the child is unhappy and miserable whenever away from actual physical contact with the mother. Then again as we face this intolerable situation of our own creating, we say the child is “spoiled.” And spoiled most children are....Mothers just don’t know, when they kiss their children and pick them up and rock them, caress them and jiggle them upon their knee, that they are slowly building up a human being totally unable to cope with the world it must later live in (p.14, 44).

Watson’s notion of healthy development was that the outcome should be, “a child as free as possible of sensitivities to people and one who, almost from birth, is relatively independent of the family situation.” (Watson, 1928, p.186).

By 1945, however, Spock & Rothenberg were advising a less Machiavellian view of the needs of infants and parents:

...it’s not true—as some people and some doctors say—that babies are always looking for opportunities to get their parents under their thumbs. They do have legitimate needs—for food, for playthings, for physical affection, for comforting when in pain, for reassurance when frightened, for a response to their sociable advances, for an always dependable love, for confidence that when they ask for reasonable help or reasonable pleasure, their parents will pay attention and give some kind of fair reply. To satisfy such needs as these will not spoil a baby or a child (p. 246).

In the late 1950’s Harlow (1959) began to document in research with infant monkeys that prolonged deprivation of maternal nurturing resulted for these animals in
permanent difficulties in forming affectional bonds. By the late 1960’s Bowlby (1969, 1973) had begun to integrate and consolidate much of the work that had been done to date in terms of delineating the infant-caretaker bond as a “secure base relationship,” the disruption or loss of which constituted a source of trauma and potential psychopathology (Waters & Cummings, 2000). Within the past twenty years, research which seeks to integrate attachment theory, developmental neurobiology, and trauma theory has begun to emerge, particularly as related to the etiology of psychopathology and/or perpetration of interpersonal violence (see, for example, Dutton, 1999b; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Hudson & Ward, 1997; Perry, 2006; Smith, 1994), and the notion of attachment has become securely ensconced in much of the contemporary childcare literature written for parents (e.g. White, 1995).

Of particular importance in identifying threats to healthy child development is ongoing work having to do with phenomena of “intergenerational transmission of violence” (ITV)—i.e. investigators seek to identify and understand those maladaptive and/or malevolent patterns of parental characteristics and child raising behaviors (e.g. emotional abuse, physical neglect, domestic violence) which often appear to replicate themselves in subsequent generations of a family line. Much of this research does not look at “mothering” per se, but rather studies the impact on children of generalized categories of parental behaviors, attitudes, and emotional attributes, which may or may not be associated with parental gender in any given study (e.g. the molar concept of “harsh parenting” in Simons & Johnson, 1998).

It should be noted that definitional issues with respect to the study of human violence continue to be a prime source of methodological and interpretational
controversies across disciplines and across studies (see, for example, Garbarino, Eckenrode, & Bolger, 1997; Jones & Finkelhor, 2001; Newcomb & Locke, 2001; Portwood, 1998; Rose & Meezan, 1995; Sedlak & Broadhurst, 1996; Straus, 1999; Straus & Kantor, 2005). For present purposes, however, the following definitions of terms related to child maltreatment, family violence, etc. have been adopted, in keeping with recent efforts in the related fields to standardize and synthesize constructs, units of analysis, etc. so as to translate accurately across disciplines while at the same time capturing maximum concept (Meyerson, Long, Miranda, & Marx, 2002; National Institute of Child Health and Human Development, (NICHD), 2002).

To this end, violence as discussed here, unless otherwise specified, will refer to physical and/or sexual aggression of any kind perpetrated within the context of family and/or intimate relationships, subsuming such related categories as “domestic violence,” “intimacy violence,” “intimate partner violence,” and “family violence,” as well as “child physical/sexual abuse.” Similarly, the term child maltreatment as used here is to be understood as including child physical abuse, child sexual abuse, and child neglect, as well as “emotional abuse” and “exposure to violence.” Exposure to violence is to be understood as victimization by, and/or witnessing of, interpersonal violence (physical and/or sexual).

Historically, researchers have approached phenomena related to the intergenerational transmission of violence (ITV) mainly in terms of social learning and attachment theories, with some attention given to possible socioeconomic and environmental factors as well (e.g. Bandura, 1979; Bowen, 1978; Kagan & Schlosberg, 1989; Miller, 1983, 1990). More recently, however, research findings in the areas of
child neuropsychological development, developmental traumatology, and the neurobiology and neuropsychology of aggression have been brought to bear in explaining the problem (Caspi et al., 2002; Davidson, Putnam, & Larson, 2000; Filley et al, 2001; Gable, 1998; Greene, Lynch, Decker, & Coles, 1997; Lewis, 1992; MacLean, 1985; Teicher, 2002; Smith, 1994; van der Kolk, 2001; van der Kolk, Burbridge, & Suzuki, 1997). Increasingly such research is also beginning to forge links between childhood exposure to violence in the family of origin, a potential vulnerability to the early onset of substance abuse and addiction, and subsequent, related aggressive and violent behaviors towards partners and/or children in the family of procreation (Amen, Yantis, Trudeau, Stubblefield, & Salverstadt, 1997; Anderson, Teicher, Polcari, & Renshaw, 2002; Coffey, Saladin, Drobes, Brady, Dansky, & Kilpatrick, 2002; DeBellis, 2002; Gunnar & Donzella, 2002; Hariri et al, 2002; Sullivan & Gratton, 2002; Vasquez, 1998).

These more integrative studies break new ground in building towards a causal process model capable of accounting for the complexity and variability observable in phenomena of ITV. However, while the overall theoretical construct as it emerges across studies tends to be fairly consistent—i.e., exposure in one generation to developmental stressors, toxins, and/or adverse socializing experiences tends to manifest in replication of similar patterns of behavior, attitudes, and/or psychopathology in the next—the description of the inner workings of those mechanisms sustaining the “transmission” process once certain risk factors appear to have converged is often considerably fuzzier. In other words, we are not yet able to specify, in terms of consistently defined conceptual constructs, clearly identified units of analyses, and standardized methodological strategies, the necessary and sufficient conditions for intergenerational transmission,
although it is nonetheless asserted to have occurred.

Further, relatively few of these studies examine parenting as practiced specifically by mothers, in spite of the fact that women are still primarily responsible for child-rearing in a majority of modern households, and so are most directly involved in creating the day-to-day home environment in which children spend so much of their formative years. Dutton and colleagues have probably examined issues of mothering as implicated in ITV most specifically, finding over a series of studies that many male domestic violence perpetrators have in common the following triad of attributes: 1) repeated experiences in childhood of being shamed by a primary caretaker (usually the mother) 2) a history of childhood exposure to violence, directed towards the male child’s mother and/or himself; and 3) insecure attachment associated with childhood experience of inconsistent and/or absent caretaking (Dutton, 1997, 1999a, 1999b, 2002; Dutton & Holtzworth-Munroe, 1997; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Dutton, van Ginkel, & Starzomski, 1995). This triad of childhood experiences is hypothesized as constituting a traumatizing developmental context, with resulting impairments in affect modulation, impulse control, and higher order cognitive functions which persist into adulthood. However, these studies do not address how these mothers’ childhood experiences and adult stressors may have compromised their own ability to provide their children with a safe and nurturing home environment.

**Bronfenbrenner’s “Bioecological Theory of Human Development.”** As developmental scientist Urie Bronfenbrenner once remarked, “No society can long sustain itself unless its members have learned the sensitivities, motivations, and skills involved in assisting and caring for other human beings.” (Bronfenbrenner, 2001a,
p.14). The conceptual context of the current study is grounded in Bronfenbrenner’s “bioecological theory of human development,” a theoretical construct comprised of interconnecting precepts and principles formulated over his many years as a founding scholar and research scientist in the nascent field of human development Bronfenbrenner, 1973, 1977, 1979, 1986, 1988, 1990, 1992, 2001a, 2001b). It is Bronfenbrenner (1917-2005) who comes closest to articulating the conceptual framework of the present study—his theory is informed by knowledge mined across disciplines, it specifically addresses and integrates ongoing inquiry into definitional and methodological issues, it explicitly seeks to avoid easy recourse to reductionism in describing and explaining human behavior, and it integrates well with ongoing research in a variety of fields having to do with attachment, learning, and human neuropsychological development.

Over the course of a prolific career Bronfenbrenner’s overarching scientific agenda was to identify key characteristics and parameters of healthy development in humans within the context of their formative social and material environments, and then to translate his findings into theoretical and research paradigms capable of supporting and extending further exploration of associated and interrelated phenomena. He generated scores of definitions, theorems, and propositions in an effort to synthesize and disseminate his research findings about how human beings best grow into emotionally healthy and productive adults, and about environmental risk factors which tend to thwart that growth. Ultimately Bronfenbrenner applied his findings in devising policy initiatives and intervention strategies at various levels—for example, he was a co-founder of the federal Head Start program.

*Bronfenbrenner’s theoretical concepts.* Bronfenbrenner was among the first of
the developmental scientists to fully delineate and explore the concept that a child’s “ecology of human development” is necessarily comprised by 1.) emotional and social interactions between significant adults and the child, and 2.) opportunities provided by those adults within and through the child’s environment for experiential learning about objects, ideas, and events. Further, he asserted that the study of child development ought to include both of these dimensions of a child’s developmental context (Bronfenbrenner, 1989):

....I presumed to challenge the then-prevailing conventions in our field by describing the developmental research of the day as “the study of the strange behavior of children in strange situations with strange adults for the briefest possible period of time.” Instead I argued, as if it were simply a matter of choice, that we should be studying development in context: that is, in the actual environments in which human beings live and grow. I then proceeded...to lay out a theoretical framework for what I called the “ecology of human development,” succinctly defined as “the scientific study of development as a function of the progressive, reciprocal interplay, through the life course, between an active, growing human organism and the changing properties of its environment, both immediate and more remote...” (p. 95)

Within the context of his theory of human ecology Bronfenbrenner defined “human development” as, “...the phenomenon of continuity and change in the biopsychological characteristics of human beings both as individuals and as groups. The phenomenon extends over the life course across successive generations and through historical time, both past and present.” (Bronfenbrenner, 2001a, p. 3). Bronfenbrenner
described human development in terms of reciprocal and iterative processes between the child and elements of his/her environment—both animate and inanimate—and conceptualized the individual as “both the product and partial producer in the process of his or her own development” (Bronfenbrenner, 1989, p. 96). He credits his derivation of this “ecological paradigm for development in context” as a manipulation of social psychologist Kurt Lewin’s original 1935 formulation “B = f(PE) [Behavior is a joint function of person and environment],” his own version being “D = f(PE) [Development is a joint function of person and environment]” (Bronfenbrenner, 1992).

Bronfenbrenner also references social psychologist Kurt Lewin (1890-1947), a key mentor and colleague, in explaining the evolution of his own formulation of a “human ecology” comprised by a series of “nested structures”—structures he categorized as microsystems, mesosystems, exosystems, and macrosystems (Bronfenbrenner, 1979). Bronfenbrenner defined a “microsystem” as an “immediate situation” comprised by an integration of human activity and interconnectivity in a specific and self-contained setting (e.g. home, school), and it is of course this system in the lives of mothers and their children that the present study focuses on. He defined a “mesosystem” as a “system of interrelated microsystems” (e.g. parent-teacher conference; parent volunteering in child’s Sunday school), an exosystem as any setting or entity in which a child is not directly involved, but which nonetheless impacts that child’s well-being (e.g. parent’s workplace, local school board), and a macrosystem as encompassing all of these systems so as to constitute “a given culture, subculture, or other extended social structure” (Bronfenbrenner, 1989, p 101).

*Key propositions of Bronfenbrenner’s theory of human development.* The overall
shape and scope of Bronfenbrenner’s bioecological theory of human development continued to evolve over the course of his career, its precepts and formulations meticulously refined, reformulated, and reworded in various of his works up until the time of his death in 2005. However, by the turn of the current century Bronfenbrenner had clarified and refined the basic propositions that structure the theory; those that pertain directly to the current study are summarized as follows (those disregarded here have to do with the elderly adult within the family system, and with research philosophy) (Bronfenbrenner, 2001a).

**Proposition I.** Human development is a process which emerges from a child’s immersion in and response to both phenomenological (e.g. impression of and feelings about a mother’s angry tone of voice) and experiential aspects (e.g. throwing a ball on a hot summer day) of the immediate environment.

**Proposition II.** Optimal human development is driven by regular, “enduring,” and predictable access to and participation in what Bronfenbrenner terms “proximal processes,” defined as “progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment” (Bronfenbrenner, 2001a, p. 6). Bronfenbrenner also described a “proximal process” as an interactive and reciprocal “transfer of energy” between a developing child and the people, animals, objects, images, symbols and sounds comprising that child’s environment (Bronfenbrenner & Evans, 2000). Examples of such proximal processes in the home environment include a mother talking to her baby, a father tucking his child into bed, an older sibling including his younger sister in a game, a toddler’s access to an intriguing toy, etc.
Proposition III. The specific nature and characteristics of the set of proximal processes shaping a given individual’s developmental trajectory vary over time as a function of ongoing interaction between unique aspects of 1) the developing child/person, 2) the environmental context(s) in which development is occurring, 3) the nature of the developmental outcome(s) or dimension(s) being activated/impacted, and 4) the cumulative experiential and developmental gestalt to date—i.e. the “continuities and changes occurring in the environment over time, through the life course, and during the historical period in which the person has lived” (Bronfenbrenner, 2001a, p. 7).

Propositions IV and V. Unlike many of his more ornate formulations, Bronfenbrenner’s Propositions IV and V are in themselves summarizations and extensions of the foregoing propositions. They are so succinctly stated that they do not easily lend themselves to paraphrase, and so are simply quoted in their entirety, as follows (2001a, p. 9):

(IV) In order to develop—intellectually, emotionally, socially, and morally—a child requires, for all of these, the same thing: participation in progressively more complex activities, on a regular basis over an extended period of time in the child’s life, with one or more persons with whom the child develops a strong, mutual emotional attachment, and who are committed to the child’s well-being and development, preferably for life.

(V) The establishment of a strong mutual emotional attachment leads to internalization of the parent’s activities and expressed feelings of affection. Such mutual ties, in turn, motivate the child’s interest and engagement in related activities in the immediate physical, social, and—in due course—symbolic
environment that invite exploration, manipulation, elaboration, and imagination.

**Proposition VI.** In order for the various environmental elements essential to optimal child development—increasingly complex interactions, for example, and mutual emotional attachment—to coalesce in maximally effective and well-integrated “proximal processes” between the primary caretaker and the child, another adult, or *third party*, must be present on a regular basis. This other adult, “assists, encourages, spells off, gives status to, and expresses admiration and affection for the person caring for and engaging in joint activity with the child” (Bronfenbrenner, 2001a, p. 10). While Bronfenbrenner tends to argue that a child will be exposed to more diversity in growth-enhancing experience if the “third party” is of the opposite sex from that of the primary caregiver, his main concern is that there be adult social support and affirmation for a caretaker regardless of the gender or relational status of the source (Bronfenbrenner 1990, 2001a, 2001b). Thus, a “third party” might be a relative, a friend or neighbor, a church member, or even a professional affiliated with a child care facility, school, or social service agency. Bronfenbrenner further stresses that, while the nurturance provided to the child by the “third party” is important, what more crucial is the quality of emotional and instrumental support provided the primary caretaker of the child.

**Proposition VIII.** Human beings continue to develop over the entire life course, and the relationship between the development of parent(s) and child is recursive and interactive. That is, just as the temperament and behaviors of a parent profoundly affects a child’s development, so too the temperament and behaviors of a child over the course of its development will in turn impact a parent’s development over time.

Towards the end of his career Bronfenbrenner expressed growing alarm about
what he perceived as increasing “chaos”—adverse societal pressures, socially deprived developmental contexts, and day-to-day disorganization—in the home, school, and work environments of growing numbers of American families and their children (2001a; 2001b; see also 1986; 1990). Bronfenbrenner & Evans describe the salient dimensions of such “chaotic systems” as follows (2000, p 121):

….Chaos integrates the various elements involved in exposure, and foreshadows its role in the bioecological model in terms of what is called ‘chaotic systems’. Such systems are characterized by frenetic activity, lack of structure, unpredictability in everyday activities, and high levels of ambient stimulation. Background stimulation is high, and there is a general lack of routinization and structure in daily life. The environment is also a major source of interruption of proximal processes in the form of residential noise, crowding, and classroom design (e.g. open vs. traditional classrooms).

To summarize, Bronfenbrenner conceptualized such chaos in the developmental environment as interfering with key proximal processes, and so undermining the child’s ability to develop emotionally, socially, and intellectually. At the end of his career Bronfenbrenner increasingly began to characterize human developmental outcome as a function of the dynamic interaction between 1.) the quality of the child’s immediate environment(s) in terms of available resources, and 2.) the balance between competence vs. dysfunction as demonstrated by the child with respect to a given developmental dimension or skill set (Bronfenbrenner, 2001b). Bronfenbrenner defined “competence” as the ability to acquire and then continue to develop the capacity to “conduct and direct one’s own behavior across situations and developmental domains”; he defined
“dysfunction,” then, as “recurrent difficulties in maintaining control and integration” of one’s own behavior (Bronfenbrenner & Evans, 2000, p. 118). It was Bronfenbrenner’s fear that growing chaos in many children’s lives was tipping the balance for many of them towards dysfunction rather than competence in their own behaviors and emotional and intellectual processes, particularly in their abilities to understand and empathize with others, and so to effectively nurture and socialize their own children as adults, what he refers to as “re-creating social development” (Bronfenbrenner & Evans, 2000).

The impact of Bronfenbrenner’s bioecological theory of human development continues to reverberate through work done in a variety of fields having to do with child development and child welfare. Garbarino, for example, Bronfenbrenner’s contemporary and colleague, has devoted his academic career to the study of “the human ecology of child maltreatment,” and to the various ways that violence at every level of society—micro (interpersonal violence), meso (school, community violence), and macro (nations at war)—affects the lives of our children (e.g. Garbarino, 1977; 1999; 2001; Garbarino, Eckenrode, & Bolger, 1997). Collins, Maccoby, Steinberg, Hetherington, & Bornstein (2000) cite Bronfenbrenner in arguing for the substantive contribution of parenting and environmental characteristics in the expression of a child’s genetic “nature.” Turkheimer and colleagues reference Bronfenbrenner in their seminal study of socioeconomic status as a modifier of heritability of IQ in young children (Turkheimer, Haley, Waldron, D’Onofrio, & Gottesman, 2003). Cash & Wilke (2003) explicitly base their “ecological model of maternal substance abuse and child neglect” on Bronfenbrenner’s 1979 ecological model, and consider substance use history of the mother to be one element of the child’s microsystem.
Similarly, in the present study the home environment a mother creates for her child—i.e. the child’s microsystem—was conceptualized as both the expression and an end result of that mother’s own developmental context and experiences while growing up, current risk and/or protective factors in her adult environment(s), and access to basic social and material supports. In Bronfenbrenner’s terms, then, a mother’s ability to create a nurturing and stimulating microsystem for the child will depend on the balance of “competence” vs. “dysfunction” she brings to her mothering, teaching, and encouragement of the child in the home environment.

**Quality of Home Environment Provided Children.** Given Bronfenbrenner’s bioecological theory of human development, the home environment provided for a child is to be understood as a manifestation of parenting ability, including the capacity to access and deploy instrumental and material resources. The following discussion of home environment as both developmental context and a direct manifestation of mothering characteristics and skills is grounded in terms of dimensions of the current study’s outcome variable “home environment provided for children” as measured by the Early Childhood Home Observation for Measurement of the Environment Inventory (EC-HOME)—dimensions such as parental warmth and acceptance, learning stimulation, and parental modeling, for example (Bradley & Caldwell, 1976, 1979, 1984). However, before describing characteristics of mothering and home environment thought to be essential to optimal child development, the historically contentious issue of the relative importance of “nature vs. nurture” in human development—i.e. assertions as to differential (and therefore hierarchically ranked) contributions to child outcome by genetic “versus” environmental factors—will be briefly addressed, as follows.
Environmental factors as inherent to variation in expression(s) of genetic capacity in human development. There is emerging scientific consensus that child developmental outcomes are the result of a myriad of complex interactions between both genetic and environmental factors over time, and therefore both genes and environment are equally important in this process (Collins, Maccoby, Steinberg, Hetherington, & Bornstien, 2000; Cozolino, 2006; Perry, 2009; Siegel, 1999). Genetic inheritance has often been credited as accounting for up to 50% of the variance in a given human characteristic or behavior, the assumption being, therefore, that environmental factors account for the remaining 50% (see, for example, Felitti et al, 1998). However, increasingly sophisticated research methodologies in the study of child development, parenting, and environmental context indicate that studies which rely solely on additive models of gene x environment (G x E) interactions, which focus only on main effects between variables, or which assume that genes function the same in different environments may in fact underestimate the contribution of environment to child developmental outcomes (Collins, Maccoby, Steinberg, Hetherington, & Bornstien, 2000).

A number of recent studies indicate the central importance of characteristics of home environment in determining child (and later adult) cognitive, emotional, and behavioral outcomes. Kaufman et al. (2006), for example, found interactions between genes (BDNF, 5-HTTLPR), maltreatment history, and level of social support to be predictive of depression in children. Ducci et al. (2008) found an interaction between genetic (MAOA) type and childhood sexual abuse to predict alcoholism and antisocial personality disorder in adult women. Caspi et al. (2003) found that the relationship between childhood maltreatment and depression in adulthood was mediated by
interaction with variations in the serotonin transporter (5-HTT) gene (see also Risch et al., 2009, for a critique of these findings via a meta-analysis of subsequent attempts to replicate the Caspi study). Turkheimer, Haley, Waldron, D’Onofrio, & Gottesman (2003) found that socioeconomic status impacted the heritability of IQ in children at age 7, and Chasnoff et al. (1998) found that home environment was a strong predictor of cognitive development at age 3 in children prenatally exposed to drugs.

These studies, among others, point to the centrality of both environmental and genetic factors in determining the developmental trajectory of a given individual over time, and therefore to the importance of identifying what sorts of childhood environments enhance optimal expression of genetic potential during the process of development.

*Characteristics of home environment, including mothering behaviors, which promote optimal child development.* In explaining their derivation of items for the Home Observation for Measurement of the Environment-Early Childhood version (HOME-EC), Bradley & Caldwell (1979, p. 235) remarked that, “…a substantial percentage of developmental problems stem from inadequacies in the social/cognitive environment.” They further asserted that, based on the extant empirical data, optimal child development is supported by certain fundamental and necessary experiences (Bradley & Caldwell, 1979):

…Included are such things as the importance of an opportunity to form a basic attachment to a mother or mother substitute; an emotional climate characterized by mutual pleasure, sensitive need gratification, and minimization of restriction and punishment; a physical environment that is both stimulating and responsive, offering a variety of modulated sensory experience; freedom to explore and master
the environment; a daily schedule that is reasonably orderly and predictable; and an opportunity to assimilate and interpret experience within a consistent cultural milieu (p. 236).

In later writings Bradley & Caldwell described “caregiving” as a process of providing external regulation for a child, and as consisting of five primary emotional and behavioral dimensions: provision of “sustenance,” “stimulation,” “support,” “structure,” and “surveillance” (1995a, 1995b). Further, they conceptualized the process of caregiving as integral to—and constitutive of—the home environment of the child, stating, “…it would seem that caregiving could usefully be thought of as a set of environmental actions performed by a caregiver or environmental conditions arranged by a caregiver which assist or impede the child carrying out his/her own functions” (Bradley & Caldwell, 1995a, p. 40). These “environmental actions” range from the more concrete—for example, provision of nourishing food, warmth, and shelter (“sustenance”), and ensuring physical safety (“surveillance”)—to the more intangible and psychologically complex, such as reading a bedtime story (emotional “support,” “stimulation,” and “structure”).

Bradley and Caldwell’s conceptualization of caregiving as a process of providing external regulation crucial to optimal child development is supported by what we now know about the interrelationship between quality of nurturance by a primary caregiver(s) and a child’s subsequent neurophysiological and psychological development (see, for example, Cozolino, 2006; Perry, 2009; Siegel, 1999; Belsky, 1984; see also Bowlby, 1969, 1973). Perry (2009) notes that bonding, attachment, interpersonal communication, and a sense of belonging are intimately involved in the modulation of stress in humans:
At birth, the developing stress-response networks in the brain...are rapidly organizing. The primary source of the patterned somatosensory interactions that provide the organizing neural input to the developing stress-response system is the primary caregiver....The primary caregiver, through consistent, nurturing, and predictable responsive caregiving, provides the patterned, repetitive neural stimulation...for the infant’s developing brain required to build in an adaptive and flexible stress-response capacity (self-regulation) as well as healthy attachment capabilities. If the caregiver is depressed, stressed, high, inconsistent, or absent, these two crucial neural networks (stress-response and relational) develop abnormally. The result is a child more vulnerable to future stressors and less capable of benefiting from the healthy nurturing relational supports that might help buffer future stressors or trauma. (p. 246-247)

As a child moves through various developmental stages, an effective primary caregiver must continue to provide consistent nurturance, though the “actions, objects, events, and conditions” provided to enrich the child’s experience will change over time (Bradley, 2004, p. 244). An effective maternal caregiver, then, will continue to provide her growing child with a home environment characterized by consistent warmth and acceptance, access to nourishing food, warm clothing, and well-organized shelter, and careful supervision so as to ensure emotional and physical safety—but in addition, she would be mindful of the child’s ongoing need for verbal interaction, stimulation of learning through a variety of experiences, and exposure to adult modeling of prosocial behavior (Bradley & Caldwell, 1976, 1979, 1984).

**Impact of history of childhood trauma on mothering characteristics and**
behaviors. The maltreatment of little girls will necessarily reverberate into their adult role and function as mothers to their own children. However, most studies which examine sequelae of childhood trauma in adult women focus on the more immediate impact of child maltreatment upon the female victims themselves, rather than on any possible impact on these women’s own children. Thus, relatively few studies to date have looked specifically at mothers who have experienced childhood trauma in terms of differentials in their mothering characteristics and practices—and fewer still examine these differentials in terms of the home environment they provide for their children.

What follows is first a brief description of what is currently known about the effects of childhood trauma on women in general, and then of what has been found about its effects on mothering more specifically.

**Psychobiological effects of childhood exposure to traumatogenic experience.**

Exposure as a child to potentially traumatizing experiences often results in adverse physical, behavioral, and mental/emotional sequelae in adulthood. As recently summarized by Briere & Jordan (2009), these may include cognitive distortions, low self-esteem, and self-blame, as well as symptoms of anxiety, depression, and both clinical and subclinical symptoms of Posttraumatic Stress Disorder (PTSD). Childhood experiences of trauma are associated with substance abuse and dependence (Lisak & Miller, 2003; Min, Farkas, Minnes, & Singer, 2007; Najavits, Weiss, & Shaw, 1999; Schuck & Widom, 2001) and with poor health habits and increased risk for serious disease in adulthood (Felitti, Anda, Nordenberg, Williams, Spitz et al., 1998).

However, as previously noted, a given girl or woman’s response to traumatogenic experience is highly individual. This is because response to trauma at the individual level
is determined by a multiplicity of risk vs. protective factors unique to that individual’s biological, developmental, and psychosocial context and environment, as well as by the type, severity, duration, and timing of the traumatic experience(s) (see, for example, Briere & Jordan, 2009; Caspi et al., 2002; Fassler, Amodeo, Griffin, Clay, & Ellis, 2005; Meyerson, Long, Miranda, & Marx, 2002; Molnar, Buka, & Kessler, 2001; Neigh, Gillespie, & Nemeroff, 2009; Perry, 2002, 2009; Perry & Pollard, 1998; Schuck & Widom, 2001). Regardless of the nature of specific episodes of maltreatment, the adverse effects of traumatogenic experiences tend to be cumulative over time (see, for example, Dube, Anda, Felitti, Croft, Edwards, & Giles, 2001; Felitti et al., 1998; Garbarino, 1977, 2001; Hawkins & Radcliffe, 2006; Molnar, Buka, & Kessler, 2001). As observed by Rodgers, Lang, Laffaye, Satz, Dresselhaus, & Stein (2004):

…it appears that exposure to multiple types of maltreatment should be viewed as additive in terms of risk of future negative health outcomes. Indeed, such a practice likely provides a better representation of the actual experiences of the child. A child would be unable to separate the differential impact of maltreatment experiences; such experiences contribute to the broader environmental context that ultimately shapes the child’s sense of self and world view.” (p. 584)

*Childhood trauma and associated effects on mothering.* Gelinas (1983) noted that women who have been victims of sexual abuse in their families of origin have often been parentified in those families as well, and so may enter their own adult relationships and caretaking roles in a state of emotional exhaustion, with low self-esteem, difficulties in asserting their own needs, and ambivalent, confused feelings about emotional closeness with others, including their own children. As mothers they may have
difficulties in balancing what Gelinas refers to as “obligation and entitlement” in relationships (1983, p. 323), thus complicating their ability to provide structure, enforce rules, and maintain healthy boundaries with respect to their children, as well as to avoid feelings of being overwhelmed in the parenting role. This may result in extremes of either over functioning in the maternal role or of avoiding responsibilities and tasks related to child rearing. On a related note Henry & Wang (1998) assert that early exposure to extreme stress (such as the stress of child maltreatment and/or neglect), may so disrupt neurological development in key areas in the brain that the ability to affiliate with and/or care for others is permanently altered, creating “a permanent bias towards self-preservation” (p.863) which then interferes with the ability to nurture offspring in adulthood (see also MacLean, 1985).

In a qualitative study, Armsworth & Stronck (1999) found that women who had themselves been raised in “malevolent socializing environments”—i.e. in families characterized by violence and abuse, mental illness, and lack of emotional support and nurturance—tended to doubt their own ability to keep their children safe in the world. This was for many of these mothers a source of extreme anxiety, and resulted in hypervigilance, and overcontrolling behavior in their mothering role. Conversely, however, many reported that they found themselves behaving impulsively or abusively in mothering their own children, inadvertently recreating their own childhood experiences. Many of these women also reported feeling emotionally detached from their children, a result of their longstanding tendency to devolve into dissociative states and emotional numbness when stressed. Lacking stable and positive parental role models, a common strategy for these mothers was to parent “by doing the opposite” of what they had
observed in their families growing up, and they often felt inadequate and overwhelmed in caring for their children in such a reactive manner. In a reprise of clinical impressions in working with mothers with histories of childhood sexual abuse Saltzberg (2000) reiterates many of the same findings as Armsworth & Stronk, but mentions as well that many mothers experience particular difficulties in relating to a child when that child reaches the same age as when the mother’s experience of abuse began (e.g. the child’s age-specific behaviors or mannerisms may remind the mother very strongly of situations related to her own abuse, stirring up powerful and disturbing emotional reactions).

Pears & Capaldi (2001) have found that a history of being abused as a child is predictive of subsequent abuse of offspring, and that degree of severity of abuse in one generation may be reflected in severity of abusive behaviors in the generation that follows. Newcomb and Locke (2001) determined that experiences of childhood maltreatment correlate with deficits in parenting as practiced by those same children as adults (both female and male). They found that a history of childhood neglect within the family (absent physical/sexual abuse) was predictive of poor parenting skills in mothers, while a childhood history of sexual abuse was predictive of aggressive mothering practices. Family neglect appeared to more substantively and negatively impact parenting style in mothers than in fathers. Avakame (1998) found that childhood exposure to violence, mediated by a diminished capacity for self-control in the developing child, is predictive of psychological aggression by adult females.

Finally, persistent symptoms of depression, general anxiety, and/or PTSD are common adult sequelae of traumatogenic experiences in childhood, and these symptoms in and of themselves may make consistent and well-regulated mothering behaviors
difficult to maintain, even when impulse control or parenting knowledge per se are not
the issue (Appleyard & Osofsky, 2003; Tracy & Johnson, 2006). For example, a
depressed mother’s lack of restful sleep may lead to a pervasive irritability which then
erodes her ability to interact with her child in a nurturing manner, or the dissociation
related to PTSD may result in periods of emotional withdrawal from her children.
Reflecting the disruptive impact of symptoms of mental illness on normal mothering
processes, maternal depression has been associated with attachment insecurity in
preschoolers (Teti, Gelfand, Messinger, & Isabella, 1995), while “frightening maternal
behaviors” related to mothers’ experiences of trauma and/or loss has been associated with
disorganized attachment in childhood (Main & Hesse, 1990; Schuengel, Bakermans-
Kranenburg, & IJzendoorn, 1999; van IJzendoorn, Schuengel, & Bakermans-Kranenburg,
1999).

Parenting stress. In seeking to identify and articulate “the determinants of
parenting behavior” Abidin (1982, 1992, 1995) developed the concept of “parenting
stress,” based on the work of Lazarus & Folkman (1984), Crittenden (1990), and Belsky
1984, among others. Abidin defined “parenting stress” as the inherent tension
experienced by a parent when evaluating their own internalized (and often idealized)
notion of how they should be fulfilling the parental role, as opposed to what they are
actually doing as a parent in any given situation (1992):

Parenting stress is, thus, the result of a series of appraisals made by each parent
in the context of his or her level of commitment to the parenting role. Conceptually, parenting stress is viewed as a motivational variable which
energizes and encourages parents to utilize the resources available to them to
support their parenting. The richness or paucity of resources available naturally plays a key role in the ultimate parenting behavior. (p. 410)

By “resources” Abidin (1992) was referring to both emotional and material means by which a parent might try to align the actions of the internalized “self-as-parent” with his/her actions in addressing parental challenges in real-world situations—means such as drawing on sources of social support, knowledge of parenting skills, or financial resources to achieve a parenting imperative.

It has been found that mothers’ levels of parenting stress may be exacerbated by exposure to violence, abuse of alcohol and drugs, deficits in coping, and perceived lack of social support (Chasnoff, Anson, Hatcher, Stenson, Iaukea, & Randolph, 1998; Florsheim et al., 2003; McCurdy, 2005; Nair, Schuler, Black, Kettinger, & Harrington, 2003; Tracy & Johnson, 2006; Tracy & Martin, 2007). Each of these will be discussed as follows.

**Current exposure to violence, mothering, and home environment.** A substantial proportion of women exposed to interpersonal violence as children, either as witness or victim, are once again exposed to such violence in adulthood (see, for example, Widom, Czaja, & Dutton, 2008). By definition, the physical and emotional trauma attendant upon ongoing exposure to violence within the context of intimate and family relationships will preclude a mother’s ability to provide calm, consistent, and nurturing care in a non-threatening home environment that optimizes child development—if she cannot keep herself emotionally and physically safe, she will not be able to provide such safety for her children, no matter her best intentions and efforts (Briere & Jordan, 2009; Dutton & Painter, 1983; Garbarino, 2001; Levendosky &
Graham-Bermann, 2001; Weinstein & Weinstein, 2005). Further, as mentioned previously, child maltreatment and domestic violence are known to co-occur in many families, the most common pattern being that both parents engage in mutual violence with one another, in addition to one or both—oftentimes the mother—lashing out at the child(ren) (Jouriles, McDonald, Slep, Heyman, & Garrido, 2008).

Substance abuse, mothering, and home environment. In a comprehensive review, Leonard & Eiden (2007) note that there have been relatively few studies that focus directly on patterns of parenting behaviors by substance abusing fathers or mothers. It has generally been found, however, that maternal substance abuse is related to neglectful and inconsistent caretaking behaviors, recurrent disruption of living situation, economic instability, and to the emergence over time of serious mental health problems (e.g. depression) in these mother’s children (Kearney, Murphy, & Rosenbaum, 1994; Marcenko, Kemp, & Larson, 2000; Olson, O’Connor, & Fitzgerald, 2001; VanDeMark, Russell, O’Keefe, Finkelstein, Noether, & Gampel, 2005).

Hien & Honeyman (2000) found maternal drug abuse to be positively associated with “maternal aggression,” which they operationalized in terms of tendency towards use of more severe disciplinary practices and an increased “potential for punitiveness” towards children; maternal aggression was also positively correlated both with being in a violent couple, and with the use of avoidant coping strategies. Cash & Wilke (2003) found that increased severity of drug use predicted increased incidence of child neglect in a large community sample of mothers (N = 2,146). Marcenko, Kemp, & Larson (2000) found that severity of addiction in mothers was highly correlated with child placement outside the home.
While beyond the scope of the present discussion, it should be noted that there is evidence to support the theory that women with a history of childhood trauma are neurophysiologically vulnerable to developing substance abuse problems (see, for example, Anderson, Teicher, Polcari, & Renshaw, 2002; Coffey, Saladin, Drobos, Brady, Dansky, & Kilpatrick, 2002; De Bellis, 2002). A maternal history of childhood maltreatment would therefore constitute an emotional and physical health risk factor for adult women with such histories, in terms of placing them at risk for substance abuse and/or addiction—and so would also constitute a risk factor for their children, given the impact of substance abuse and dependence on maternal parenting skills and home environment.

**Avoidant coping style and mothering.** “Avoidant coping” has been defined as an “effort to deny, minimize, and delay dealing with stressors” (Min, Farkas, Minnes, & Singer, 2007, p. 834), and has been associated with a history of childhood sexual and physical abuse, as well as with other adverse childhood experiences (Merrill, Thomsen, Sinclair, Gold, & Milner, 2001; Leitenberg, Gibson, & Novy, 2004). Min, Farkas, Minnes, & Singer (2007) found that use of avoidant coping strategies mediated the relationship between childhood trauma and both substance abuse and psychological stress in mothers, and that increased use of avoidant coping was positively correlated with substance abuse and with psychological stress in these women. Hien & Honeyman (2000) determined that maternal aggression was positively correlated with the use of avoidant coping strategies in a sample comprised of both substance abusing and non-substance abusing women.

While relatively few studies to date have examined avoidant coping style as it
might relate to mothering behaviors specifically, it is likely that a style of coping marked by avoidance, withdrawal, and disengagement in the face of challenge and adversity would tend to undermine the ability to respond rapidly and effectively to the demands of parenting. In this sense, an avoidant coping style might tend to compromise a mother’s ability to proactively nurture and support her child.

**Perceived social support and mothering.** Many studies have linked mothers’ perception of social support to their levels of emotional well-being and parenting effectiveness (e.g. Bronfenbrenner, 1986, 1990; Melton, 2002). Bronfenbrenner refers to strong social support as an “immunizing factor” with respect to single-parent mothers and their children (1990):

…children of single-parent mothers are less likely to experience developmental problems in those families in which the mother receives strong support from other adults living in the home or from nearby relatives, friends, or neighbors; members of religious groups; and, when available, staff members of family support and child-care programs.

Interestingly enough, the most effective agent of third-party support (in the minority of instances in which such assistance is provided) appears to be the child’s father. And what counted most was not the attention given to the child, important as this was, but the assistance provided to the mother herself by serving as a back-up in times of crisis, doing errands, spelling her off, sharing responsibility for discipline, and providing needed advice and encouragement. It appears that, in the family dance, “it takes three to tango.” (p. 34)

Garbarino (1977, p. 726) points out that “isolation from potent support systems (sic)” is
an important factor in the maintenance and perpetuation of abusive or neglectful family systems, an observation which has been supported by other researchers as well (e.g. Briere & Jordan, 2009; Gelinas, 1983). Further, a maternal history of childhood maltreatment has been linked to lower levels of perceived social support in adulthood, as well as higher levels of parenting stress (Harmer, Sanderson, & Mertin, 1999).

**Covariates related to mothering and home environment.** Covariates were included in the study on the basis of theoretical and statistical considerations; theoretical rationale for inclusion and brief discussion of each where indicated is as follows.

**Maternal verbal ability.** Maternal verbal ability is strongly associated with levels of maternal ego development, and so in turn with parenting ability (Brooks-Gunn, Duncan, & Britto, 1999; Suchman, McMahon, DeCoste, Castiglioni, & Luthar, 2008). Further, maternal verbal ability is key to the interpersonal communication, relational exploration, and construction of coherent meaning that are essential to a child’s emotional and social development (Bronfenbrenner, 1979, 2001a; Perry, 2002). Maternal speech has also been shown to mediate socioeconomic status with regard to development of a child’s vocabulary (Hoff, 2003). Maternal verbal ability was therefore included in the study as a covariate so as to control for effects of maternal verbal ability with respect to home environment provided children.

**Maternal mental health status.** Maternal mental health status was included as a covariate so as to differentiate between possible effects on mothering which might be attributable to a history of childhood trauma, as opposed to effects arising from other mental health conditions.

**Financial, instrumental, and emotional support for mothering.** A mother’s
access to financial and material resources, as well as the availability of practical help and instrumental support from family, friends, and members of her community will necessarily impact her ability to provide for her children, including the quality of the home environment she creates for them, as well as her own sense of self-efficacy and well-being (see, for example, Bronfenbrenner, 1986; Duncan & Magnuson, 2002). The ability to procure adequate food, shelter, and clothing for children requires money, as does preparing for a child’s birthday, paying for tickets to a museum, or buying school supplies. A partner, in theory, may provide financial, material, and emotional support that augments the mother’s own resources, and so may allow her more flexibility and range in support of her parenting endeavors. Therefore, current family net monthly income, current presence or absence of a partner, and number of children \( \leq 18 \) years old laying claim to available resources were included as covariates in the study.

**II. Conceptual framework of the present study**

The conceptual framework of the present study is summarized as follows (see also Figure 1, Appendix A). As grounded in extant research findings, it is hypothesized that a mother’s experience of trauma in childhood ultimately impacts the quality of home environment she later provides for her own children, as mediated by the level of parenting stress she experiences in caring for those children. It is also hypothesized that a mother’s level of parenting stress will be impacted by her current exposure to violence, use of alcohol and/or drugs, degree of avoidant coping style, and perceived social support.

The fundamental premise of the study is that a mother’s own developmental context and childhood experiences are integral to the emergence and evolution of her
mothering capacities, behaviors, and beliefs, which in turn express themselves in the characteristics of the home environment—the human ecological niche—she provides for her offspring. Further, traumatic experiences in childhood have been associated in adulthood with increased susceptibility to interpersonal violence, problematic substance use, problems in developing effective coping skills, and increased difficulties with social relationships (e.g. trusting others, having access to emotionally healthy family and friends), with consequent potential for decreased levels of perceived social support.

It is posited that problems along these dimensions in adulthood will in turn will be reflected in levels of parenting stress—that is, the tension that arises between a mother’s goals, beliefs and values related to how she believes parenting should actually look on a day to day basis, and her evaluation of how well she herself is measuring up to those criteria. Levels of parenting stress a mother experiences will then mediate the relationship between her own developmental history—specifically, her developmental history in terms of exposure to potentially traumatogenic experiences—and the characteristics of the home environment she then creates for her own children.

All covariates in the model were included mainly on the basis of theoretical considerations, though with some consideration of the results of *pre hoc* correlation analyses as well. Both maternal verbal ability and a history of mental health problems are associated with parenting capability, and so were included in the model as covariates in order to better isolate the effect of maternal history of childhood trauma on characteristics of the home environment provided. Similarly, access to material and other resources as related to socioeconomic status and social capital—income sufficient to meet her children’s needs, for example—will necessarily impact a mother’s ability to
provide for her children to the best of her ability, no matter how skilled a parent she may be. For this reason, family net income, presence or absence of a partner, and number of children in the household laying claim to available resources were also included as covariates. The specific measures and statistical methodology used in the present study are described in detail in the following chapter.
Chapter 3. Methodology

The following chapter addresses the present study’s methodology. First, the study’s questions and hypotheses are stated, followed by descriptions of the research design and of the study sample. All measures used in the study are then described, with discussion of conceptual and operational definitions where pertinent. In the final section of the chapter the data analysis plan is discussed (see also Figure 2, Appendix B).

Study Questions and Hypotheses

Q1

What is the nature of the relationship between degree of severity of maternal caregivers’ history of childhood trauma and the quality of the home environment provided for the children they parent?

Q1H1

The degree of severity of maternal caregiver history of childhood trauma, as measured by total score on the Childhood Trauma Questionnaire (CTQ), will be negatively related to, and will explain a statistically significant proportion of the variance in, the quality of home environment provided for the index child as measured by score on the Early Childhood HOME Inventory (EC-HOME), controlling for maternal verbal ability, current maternal mental health status, current net monthly income, marital status, and total number of children in household ≤ 18 years old (not including index child).

Q2

Does 1) severity of current exposure to violence, 2) severity of current substance abuse, 3) current level of perceived social support, and 4) “avoidant” coping style impact upon levels of
parenting stress experienced by maternal caregivers with any level of childhood trauma?

Q2H1

Increased severity of contemporary exposure to violence, as measured by current “husband or partner overall violence” score on the Revised Conflict Tactics Scale (CTS2), will be positively associated with, and will explain a statistically significant proportion of the variance in, level of maternal caregiver parenting stress as measured by current score on the Parenting Stress Index (PSI), with control variables per H1Q1 (see above).

Q2H2

Increased severity of contemporary substance abuse as measured by score on the Addiction Severity Index (ASI) will be positively associated with, and will explain a statistically significant proportion of the variance in, levels of parenting stress as measured by current score on the Parenting Stress Index (PSI), with control variables per H1Q1 (see above).

Q2H3

Decreased levels of perceived social support as measured by current score on the Multidimensional Scale of Perceived Social Support (MPSS) will be positively associated with, and will explain a statistically significant proportion of the variance in increased levels of maternal caregiver parenting stress as measured by current score on the Parenting Stress Index (PSI) with control variables per H1Q1 (see above).

Q2H4

“Avoidant” coping style in maternal caregivers as determined by sum of pertinent subscale scores on the Coping Orientations to Problems Experienced scale (COPE) will explain a statistically significant proportion of the variance in their parenting stress levels as measured by current score on the Parenting Stress Index (PSI), and will be being positively associated with
more parenting stress, with control variables per H1Q1 (see above).

Q3

Does a maternal caregiver’s level of parenting stress mediate the relationship between severity of history of childhood trauma and the quality of home environment provided for children?

Q3H1

Parenting stress in maternal caregivers will mediate the relationship between severity of history of childhood trauma and quality of home environment provided such that increased levels of parenting stress will be associated with, and will account for a statistically significant proportion of the variance in, the overall quality of home environment provided by these women for the children they parent, with control variables per H1Q1 (see above).

Research Design

The current study was a secondary data analysis derived from selected portions of the dataset from Dr. Lynn Singer’s ongoing study, “Cocaine-exposed infants and their mothers” (R01-DA07957, Case Western Reserve University), a study funded by the National Institute of Drug Abuse. The “parent” Singer study is a longitudinal, quasi-experimental, prospective cohort study (panel design) of substance abusing mothers and their children. The “parent” data set includes retrospectively reported data on maternal caregiver childhood exposure to violence and substance abuse in family of origin, as well as self-reported levels of maternal parenting stress, contemporary exposure to violence, substance use, social support, and home environment provided children over the course of the study itself. Data on child outcomes are currently available through age twelve, and include measures which track multiple pertinent developmental, behavioral, and
psychological dimensions. Data on both maternal caregivers and children have been collected at birth and 6.5 months, and then at 1, 2, 4, 6, 9, 10, 11, and 12 years, with what appear to be comparable rates of subject retention and participation in each wave (except at the 6.5 month point, > 90% retention to date) (see, for example, Linares et al., 2006; Farkas, Minn, Minnes, & Singer, 2004; Min, Farkas, Minnes, & Singer, 2007; Minnes, Singer, Humphrey-Wall, & Satayathum, 2008; Minnes et al., 2008; Noland, Singer, Arendt, Minnes, Short, & Bearer, 2003; Singer, Arendt, Minnes, Farkas, & Salvator, 2000; Singer, Arendt, Minnes, Farkas, Yamashita, & Kliegman, 1995; Singer et al., 2008; Singer, Salvator, Arendt, Minnes, Farkas, & Kliegman, 2002).

The present study’s secondary data analysis design was descriptive, quantitative, and cross-sectional (Shadish, Cook, & Campbell, 2002), using both descriptive data collected at the beginning of the study (i.e. at the time the index children were born), as well as data collected at the time the children were four years old (i.e. in the fifth year of the original Singer study). In Bronfenbrenner’s terms, the study design is “field theoretical,” a test of a “process-person-context” model—that is, in conceptualizing home environment provided for children to be the eventual expression of maternal history and habits in conjunction with present environmental conditions, the design incorporates a dimension of process in the effort to account for observed variation in the outcome variable (Bronfenbrenner, 1979, 1986, 1992; see also Garbarino, 1977).

**Study Sample**

Singer’s “parent” study has been following 415 children and their maternal caregivers since the birth of those children in 1994, with more than 90% of this initial sample maintained to date. The current study’s sample consists of a subset of those
original 415 maternal caregivers—specifically, $N = 218$ biological mothers who at Time 5 both completed the Childhood Trauma Questionnaire and maintained custody of the index child (then four years old). Non-biological maternal caregivers were excluded from the present study so as to minimize differential effects of caregiver disruption and out-of-home placement(s) on outcome variable of home environment provided for index child, especially as tracking and quantifying child caregiver and placement history has proved particularly difficult over time in the original study (Minnes, 2003b).

For purposes of the present study the terms mother and maternal caregiver are used interchangeably; both terms refer to a biological mother who has custody of the index child, and who is directly responsible for ensuring the physical care, safety, and nurturance of that child. On a related note, the term family as used here refers to any arrangement of socially interdependent individuals who define themselves as such, including (but not limited to) families of origin, families of procreation, and domestic partner arrangements (regardless of sexual orientation).

It should be noted that Singer’s original sample of 415 participating mothers (each with index child) was not randomly selected, but was obtained from a population of pregnant women at high risk for substance use, using clinical screening procedures implemented through the obstetrical department of a large, urban, Midwestern teaching hospital (Noland, Singer, Arendt, Minnes, Short, & Bearer, 2003; Singer, Salvator, Arendt, Minnes, Farkas, & Kliegman, 2002). Prospective study participants were approached by a nurse recruiter during the perinatal period if they had been screened for substance use at delivery due to previous DHS involvement, signs of intoxication, and/or self-report of substance use; if the mother agreed to be in the study their infant was then
screened as well. Of the original Singer sample, 218 mother-child dyads were identified as positive for cocaine use, while 197 were negative. Exclusion criteria for the mothers included substantive psychiatric history (i.e. schizophrenia, bipolar disorder, or known suicide attempt), use of heroin as primary drug of choice, HIV positive status, low IQ, age of less than 19 years, and medical illness. Across both cocaine-using and non-cocaine using groups, the majority of mothers included in the parent study’s final sample were African-American (80% non-white), not employed outside of the home, and of low socioeconomic status.

The present study was reviewed and approved by the CWRU Institutional Review Board (IRB Protocol Number 20050106). It should be noted that the parent study underwent IRB review by the participating hospital.

**Measurement**

The measures used to operationalize this study’s variables are described as follows, first addressing measures used for the main variables of interest, and then those used as covariates in regression analyses.

It should be noted that covariates included in the study were chosen on theoretical grounds based on the literature review, as discussed in the previous chapter (see pages 52-55), as well as on the basis of statistically significant correlation(s) with the study’s main variables. For example, the inclusion in the model of the covariate “maternal mental health” was, in theory, intended to distinguish and so control for mental health symptomatology unrelated to symptoms related to a maternal history of childhood trauma *per se* (for example, symptoms of major depression as opposed to symptoms of PTSD). Further, *pre hoc* correlation between the covariate “maternal mental health status” and
independent variable “maternal history of trauma” was statistically significant, though somewhat weak ($r = .26$ at $p < .01$)—therefore, the covariate “maternal mental health” was retained in the test model. Similarly, in previous studies “maternal verbal ability” has been associated with parenting efficacy and child outcomes, and in *pre hoc* tests in the present study was correlated at a statistically significant level with dependent variable “home environment provided children” ($r = .39$ at $p < .01$), and so was included in the final model as a covariate. See Appendix E, Table III for all intercorrelations between main study variables and covariates.

**Childhood Trauma Questionnaire (CTQ).** The study’s independent variable *maternal history of childhood trauma* was operationalized in terms of total score on the Childhood Trauma Questionnaire (CTQ), a retrospective report measure of exposure to various forms of neglect and abuse in childhood (Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, Sapareto, & Ruggiero, 1994; Bernstein & Fink, 1998). The CTQ is a 28-item measure which screens for the respondent’s recall of experiences of nurture vs. maltreatment before the age of 18 in his/her family. Possible responses to statements such as “I felt loved,” and “Someone molested me” range along a 5-point Likert scale from “Never true” ( = 1), Rarely True ( = 2), Sometimes True ( =3), Often True ( = 4), to “Very often true” ( = 5). Higher scores on the CTQ indicate higher levels of victimization, with possible total scores ranging from 25-125. It should be noted that 3 of the 28 items on this measure were designed to screen for false negatives (i.e. minimization of abuse and/or idealization of family situation), and so are not included when calculating total score on the CTQ (e.g. “I had the best family in the world.”).

The revised and most current version of the CTQ used in the present study has a
five-factor structure of five items each: Emotional Abuse (EA), Physical Abuse (PA), Sexual Abuse (SA), Emotional Neglect (EN), and Physical Neglect (PN) (Bernstein & Fink, 1998). So as to ensure content validity, individual items of the measure were developed through extensive review by the authors of the scientific literature related to child maltreatment. The authors note that the CTQ measures multiple items along each subscale, and uses quantitative gradations so as to capture a “continuum of severity” in order to maximize reliability in reporting of experience of abuse. There was a concerted effort to frame questionnaire items with greater specificity than in extant measures of traumatic experience, as it has been found that specificity of items correlates with greater accuracy in reporting of childhood trauma—i.e. greater accuracy both as verified by collateral information and/or collaborating witnesses, and as compared to more categorical screening methods and measures (Bernstein & Fink, 1998; Molnar, Buka, & Kessler, 2001; Simpson & Miller, 2002; Straus & Kantor, 2005).

As discussed in the literature review, it is a common tendency in individuals who have a history of childhood abuse and/or neglect to valorize members of the family who have harmed them, and to minimize and/or deny the scope of their victimization (Bernstein & Fink, 1998; see also, for example, Jouriles, Mehta, McDonald, & Francis, 1997; Femina, Yeager, & Lewis, 1990; Williams, 1995). For this reason the CTQ was designed so as to promote emotional safety of subjects and so minimize self-censoring in self-disclosure. For example, a concerted effort was made to avoid possible blaming/loaded terminology to the extent possible (e.g. doesn’t use terms such as “perpetrator,” or “abuse”). Further, the language was framed so as to avoid requiring any identification of perpetrators. Finally, as previously mentioned, the measure includes 3
items which together constitute a Minimization/Denial Scale; these items were included specifically to screen for false-negative responses (Bernstein & Fink, 1998).

The rationale for using the CTQ total score as a predictor, rather than the various types of abuse and neglect as reflected in the CTQ subscales, is that a total score more accurately reflects the additive impact of traumatic events in childhood on subsequent adult function (Bernstein & Fink, 1998). As previously discussed in the literature review, the scientific evidence indicates that the adverse effects of trauma on mind and body tend to be cumulative and interactive over time, rather than corresponding in linear fashion to specific episodes of maltreatment (see, for example, Dube, Anda, Felitti, Croft, Edwards, & Giles, 2001; Felitti et al, 1998; Hawkins & Radcliffe, 2006; Molnar, Buka, & Kessler, 2001).

Across studies the CTQ has demonstrated adequate internal consistency, with median $\alpha$ ranging from .66 to .92 on the subscales, as well as good test-retest reliability ($\alpha = .79$ to .86) (Bernstein, 2000; Bernstein & Fink, 1998; Scher, Stein, Asmundson, McCreary, & Forde, 2001). In a study of psychometric properties of the CTQ in a community sample of male and female adults ($N = 1,007$) Scher, Stein, Asmundson, McCreary, & Forde (2001) report high internal consistency for the entire measure ($\alpha = .91$), with alpha coefficients for the subscales ranging from .58 to .94. Recent studies using the Singer dataset continue to find moderate to high reliability coefficients on CTQ subscales—for example, Minnes et al (2008) report $\alpha = .61$ to .83, and Min, Farkas, Minnes, & Singer (2007) report $\alpha = .69$ to .94.

In the present study the reliability coefficient for the CTQ measure as a whole was $\alpha = .72$. Coefficients for the five subscales were as follows: Emotional Abuse $\alpha = .86$;
Physical Abuse $\alpha = .84$; Sexual Abuse $\alpha = .95$; Emotional Neglect $\alpha = .87$; Physical Neglect $\alpha = .42$ (and Minimization/Denial subscale $\alpha = .75$).

**Early Childhood Home Observation for Measurement of the Environment (EC-HOME).** The study’s dependent variable *quality of home environment provided for child* was operationalized in terms of total score on the Early Childhood Home Observation for Measurement of the Environment (EC-HOME), an assessment tool for evaluating the home environment of children from ages three up to six years old (Bradley & Caldwell, 1979). It should be noted that the EC-HOME was based on the original Home Observation for Measurement of the Environment (HOME), which was designed for assessing the home environment of children from birth up to the age of three (Bradley & Caldwell, 1976, 1979, 1984). The EC-HOME assesses caregiver behaviors and attributes, as well as physical and material characteristics of the home environment which have been found to impact child development. It is intended to capture such characteristics as emotional and verbal responsiveness of the caregiver, encouragement of maturity in the child, emotional climate of the home, provision of growth-fostering materials and experiences, provision of active stimulation and social interaction within the family, and aspects of the physical environment itself (e.g. relative cleanliness; accessibility of children’s books).

The EC-HOME was initially intended to function as a screening tool to identify children at risk for developmental problems related to quality of nurturance and stimulation provided by their caretaker(s), and has been found to predict cognitive performance as measured by the score on the Stanford-Binet Intelligence Scale (Boehm, 1985; Bradley & Caldwell, 1979). It was also designed so as to differentiate
“environmental process” features from socioeconomic “status measures” (e.g. SES, social
class) in predicting developmental outcome, and has been found to do so effectively
(Bradley & Caldwell, 1979; Leventhal, Martin, & Brooks-Gunn, 2004). Further, as
Bradley & Caldwell (1979) point out, the EC-HOME is prescriptive in that it helps to
identify specific dimensions of the home environment that may be deficient, and so is a
useful guide in designing educational and/or corrective measures when addressing
problems identified through screening a given family.

The measure is comprised of 55 items, each to be answered either Yes (= 1) or No
(= 0). Possible total scores range from 0 to 55, with higher scores indicating increased
adequacy and quality of home environment for the child. In order to ensure content
validity in developing items for the measure the authors conducted an extensive literature
review which initially generated 144 items; these were then reduced through extensive
item examination and exploratory factor analysis to the remaining 55 items as found in
the present version (Boehm, 1985; Bradley & Caldwell, 1979; Leventhal, Martin, &

The EC-HOME Inventory has eight subscales: Stimulation through Toys, Games,
& Reading Materials; Language Stimulation; Physical Environment; Pride, Affection,
and Warmth; Stimulation of Academic Behavior, Modeling and Encouragement of Social
Maturity, Variety of Stimulation, and Physical Punishment (Bradley & Caldwell, 1979;
Mundfrom, Bradley, & Whiteside, 1993). As reported by Leventhal, Martin, & Brooks-
Gunn (2004) in their brief overview of studies which have used the EC-HOME, these
subscales have been found to have reliabilities across racial and ethnic groups of $\alpha \geq .50$,
and the instrument has demonstrated validity and reliability in screening both low-income
and higher-income families. Across studies, interobserver agreement has been reported as ≥ .80 (intra-class, Kappa, Pearson), with estimates of internal consistency for total scores at > .80 (Bradley, 1993).

The HOME Inventory was originally intended to be administered by a trained interviewer as a structured interview of a primary caretaker conducted in the home setting, with direct observation by the interviewer of the physical appearance and material elements of the immediate environment during that same visit (Bradley & Caldwell, 1976). In the Singer study the EC-HOME was administered in the form of a semi-structured interview at the testing center offices, with trained interviewers relying both on maternal self-report and on observations of how the mother related to the index child over several hours during the day’s testing procedures. However, the HOME Inventory has always included many questions that cannot be answered through direct observation at the time of the interview, regardless of where the interview is conducted—for example, questions having to do with out-of-home experiences provided the child, or about whether the family buys and reads a daily newspaper (see Chiodo, Jacobson, & Jacobson, 2004, for example of validity of use of EC-HOME as semi-structured interview).

In the present study the internal consistency of the total EC-HOME was acceptable, with \( \alpha = .82 \). Reliability coefficients on the eight subscales were as follows: Stimulation through Toys, Games, and Reading Materials \( \alpha = .70 \); Language Stimulation \( \alpha = .44 \); Physical Environment \( \alpha = .65 \); Pride, Affection, and Warmth \( \alpha = .66 \); Stimulation of Academic Behavior \( \alpha = .66 \), Modeling and Encouragement of Social Maturity \( \alpha = .40 \); Variety of Stimulation \( \alpha = .53 \), and Physical Punishment \( \alpha = .71 \).
While some of these subscale alphas were low, Bradley (2004) has asserted that Chronbach alpha values, which reflect the internal consistency of scale items, may not be meaningful in establishing the reliability of a measure such as the HOME. Bradley notes that what makes for a good home environment in terms of challenging and nurturing a child developmentally is variability and novelty of stimuli and experiences, and it is these characteristics the HOME is designed to capture—while it is similarity and likeness between items which ensures higher levels of Chronbach’s alpha on a measure and its subscales.

**Parenting Stress Index (PSI).** *Parenting stress*, conceptualized in this study as a mediating variable, was operationalized in terms of total score on the Parenting Stress Index (PSI), a total score which included all items in both the Parent and Child Domains of the measure. The PSI is a 120-item parental self-report measure which assesses for parental stress, dysfunction in parent-child interactions, and “difficult child” characteristics within a given child-parent system, and was designed for use with parents of children age 1 month to 12 years old (Abidin, 1982, 1995, 1997).

Possible responses on the first 101 items of the PSI to items such as, “I feel capable and on top of things when I am caring for my child” and “I expected to have closer and warmer feelings for my child than I do and this bothers me” range from “strongly agree” (=1) to “strongly disagree” (=5) on a 5-point Likert scale. The final 19 items of the measure (which are not included in the calculation of PSI total score), have to do with possible sources of stress outside of—and yet potentially impacting—the parent-child relationship, such as “death of immediate family member,” for example, or “went deeply into debt,” and are answered either “Yes” (= 1) or “No” (= 0) (Abidin,
Possible total score on the PSI ranges from 101 to 505, with higher scores indicating increased levels of parenting stress; results are interpreted in terms of percentile scores normed by age of index child, with a total score of $\geq 260$ considered to be indicative of a need for referral to appropriate services and/or treatment providers (Abidin, 1995). It should be noted that in the original computation of total PSI score in the “parent” data set, a total score was not computed for those respondents with data missing on 3 or more of the 4 items having to do with a partner or spouse, resulting in a loss of cases on that variable in the present study ($n = 186$). Thus, in the present study sample it is likely that the 32 cases missing data such that they did not have a total score on the PSI were disproportionately those of women who did not have a partner or spouse at the time of data collection.

Item formulation for the PSI was based on extensive review of the related literatures (e.g. on stress, on parenting) so as to strengthen validity of the instrument (Abidin, 1992, 1995; Allison, 1998; Grotevant & Carlson, 1989). The PSI has demonstrated strong content, convergent and criterion-related validity over many studies (Abidin, 1995; Grotevant & Carlson, 1989; Allison, 1998). Barnes & Oehler-Stinnett (1998) call into question the measure’s construct validity based on initial factor-analytic results as the measure was devised, stating that the PSI may be tapping into domains other than stress related to parenting per se. However, this has not generally been cited as problematic by most researchers over many years of use of the instrument (Grotevant & Carlson, 1989; see, for example, Harmer, Sanderson, & Mertin, 1999; Teti, Gelfand, Messinger, & Isabella, 1995; see also Abidin, 1995).

The PSI measures the subject’s perception of his/her parenting experience along
two major domains, the “Child Domain” and the “Parent Domain” (Abidin, 1995). The Child Domain yields six subscales: Distractibility/Hyperactivity (DI); Adaptability (AD); Reinforces Parent (RE); Demandingness (DE); Mood (MO) and Acceptability (AC), while the Parent Domain yields seven: Competence (CO), Isolation (IS), Attachment (AT), Health (HE), Role Restriction (RO), Depression (DP), and Spouse (SP) (Abidin, 1995). It should be noted that these domains and subscales do not include the final 19 Life Stress items on the measure.

The PSI has been reported to have good reliability across studies, with coefficient alphas on the Child Domain subscales ranging from .73 to .83, Parent Domain subscales ranging from .70 to .84, Child Domain total score α = .90, Parent Domain total score α = .93, and total score PSI α = .95 (Abidin, 1995). Singer, Davillier, Bruening, Hawkins, & Yamashita (1996) reported coefficient alphas of .72 to .88 on subscales of the PSI, and in a 2003 study Florsheim et al. report good internal consistency on the measure overall for both African-American and Hispanic participants (α = .92 and .89 respectively).

In the present study, which uses total score, the coefficient alpha of the PSI measure as a whole (i.e. all items) was .92, while reliabilities of the Child and Parent domains were α = .85 and .90 respectively. Coefficient alphas for the six Child Domain subscales were as follows: Distractibility/Hyperactivity α = .61; Adaptability α = .61; Reinforces Parent α = .39; Demandingness α = .45; Mood α = .44; and Acceptability α = .75. Coefficient alphas for the seven Parent Domain subscales were as follows: Competence α = .27; Isolation α = .54; Attachment α = .41; Health α = .36; Role Restriction α = .78; Depression α = .84; and Spouse α = .77.

Conflict Tactics Scale-Revised (CTS2). Current exposure to violence,
conceptualized in this study as potentially exacerbating parenting stress, was operationalized in terms of a “husband or partner overall violence” score derived from responses to pertinent items on the Revised Conflict Tactics Scale (CTS2) (Straus, Hamby, Boney-McCoy, & Sugarman, 1996; Straus, 2004; see also Straus, 1979).

The CTS2 is a widely used 78-item measure that assesses incidence, severity, and reciprocity of acts of violence within intimate relationships, with violence ranging from emotional abuse to varying degrees of physical and sexual abuse and assault. The CTS2 has 5 subscales: Negotiation (“I showed my partner I cared even though we disagreed”), Psychological Aggression (“Shouted or yelled at my partner”), Physical Assault (“Pushed or shoved my partner”), Sexual Coercion (“Used threats to make my partner have sex”), and Injury (“Went to see a doctor because of a fight with my partner”).

In the Singer “parent” dataset from which the current study’s dataset was derived, the original 78 items of the CTS2 were reduced to 42 for purposes of analyses; 21 of these final items had to do with possible violence perpetrated by the male partner, and 21 items had to do with possible violence perpetrated by the respondent herself. The “husband or partner overall violence” variable was then created by summing the scores of the 21 items having to do with perpetration of violence by male partner. Possible total score on all 42 items of this refined version of the CTS2 ranged from 0-252, while possible total score on “husband or partner overall violence” ranged from 0-126. It should be noted that for all 42 items the response category “not in past year but did happen” (= 7) was coded as “don’t know” (= 0) (Min, 2010). In addition, in the original “parent” data set the cases of those respondents who did not have a spouse or partner at the time of data collection were not scored on the variable “husband or partner overall
violence,” resulting in the loss of 47 cases on that variable in the present study’s data set (with \( n = 171 \)).

The full CTS2 has demonstrated good internal consistency and reliability over many studies (\( \alpha = .79 \) to \( .95 \)) (Minnes, 2003a; see also Straus, 1979; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). In the current study, reliability on the 41-item subset of the CTS2 was \( \alpha = .89 \), and on the 21 items comprising male partner overall violence \( \alpha = .80 \).

**Addiction Severity Index (ASI).** *Current substance abuse,* conceptualized in this study as potentially exacerbating parenting stress, refers to problematic use of alcohol and/or drugs as measured by total score on the “Interviewer Severity Rating” for “Alcohol problems” and “Drug problems” on the Addiction Severity Index. The Addiction Severity Index (ASI) (McLellan et al., 1992; McLellan, Luborsky, Woody, & O’Brien, 1980) is a structured interview designed to assess severity of alcohol and drug use in terms of specific behaviors and problematic consequences in seven domains: physical health, employment status, nature of drug and alcohol use, family history, family and social relationships, legal status, and psychiatric symptoms. The ASI as a whole elicits answers to questions about frequency, duration, and severity of symptoms in a variety of formats (multiple choice, open-ended, and yes/no questions, as well as 5-point rating scales) across several domains. The ASI yields both severity ratings in seven specific domains (Medical Status, Employment Status, Alcohol Use, Drug Use, Legal Status, Family History, Psychological Status), and composite scores which can be used to assess change over time. Sensitivity and specificity of items on the measure have been cited in support of its validity (see, for example, King & Bordnick, 2002; Langeland,
In the current study total score on the Addiction Severity Index is the sum of the rater’s overall evaluation of need for treatment for alcohol and for drug use in the past 30 days. Possible range of total score on these two items is 0-18, with higher scores indicating increased severity of problems with substances.

Because the ASI is administered by trained interviewers, reliabilities for the ASI have generally been determined by concurrent and test-retest analyses of agreement between the interviewers themselves. Interrater reliability coefficients have been reported as adequate by the developers of the instrument, with $\alpha = .89$ for the measure as a whole, and alphas on the seven domains of the instrument ranging from .84 to .85 (McLellan, Luborsky, Cacciola, Griffith, McGahan, & O’Brien, 1985). Further study of interrater reliability across three sites yielded an average agreement of $\alpha = .89$ on the measure as a whole (McLellan, Luborsky, Cacciola, Griffith, Evans, Barr, & O’Brien, 1985). A more recent study reported alpha coefficients on the seven domains of the ASI as ranging from 0.65 to 0.89, with evidence for good discriminant and convergent validity of the instrument (Leonhard, Mulvey, Gastfriend, & Schwartz, 2000). In the present study, the internal consistency of all items on the measure as a whole was acceptable at $\alpha = .78$. Reliability coefficients on the subscales were as follows: Medical Status $\alpha = .89$; Employment Status $\alpha = .51$; Alcohol/Drug Use $\alpha = .90$; and Legal Status $\alpha = .85$.

**Coping Orientations to Problems Experienced Scale (COPE).** *Avoidant coping style,* conceptualized in this study as potentially exacerbating parenting stress, was operationalized in terms of the sum of the Denial, Behavioral Disengagement, and Mental
Disengagement subscale scores on the Coping Orientations to Problems Experienced Scale (COPE) (Carver, Scheier, & Weintraub, 1989; see also Min, Farkas, Minnes, & Singer, 2007). The COPE is a 60 item measure designed to assess for characteristics of coping strategies and behaviors in stressful situations. The measure includes items such as “I try to get advice from someone about what to do” and “I pretend that it hasn’t really happened,” with possible responses as follows: “I usually don’t do this at all” (= 1); “I usually do this a little bit (= 2); I usually do this a medium amount (= 3); and “I usually do this a lot (= 4).

The COPE yields 15 subscales, each with 4 items, with possible range of score on each subscale ranging from 4 to 16 (a total COPE score can be computed, but was not used in the present study). The subscales of the measure are Active Coping, Planning, Suppression of Competing Activities, Restraint in Coping, Seeking Social Support for Instrumental Reasons, Seeking Social Support for Emotional Reasons, Positive Reinterpretation and Growth, Acceptance, Turning to Religion, Focus on and Venting of Emotions, Denial, Behavioral Disengagement, Mental Disengagement, Alcohol/Drug Disengagement, and Humor.

A total score on “avoidant coping” was obtained by summing the scores of the subscales Denial, Behavioral Disengagement, and Mental Disengagement, with possible range of total score from 12 to 48, and higher scores indicating increasingly avoidant coping style. The Denial subscale contains items such as “I pretend that it hasn’t really happened,” the Behavioral Disengagement subscale items such as “I give up the attempt to get what I want,” and the Mental Disengagement subscale items such as “I sleep more than usual.”
The COPE has been found to have adequate convergent and discriminant validity (Carver, Scheier, & Weintraub, 1989; Clark, Bormann, Cropanzano, & James, 1995), though Eisengart et al (2006) note that confirmation of the factor structure across studies has been inconsistent. Carver, Scheier, & Weintraub (1989) cite internal consistency of the COPE subscales as ranging from $\alpha = .45$ to .92. In the present study sample the internal consistency of all items on the entire measure was good at $\alpha = .95$; coefficient alphas for the Denial, Behavioral Disengagement, and Mental Disengagement subscales were .66, .67, and .59 respectively. Reliability coefficients for all other subscales of the measure were as follows: Active Coping $\alpha = .68$; Planning $\alpha = .81$; Suppression of Competing Activities $\alpha = .66$; Restraint in Coping $\alpha = .71$; Seeking Social Support for Instrumental Reasons $\alpha = .81$; Seeking Social Support for Emotional Reasons $\alpha = .80$; Positive Reinterpretation and Growth $\alpha = .77$; Acceptance $\alpha = .71$; Turning to Religion $\alpha = .82$; Focus on and Venting of Emotions $\alpha = .74$; Alcohol/Drug Disengagement $\alpha = .75$; and Humor $\alpha = .80$.

**Multidimensional Scale of Perceived Social Support (MSPSS).** Perceived social support, conceptualized in this study as potentially decreasing parenting stress, is operationalized in terms of total score on the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988). The measure consists of 12 items such as “I can talk about my problems with my family” and “I can count on my friends when things go wrong.” Possible responses on each item range from “very strongly disagree” (= 1) to “very strongly agree (= 7), with total score on the measure ranging from 12-84, and higher score indicating greater perceived social support. The measure yields three subscales: Family, Friends, and Significant Other.
Zimet, Dahlem, Zimet, & Farley (1988) report reliability of the total scale as $\alpha = .88$, with values of the three subscales ranging from $\alpha = .85$ to .91. Minnes, Singer, Humphrey-Wall, & Satayatham (2008) report reliabilities for all subscales as being more than $\alpha = .90$. In the current study’s sample, reliability for all items on the MSPSS was $\alpha = .95$, while subscale alphas were Family $\alpha = .95$, Friends $\alpha = .93$, and Significant Other $\alpha = .96$.

**Peabody Picture Vocabulary Test (PPVT-III).** Maternal verbal ability was operationalized as standardized total score on the Peabody Picture Vocabulary Test (PPVT). The PPVT is used to measure receptive vocabulary and ability to understand spoken English (Dunn, Dunn, Williams, & Wang, 1997). This is a well-established measure, and has been judged to have good content, construct, and criterion-related validity (see, for example, Bessai, 2001; Wasyliw, 2001). The test is administered by a trained examiner, who speaks a stimulus word while presenting a set of pictures from which the respondent must pick the image which best represents the meaning of that word. There are 204 test words on the entire PPVT. All scores are standardized, with possible range of total standardized score of 40-160, with higher scores indicating higher maternal verbal ability.

The PPVT has been shown to have good reliability, with coefficient alphas ranging from .92-.98 across all age categories (Dunn, Dunn, Williams, & Wang, 1997). Test-retest reliabilities across different ages categories using a sample deliberately diverse in terms of gender, race, SES, and region of the United States ranged from $\alpha = .91-.94$ (Dunn, Dunn, Williams, & Wang, 1997)

**Brief Symptom Inventory (BSI).** Maternal mental health status was
operationalized in terms of the “Global Severity Index” score on the Brief Symptom Inventory (BSI) (Derogatis, 1975; Derogatis & Spencer, 1982). The 53-item measure was designed to capture various dimensions of psychological functioning at a given point in time, and asks respondents to rate how much specific symptoms and problems listed have “distressed or bothered” them during the past seven days, including day of testing. The BSI has nine subscales: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism.

The BSI includes items such as “Suddenly scared for no reason,” “Feeling inferior to others,” and “Thoughts of death and dying.” All items are answered on a scale of 0 to 4, with 0 = “Not at all,” 1 = “A little bit,” 2 = “Moderately,” 3 = “Quite a bit,” and 4 = “Extremely.” A total score on the BSI overall may range from 53 to 212, with higher scores indicating increased severity of psychological distress. The global severity index score (GSI), is believed to be the most sensitive of three global indices derived from the BSI (Eisengart et al., 2006), and is the average of the sum of all 53 items of the BSI (i.e. total score on BSI/number of items). Possible score on the GSI ranges from 0.0 to 4.0, with increased score indicating higher levels of severity of psychological distress.

The BSI has been shown to have good reliability, with internal consistency demonstrated by coefficient alphas on the nine subscales ranging from .71 to .85, and a test-retest reliability for the GSI of .90 (Peterson, 1989). Minnes et al. (2008) found the reliabilities of the BSI subscales ranged from $\alpha = .76$ to .88, and the reliability of the GSI was $\alpha = .96$. Reliabilities in the present study sample for the BSI measure as a whole was $\alpha = .96$, while coefficient alphas on the nine subscales of the measure were as follows:
Somatization $\alpha = .68$; Obsessive-Compulsive $\alpha = .85$; Interpersonal Sensitivity $\alpha = .69$; Depression $\alpha = .84$; Anxiety $\alpha = .76$; Hostility $\alpha = .71$; Phobic Anxiety $\alpha = .73$; Paranoid Ideation $\alpha = .70$; and Psychoticism $\alpha = .71$.

**Current Net Monthly Income.** The respondent’s *current net monthly income* was operationalized in terms of her answer to item #10 on the original “parent” study “Environmental Factors (Update)” questionnaire at the time index children were age four. The item requires the respondent to fill in up to four squares with numbers denoting the dollar amount of “Current family monthly income (net).”

**Marital Status.** The respondent’s *current marital status* was operationalized in terms of her answer to item # 2 on the original “parent” study “Variable Demographic (Update)” questionnaire at Time 5. Possible response categories on this item are: Married; Divorce (sic); Separated; Never Married; Widow; Common Law; Other. For purposes of this study these 7 categories were sorted into two new categories, “Currently Partnered (those who answered Married, Common Law, and Other), and “Not Currently Partnered” (those who answered Divorce, Separated, Never Married, and Widow). (For a discussion of the difficulties encountered in the “parent” dataset in tracking relationship status, see Chapter 5).

**Total Number of Children $\leq 18$ Years Old in Household.** Respondent’s *total number of children $\leq 18$ years old in household* (not including index child) was operationalized in terms of her answer to item #5 on the “Environmental Factors (Update)” questionnaire at Time 5. This item was stated as “Total in household baby currently lives in,” and each mother was then to enter the actual number of children (“# under 18”) in up to two squares, one numeral per square, with her answer.
Description of Data Analysis Plan

Data analysis procedures used in the present study are described in the following section. SPSSv11 software was used for all analyses. The total study sample of \( N = 218 \) was used in all analytic procedures. See Figure 2 for a diagram of the test model, at the end of this section.

**Examination of Frequencies and Descriptives.** Univariate statistical procedures were conducted so as to allow for examination of frequencies and distribution patterns in the data. Frequencies were examined on measures overall, and then on specific variables of interest to the study, including the mean (and standard error of the mean), median, mode, minimum and maximum values, range, skewness and kurtosis. Histograms with a normal curve imposed were examined for all variables of interest, so as to further assess for normal distribution. The data were examined for the presence of outliers, and those few outliers identified were evaluated, resulting in retention of all cases on the basis of theoretical considerations (for example, those few who scored quite high on total score on CTQ were retained so as to improve variability on the study’s main independent variable).

All skewness and kurtosis values were checked for statistical significance, and the magnitude of each was then evaluated in terms of criteria per Curran, West, & Finch (1996). All skewness values were found to be < 2.00 and therefore within normal limits, except for “total score on ASI,” which was moderately skewed towards lower scores at skewness = 2.33. Recoding the “total score on ASI” into a variable with scores categorized in terms of low alcohol/drug use severity (0-2 total score), moderate (3-12), and high (13-18) did improve the distribution on the variable (skewness = 1.56), but the
original variable was retained for all data analyses given that the recoding ultimately weakened correlations with other variables of interest. Except for the kurtosis value on “husband overall violence score” (kurtosis = 13.43, indicating moderate kurtosis), values on all other variables were < 7.0, and so within normal range.

Evaluation and Handling of Missing Data. Missing values analyses using SPSS were conducted on each variable of interest in the study. The initial parameter for flagging problematic cases was that any case missing ≥ 20% of data on a measure would require further examination as to advisability of inclusion in the study (Tracy, 2004). All variables of interest were then further evaluated in terms of percentage of missing cases overall, with percentage of missing cases on a given variable to be considered acceptable if ≤ 5.0 % (Min, 2010). As a result of the missing value analyses, three otherwise eligible cases were deleted from an initial sample of 221 mothers due to missing > 20% of data on the study’s dependent variable of “home environment,” leaving the final study N = 218.

The percentage of missing data on most variables of interest was < 5%, with two exceptions, as follows. First, there were 21% of cases missing on the “husband or partner violence overall score,” because respondents who considered themselves single at the time of data collection did not complete the CTS2. Second, there were 14.7% of cases missing on the “total score on PSI” variable, because cases with data missing on items that asked about involvement/support in parenting by husband or partner were excluded when total score on the measure was computed. In the interest of losing as little data as possible on other variables in the study, cases were not excluded from the sample on the basis of missing data on these two variables (Min, 2010).
Examination of Bivariate Relationships. Pearson’s product-moment correlation coefficients (Pearson’s $r$) were used to check for evidence of correlation between all variables of interest, to aid in identification of possible covariates, and to rule out multicollinearity such that multiple regression analyses could later be used without danger of violating the assumptions of that test. No evidence of multicollinearity was found, as all correlation coefficients between variables of interest, including all independent variables, were $r = < .60$ (Montcalm & Royse, 2002).

Reliabilities of Measures. Chronbach’s alpha reliability coefficients were generated for measures used in the study, both on the measure overall (i.e. all items of the measure included in the analysis), and then for all items on each subscale of the measure.

Hypothesis Testing. Preliminary statistical analyses and then hierarchical regressions to test hypotheses were conducted as follows.

Analyses to check that assumptions for regression met. First, as described above, normal distribution of data on outcome variables “parenting stress” and “home environment provided” were confirmed through examination of related frequencies, inspection of histogram with normal curve imposed, and assessment for skewness and kurtosis. Also per above, correlations using Pearson’s $r$ showed no evidence of multicollinearity—that is, correlations between all independent variables were $< .70$. It appeared from all inspections and analyses of the data over time that all errors were independent—that is, no pattern emerged that suggested correlation between errors on one observation with errors on another (for example, with respect to missing data).

Next, data on variables of interest were checked for homoscedasticity in order to determine that all associations being tested were linear. This was done by creating and
examining scatter plots of dependent variables (y axis) and independent variables (x axis). In addition, scatter plots that plotted residuals (y axis) against independent variables (x axis) were created and examined so as to confirm homoscedasticity. Finally, homogeneity of variance was checked by plotting standardized residuals (y axis) against independent variables (x axis).

Regression Analyses. Regression analyses were completed using hierarchical multiple regression analysis, a technique which is based on ordinary least squares regression, and which allows for block entry of variables in building the model(s) to be tested.

Description of Analyses for Research Question1 and Hypothesis 1. In order to determine the nature of the relationship between degree of severity of maternal caregivers’ history of childhood trauma and the quality of the home environment provided for the children they parent, the statistical plan was to conduct a multiple regression analysis. It should be noted that prehoc correlation analysis indicated that in this dataset the relationship between “history of childhood trauma” and “home environment provided” was very weak, and was not statistically significant. However, the regression was run nonetheless because of the relevance of this question to the study. Therefore, independent variable “history of childhood trauma” was regressed on dependent variable “home environment provided,” with covariates “maternal verbal IQ,” “current maternal mental health status,” “current net monthly income,” “marital status,” and” total number of children in household ≤ 18 years old” entered as one initial block.

Description of Analyses for Question 2, Hypotheses 1-4. In order to determine whether, and how, independent variables 1) severity of current exposure to violence,
2) severity of current substance abuse, 3) current level of perceived social support, and 4) “avoidant” coping style impact upon levels of parenting stress, a hierarchical multiple regression analysis was completed. All independent variables were entered in turn, regressed upon dependent variable CTQ, with covariates “maternal verbal IQ,” “current maternal mental health status,” “current net monthly income,” “marital status,” and “total number of children in household ≤ 18 years old” entered as one initial block in building the model.

**Description of Analyses for Question 3, Hypotheses 1.** In order to determine whether a maternal caregiver’s level of parenting stress mediates the relationship between severity of history of childhood trauma and the quality of home environment provided for children, statistical procedures as outlined by Baron & Kenny (1986) were followed, as described below.

The steps necessary to test for mediation using multiple regression analyses are as follows (Baron & Kenny, 1986; see also Bannon, 2008).

**Step 1.** It is first necessary to demonstrate that independent variable “history of childhood trauma” is in fact correlated with dependent variable “home environment provided.” That is, there must be a statistically significant direct effect between the two variables such that they can then be mediated. To do this, “history of childhood trauma” would be regressed on “home environment provided,” with covariates entered as a block.

**Step 2.** The next task would be to demonstrate that independent variable “history of childhood trauma” correlates with the mediator variable, “parenting stress.” Therefore, independent variable “childhood trauma” would be entered into a linear regression equation with the mediator variable “parenting stress” entered as the dependent variable,
with covariates as a block also entered into the regression.

**Step 3.** The third step would be to demonstrate that mediator variable “parenting stress” is related to the outcome variable “home environment provided.” In order to do this, “parenting stress” would be entered in a regression as the independent variable, with “home environment provided” entered as the dependent variable, and covariates entered as a block.

**Step 4.** The final step would test for mediation of the relationship between independent variable “history of childhood trauma” and dependent variable “home environment provided” by mediating variable “parenting stress.” This would be done by regressing (as if two independent variables) “history of childhood trauma” and “parenting stress” on dependent variable “home environment provided.” If the addition of mediator variable “parenting stress” to the model were to weaken the initial effect between independent variable “history of childhood trauma” and dependent variable “home environment provided” (i.e. if betas and p values decrease), then mediation could be said to have occurred. The meditational relationship would then be evaluated for statistical significance.
Chapter 4. Results

What follows are descriptions of the results of the statistical analyses conducted in order to address all research questions through testing their related hypotheses. Results will be addressed in the following order: sample characteristics; descriptive analyses of the study’s variables of interest, including covariates; correlations between study variables; and findings related to study questions and hypotheses.

Sample Characteristics

The study sample was comprised of 218 biological mothers who both retained custody of the index child and who completed the Childhood Trauma Questionnaire at the time the index child from the original “parent” study was 4 years old (see, for example, Linares et al., 2006; Farkas, Minn, Minnes, & Singer, 2004; Min, Farkas, Minnes, & Singer, 2007; Minnes, Singer, Humphrey-Wall, & Satayathum, 2008; Minnes et al., 2008; Noland, Singer, Arendt, Minnes, Short, & Bearer, 2003; Singer, Arendt, Minnes, Farkas, & Salvator, 2000; Singer, Arendt, Minnes, Farkas, Yamashita, & Kliegman, 1995; Singer et al., 2008; Singer, Salvador, Arendt, Minnes, Farkas, & Kliegman, 2002). Sample respondents’ ages at time of birth of index child ranged from 18 to 41 years; thus at time data were collected for the current study, respondents’ ages ranged from ~ 23 to 46 years ($M = 32.2$, $SD = 5.3$). The majority of the mothers in the present study were African-American ($n = 175$, 80.3%), 16.1% ($n = 35$) were White, 1.8% ($n = 4$) identified as Hispanic/Puerto-Rican, and 0.5% ($n = 1$) identified as Asian/Pacific Islander (with data missing on race for 3 cases). A quarter of sample respondents were either married (23.9%, $n = 52$) or in common-law relationships (1.4%,...
n = 3), 11% (n = 24) were divorced, 6.9% (n = 15) were separated, 0.9% (n = 2) were widowed, with 0.4% characterizing themselves as “other”; 55.5% of respondents (n = 121) had never been married. Maternal years of education in the study sample (at time index child 4 years old) ranged from 8 to 19 years (M = 12.17, SD = 1.72), with 33.5% (n = 73) indicating having completed less than 12 years, 40.4% (n = 88) at least 12 years, while 26.3% (n = 57) had continued to pursue some form of education after 12 years.

More than half of respondents (58.7%, n = 128) reported that they were currently employed, while 41.3% (n = 90) were not. 59.2% of maternal caregivers (n = 129) reported that a husband or boyfriend was helping them to financially raise the index child, with 29.4% (n = 64) denying such support, and 11.5% (n = 25) missing data on this variable (information about financial support from individuals other than husband or boyfriend was not collected). For all but one respondent (n = 217), net family income per month ranged from $0.00 to $4,800. (with one respondent reporting net monthly income of $7000.). Moreover, 52.3% of respondents (n = 114) reported a net family income per month of ≤ $1100.00, while for those remaining (46.8%, n = 103) net family income per month ranged from $1101. to $4,800.

The total number of children 18 years old or younger living in these mothers’ households, not including index child (n = 214, with missing data on 1.8 %, n = 4) ranged from 1 to 10 children (M = 3.1, SD = 1.75); a further breakdown of numbers of children in particular age categories was not available in the dataset for this sample. Although 39.4% (n = 86) of mothers lived in households where they themselves were the only adult, 58.8% of them (n = 128) lived in homes where there were other adults present, with from 1 to 4 other adults in household reported across the sample (1.8%, n =
4 cases missing data on this variable). (See also Table I, Appendix C.)

It should also be noted that at the time the index child was 4 years old, 49.3% of respondents \((n = 112)\) currently/recently smoked tobacco, 44.5% \((n = 97)\) endorsed current/recent use of alcohol, and 6% \((n = 13)\) acknowledged current/recent use of marijuana; these categories were not mutually exclusive, and so a given respondent may have been using more than one substance. Only 4 respondents endorsed current/recent use of cocaine, although 38.5% \((n = 84)\) of sample respondents had used cocaine at some point in their life. Of those in the study sample who had ever used any of these substances, the ages at which they first began to use were as follows: for tobacco, age of first use \((n = 140)\) ranged from 7-26 years old \((M = 15.4, SD = 3.5)\); for alcohol \((n = 190)\), age ranged from 1-34 years old \((M = 16.4, SD = 3.7)\); for marijuana \((n = 142)\), age ranged from 7-28 years old \((M = 15.8, SD = 2.8)\); and for cocaine \((n = 84)\), age of first use ranged from 11-39 years old \((M = 23.1, SD = 5.5)\).

**Results of Descriptive Analyses of Study Variables**

**Main Study Variables.** Results of descriptive analyses of model variables were as follows (and see also Table II, Appendix D).

**Variable 1.** Maternal history of childhood trauma, operationalized as total score on Childhood Trauma Questionnaire (CTQ). Total CTQ scores in the sample \((n = 218)\) ranged from 25-111, with \(M = 44.81, SD = 19.90\). Distribution of this variable was somewhat skewed toward lower scores, with skew = 1.34 and statistically significant at \(p \leq .05\), but still within normal limits per criteria of Curran, West, & Finch (1996). It should be noted that in this sample total scores on the Minimization/Denial subscale of the measure were normally distributed and represented all possible response values, with
total scores on the subscale ranging from 3 to 15 ($M = 8.61$, $SD = 3.48$). Thus, 41.2% of respondents ($n = 90$) scored above the sample mean on this subscale, indicating that they may have been minimizing or denying the extent of potentially traumatogenic experiences in their family of origin.

**Variable 2.** Parenting stress, operationalized as total score on Parenting Stress Index (PSI). Total PSI scores in the sample ranged from 121-404, with $M = 218.15$, $SD = 43.51$. Sample scores on this variable were within normal limits in terms of skew and kurtosis. As mentioned previously in the description of study methodology, 14.7% of respondents ($n = 32$) were missing data on this variable. However, of those who were scored on total PSI ($n = 186$), 16.7% ($n = 31$) scored $> 260$, indicating a level of parenting stress such that intervention and/or referral(s) specific to the respondent’s situation and needs was indicated (Abidin, 1995).

**Variable 3.** Home environment, operationalized as total score on Home Observation for Measurement of Environment Inventory-Early Childhood Version (EC-HOME). Total scores on the EC-HOME in this dataset ranged from 14-54, with $M = 41.48$, $SD = 6.34$ ($n = 218$). Sample scores on this variable were somewhat skewed towards higher scores (skewness = -.87, $p < .05$), though still within the limits of normality per criteria previously stated.

**Variable 4.** Current exposure to violence, operationalized as “husband or partner overall violence” score on Revised Conflict Tactics Scale (CTS2). “Husband or partner overall violence” scores on the CTS2 ranged from 0-36 ($n = 171$), with $M = 2.42$, $SD = 5.82$. With possible total score on this variable ranging from 0-126, distribution was markedly skewed toward lower scores (skewness = 3.47, $p < .05$), crossing the threshold
into the category of “severe” skew per criteria of Curran, West, & Finch (1996).

**Variable 5.** Current substance use, operationalized as the sum of the rater’s overall evaluation of need for treatment for alcohol and/or for drug use in the past 30 days. In this sample (n = 213) the score on current substance use ranged from 0-18 (M = 1.71, SD 3.42). The data were moderately skewed towards lower scores, per criteria of Curran, West, & Finch (1996). While all correlation and regression analyses used the original variable, in order further to explore distributions of substance use in this sample, “current substance use” was recoded such that scores fell into three categories (0-2 = low level severity of substance use, 3-12 = moderate level severity of use, 13-18 = high level severity of use). After recoding, 74.3% of respondents (n = 162) fell into the “low severity” category, 22% (n = 48) were in the “moderate severity” category, and 1.4% (n = 3) were in the “high severity” category (with n = 5, or 2.3% cases missing).

**Variable 6.** Avoidant coping, operationalized as total score on “avoidant coping” derived from Coping Orientations to Problems Experienced Scale (COPE). Scores on avoidant coping (n = 215) ranged from 12-42 (M =20.22, SD 5.98), with skew towards higher scores (skewness = 1.09, p < .05), though distribution still fell within normal limits per previously stated criteria.

**Variable 7.** Perceived social support, operationalized as total score on the Multidimensional Scale of Perceived Social Support (MSPSS). Total score on perceived social support (n = 213) ranged from 12-84 (M = 64.08, SD 17.69). While skewed towards higher levels of perceived social support (skewness = -1.05, p ≤ .05), distribution was still within normal limits, with missing data on 2.3% of cases (n = 5).

**Covariates.** Results of frequencies of covariates used in the study were as follows.
**Variable 8.** Maternal verbal ability, operationalized as total standardized score on the Peabody Picture Vocabulary Test-III (PPVT). Total standardized scores in this sample ranged from 40-159 ($M = 77.32$, $SD = 15.86$), and data were normally distributed per criteria as previously stated ($n = 211$, with data missing on 3.2%, $n = 7$ cases). As previously stated, 48.3% of respondent scores were below the sample mean.

**Variable 9.** Maternal mental health status, operationalized as score on Global Severity Index on the Brief Symptom Inventory (BSI). In this sample scores on the Global Severity Index ranged from .00-1.92 ($M = .36$, $SD = .41$; $n = 216$). The distribution was skewed toward lower scores, but nonetheless was still within normal limits, with 0.9% ($n = 2$) missing data on this variable.

**Variable 10.** Marital Status. The respondent’s current marital status was operationalized in terms of answer to item # 2 on the original “parent” study “Variable Demographic (Update)” questionnaire at Time 5. Possible response categories on this item were: Married; Divorce (sic); Separated; Never Married; Widow; Common Law; Other. For purposes of all analyses a new variable was created, with the original seven response categories sorted into “currently partnered” (those who answered Married, Common Law, and Other) and “not currently partnered” (those who answered Divorce, Separated, Never Married, and Widow). This resulted in 25.2% of sample respondents ($n = 55$) falling into the “currently partnered” category, while 74.3% ($n = 162$) were categorized as “not currently partnered” (with 0.5% missing data on this variable, $n = 1$). For discussion of the difficulties encountered in both this study and in “parent” study in capturing relationship status, see Chapter 5.

**Variable 11.** Total number of children in household $\leq$18 years old, not including
index child, operationalized as simple count per statement by maternal respondent. As previously reported, total number of children 18 years old or younger, not including index child, ranged from 1 to 10 children \((M = 3.1, \ SD = 1.75)\), with further details as to numbers of children in particular age categories unavailable in this dataset. Data were normally distributed, with \(n = 214\) (and missing data on 1.8 %, \(n = 4\)).

**Variable 12.** Current net monthly income, operationalized as dollar amount of monthly net family income as reported by maternal respondent. As stated earlier, in this sample net family income per month ranged from $0.00 to $4,800 \((n = 217)\), except for one respondent who reported a net monthly income of $7000 \((M = 1386., \ SD = 1020.)\). 52.5\% of respondents \((n = 114)\) reported a net family income per month of \(< $1100.00\), and 47.5\% \((n = 103)\) reported a net family income per month ranging from $1101. to $4,800. Thus, incomes in this sample were quite low, even including the one outlier with higher income in the calculation; though skewed towards lower incomes, was still within normal limits per criteria, above.

**Intercorrelations Between Study Variables**

What follows are the results of correlation analyses of study variables (and see Table III, Appendix E for all correlations of interest in the data set). As mentioned previously, none of the pre hoc correlations between independent variables reached levels indicating multicollinearity.

While independent variable “history of childhood trauma” (CTQ) weakly and negatively correlated with dependent variable “total score on the HOME” \((r = -.09)\), correlation did not rise to the level of statistical significance. “Parenting stress” (PSI) did correlate moderately and negatively with total score on the HOME, at \(r = -.34, p \leq .01\),
and “history of childhood trauma” (CTQ) was moderately and positively correlated with PSI, with $r = .34$, $p < .01$. There was moderate correlation at statistically significant levels between “parenting stress” (PSI) and model variables “husband or partner overall violence” ($r = .25$, $p < .01$), “avoidant coping” ($r = .36$, $p < .01$) and “perceived social support” ($r = -.34$, $p < .01$). Although significantly correlated, the relationship between PSI and “current substance use” was weak ($r = .17$, $p < .05$).

The covariate “maternal mental health” and “home environment” were negatively correlated, but the correlation was weak and did not reach statistical significance ($r = -.12$). “Parenting stress” moderately and significantly correlated with the covariate “maternal mental health” at $r = .53$, $p < .01$. The covariates “maternal verbal ability,” “marital status,” “total number of children $\leq 18$, and “current family net monthly income” did correlate with “home environment at statistically significant levels ($r = .39$, .23, -.22, and .38 respectively, each at $p < .01$).

**Findings Related to Study Questions and Hypotheses**

Hierarchical multiple regression analyses were used to test the models generated by the study questions and hypotheses. In testing each model, all covariates were entered first as one block, and then independent variables were added stepwise. Results of the regression analyses are discussed further with respect to each question and related hypotheses as follows. (See also Table IV and Table V, Appendices F and G.)

**Q1**

What is the nature of the relationship between degree of severity of maternal caregivers’ history of childhood trauma and the quality of the home environment provided for the children they parent?
The degree of severity of maternal caregiver history of childhood trauma, as measured by total score on the Childhood Trauma Questionnaire (CTQ), will be negatively related to, and will explain a statistically significant proportion of the variance in, the quality of home environment provided for the index child as measured by score on the Early Childhood HOME Inventory (EC-HOME), controlling for maternal verbal ability, current maternal mental health status, current net monthly income, marital status, and total number of children in household ≤ 18 years old (not including index child).

Interpretation. Consistent with the findings of the pre hoc correlation, the regression did not support a relationship between independent variable CTQ and dependent variable HOME (see Table IV, Step 2). Results of the regression of CTQ on HOME indicates an $R^2$ change that does not reach statistical significance ($R^2$ change = .001); the model as a whole is statistically significant only when the covariates are included, as more fully explained below. Likewise, the standardized $\beta$ of the CTQ contribution ($\beta = -.025$) is not statistically significant. Therefore, the null hypothesis cannot be rejected, and Question 1 Hypothesis 1 is not supported.

Four of the five model covariates did account for 26% of the variance in quality of home environment provided ($R^2$ change = .26, $p \leq .01$), with maternal verbal ability ($\beta = .24, \ p \leq .01$), maternal mental health ($\beta = -.15, \ p \leq .05$), current net monthly income ($\beta = .26, \ p \leq .01$), and number of children ≤ 18 ($\beta = -.16, \ p \leq .05$) impacting quality of home environment at statistically significant levels (Table IV,
Step 1). Marital status, however, did not contribute to the variance at a statistically significant level ($\beta = .05$).

**Q2**

Does 1) severity of current exposure to violence, 2) severity of current substance abuse, 3) current level of perceived social support, and 4) “avoidant” coping style impact upon levels of parenting stress experienced by maternal caregivers with any level of childhood trauma?

**Q2H1**

Increased severity of contemporary exposure to violence, as measured by current “husband or partner overall violence” score on the Revised Conflict Tactics Scale (CTS2) will be positively associated with, and will explain a statistically significant proportion of the variance in, level of maternal caregiver parenting stress as measured by current score on the Parenting Stress Index (PSI), with control variables per H1Q1 (see above).

**Q2H2**

Increased severity of contemporary substance abuse as measured by score on the Addiction Severity Index (ASI) will be positively associated with, and will explain a statistically significant proportion of the variance in, levels of parenting stress as measured by current score on the Parenting Stress Index (PSI), with control variables per H1Q1 (see above).

**Q2H3**

Decreased levels of perceived social support as measured by current score on the Multidimensional Scale of Perceived Social Support (MPSS) will be positively associated with, and will explain a statistically significant proportion of the variance in increased
levels of maternal caregiver parenting stress as measured by current score on the
Parenting Stress Index (PSI) with control variables per H1Q1 (see above).

Q2H4

“Avoidant” coping style in maternal caregivers as determined by sum of pertinent
subscale scores on the Coping Orientations to Problems Experienced scale (COPE) will
explain a statistically significant proportion of the variance in their parenting stress levels
as measured by current score on the Parenting Stress Index (PSI), and will be being
positively associated with more parenting stress, with control variables per H1Q1
(see above).

Interpretation. As stated previously, pre hoc tests showed that “perceived social
support” and “avoidant coping” moderately correlated with dependent variable
“parenting stress” at statistically significant levels, while the correlations between
“husband violence,” “current substance use, and dependent variable “parenting stress”
were weak, though at statistically significant levels.

With inclusion of covariates, the overall test model did reach statistical
significance, explaining 45% of the variance in levels of parenting stress ($R^2 = 0.45,$
$p < .01$) (see Table V, Step 5). Maternal mental health was the only covariate which
contributed to the variance in parenting stress at a statistically significant level in the final
model ($\beta = .46, p < .01$), with maternal verbal ability $\beta = -.05$, current net monthly
income $\beta = -.02$, marital status $\beta = .08$, and number children $\leq 18$ in the household $\beta =
.02$.

Moreover, with respect to Hypothesis 3, regression results showed that
“perceived social support” explained 5.0% of the variance in level of parenting stress at a
statistically significant level (R square change = .05, β = -.23 at p ≤ .01) (see Table V, Step 5). However, the remaining hypotheses for Question 2 were not supported: “current exposure to violence” (R square change = .02, β = .14) (Table V, Step 2), “current substance use” (R square change = .00, β = .01) (Table V, Step 3), and “avoidant coping” (R square change = .01, β = .10) (Table V, Step 4) did not contribute to variance in levels of parenting stress at statistically significant levels. Therefore, the null hypothesis could not be rejected for Hypotheses 1, 2, or 4.

Q3

Does a maternal caregiver’s level of parenting stress mediate the relationship between severity of history of childhood trauma and the quality of home environment provided for children?

Q3H1

Parenting stress in maternal caregivers will mediate the relationship between severity of history of childhood trauma and quality of home environment provided such that increased levels of parenting stress will be associated with, and will account for a statistically significant proportion of the variance in, the overall quality of home environment provided by these women for the children they parent, with control variables per H1Q1 (see above).

Interpretation. Mediation was not tested for, because no statistically significant relationship was established between independent variable “history of childhood trauma” and “home environment provided, as required to test mediation per Baron & Kenny (1986). The null hypothesis could therefore not be rejected, and hypothesis Q3Q1 was not supported.

Summary of Study Findings

In a community sample of low-income, urban, predominantly African-American
mothers, total scores on the Childhood Trauma Questionnaire were somewhat skewed toward lower scores, though with 41.2% of respondents scoring above the sample mean on the Minimization/Denial subscale of the measure. As reported by respondents in this sample, total scores on the Parenting Stress Index ranged from low to moderately high, with 16.7% of mothers scoring at or above the recommended cut point indicative of a need for further screening, possible clinical intervention, and/or referral to appropriate services and resources. Total scores on the EC-HOME were somewhat skewed towards higher scores, indicating increased quality of home environment provided children by these mothers according to both self-report and interviewer observations, though still normally distributed across the sample overall.

In terms of the study’s first research question, which examined the relationship between degree of severity of maternal caregivers’ history of childhood trauma and the quality of the home environment they provided children, *pre hoc* correlations indicated that independent variable “history of childhood trauma” did not correlate with the dependent variable “home environment provided children” at statistically significant levels. Regression analyses confirmed that in this sample “history of childhood trauma” did not predict the quality of home environment these women provided for their children. Therefore the study’s third question—an inquiry as to whether “parenting stress” mediated the relationship between “history of childhood trauma” and “home environment provided children”—was rendered moot. However, both “history of childhood trauma” and “home environment provided children” did correlate at statistically significant levels with parenting stress—that is, an increased incidence of potentially traumatogenic experiences in childhood was positively
associated with higher levels of parenting stress, and higher levels of parenting stress, in turn, were associated with a diminished quality of home environment provided children. Further, results of the regression model indicated that increased maternal verbal ability, higher levels of maternal mental health, higher current net monthly income, and fewer children ≤ 18 years old living in the household all predicted a statistically significant increase in the quality of home environment these mothers provided for their children.

With respect to the study’s second research question—which examined the possible relationship between current exposure to violence, current substance abuse, perceived social support, and “avoidant” coping style to parenting stress—only “perceived social support” was found to predict levels of parenting stress, with increased perceived social support predicting decreased levels of parenting stress. While increased “current exposure to violence” predicted increased parenting stress at statistically significant levels in the initial iterations of the model-building process (at Step 2, 3, and 4 of five steps), it was not found to be predictive at statistically significant levels in the final model. “Current substance use” and “avoidant coping” did not predict parenting stress at statistically significant levels in this sample of respondents. However, the covariate “maternal mental health” predicted parenting stress at statistically significant levels.
Chapter 5. Discussion

What follows is a discussion of the study questions and related results, limitations of the study, strengths of the study, implications for future research, and implications for social work practice and policy.

Discussion of Study Questions

Discussion of Study Question One. Question One was an inquiry as to the nature of the relationship between degree of severity of maternal caregivers’ history of childhood trauma and the quality of the home environment provided for the children they parent. In this sample, an increased incidence of adverse and potentially traumatogenic events in childhood did not predict corresponding deficits in the home environments these mothers provided for their children. It is likely that this was due at least in part to the fact that the study respondents’ total scores on the Childhood Trauma Questionnaire were skewed towards lower scores, making it more difficult to establish a relationship between the main variables of interest, further discussed as follows.

Sampling Issues. While the lack of substantive covariance between maternal history of childhood trauma and home environment provided children may reflect individual variation in response and resilience in the face of adverse events (see, for example, Briere & Jordan, 2009; Fassler, Amodeo, Griffin, Clay, & Ellis, 2005; Najavits, Weiss, & Shaw, 1999), it is most likely that the lower levels of history of childhood trauma in the sample were related to the study’s sampling strategy. First, this was a community sample rather than a clinical one, albeit one comprised of mothers considered to be at some risk for psychosocial difficulties given their low income and educational levels, their
vulnerability to discrimination based on race and/or class, and their likelihood of residing in neighborhoods where resources and support were lacking (Singer, Arendt, Minnes, Farkas, & Salvator, 2000; Singer, Salvator, Arendt, Minnes, Farkas, & Kliegman, 2002). Nonetheless, a sample of respondents able to function effectively enough to live at home in the community at large would tend to exclude those who might have experienced higher incidences of adverse and potentially traumatogenic events as children.

Further, the sample was limited to biological mothers who retained custody of the index child at the time of data collection. The rationale for using this sampling criterion was grounded in concerns about being able to accurately measure and control for caregiver disruptions, given the likely impact of such disruptions on the dependent variable, “home environment provided children.” In the original parent study, tracking out-of-home placements and related changes in caregivers has been very challenging: biological mothers who have experienced loss(es) of custody have tended to be poor historians, while nonbiological maternal caregivers participating in the study often are not aware of the full details of the index child’s placement history (Minnes, 2003b; Min, 2010). Thus, the intention of the sampling strategy was to isolate and clarify, to the greatest extent possible, the characteristics of the home environments mothers provided for their children without the potentially confounding effects of histories that included mandated interventions by child protective personnel, out-of-home child placements, and the loss, grief, and psychological pain attendant upon disruptions of the mother-child relationship. However, by definition, retention of custody reflects higher levels of adult maternal function, with the likely corollary of a decreased incidence of adverse childhood events and related psychological distress in the sample (see, for example, Minnes, Singer,
On a similar note, many of the women in this sample were apparently able to sustain intimate relationships, indicating higher levels of function and the likelihood of fewer and/or less severe adverse childhood events in their lives. Relationship status in terms of legal definitions was somewhat difficult to track in this sample, but it can be inferred that many of those who categorized themselves as “never married” were in fact in relationships at the time of data collection, given their responses to other items in the data set. For example, while only 25% of respondents reported being currently married or in a common-law relationship, 59% reported current financial support from a husband or boyfriend.

**Issues of Retrospective Recall and Memory.** Aside from sampling issues, it is also possible that a number of sample respondents were engaging to some extent in denial and/or minimization of past traumatic experience. 41% of study respondents scored above the sample mean on the Minimization/Denial subscale of the Childhood Trauma Questionnaire, indicating some degree of valorization of their family history, and/or a tendency to deemphasize painful events related to experiences in the family, with a consequent underreporting of trauma in the sample (Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, Sapareto, & Ruggiero, 1994; Bernstein & Fink, 1998). Further, with respect to retrospective recall of childhood maltreatment, a preponderance of the evidence shows that false negatives are more likely than false positives for a past history of child maltreatment—that is, individuals are more likely to deny, minimize, and/or repress memories of past abuse that can in fact be verified through collateral sources, CPS reports, court records, etc. than they are to manufacture accounts of abuse that
cannot be confirmed (see, for example, Bernstein, 2000; Dalenberg, 2006; Femina, Yeager, & Lewis, 1990; Jouriles, Mehta, McDonald, & Francis, 1997; Molnar, Buka, & Kessler, 2001; Widom & Morris, 1997; Williams, 1995; see also Loftus, Garry, & Feldman, 1994 “vs.” Williams, 1994a, 1994b). With regard to retrospective recall of respondents vis à vis use of the “Childhood Trauma Questionnaire,” Bernstein & Fink (1998) note that, while the vagaries of memory in retrospective recall of childhood trauma may constitute a threat to validity, it is more likely that painful memories will be withheld or suppressed, given the associated shame, fear of being stigmatized, and social desirability considerations, rather than that traumatic events will be fabricated. On a related note, while the controversy related to “false memory syndrome” is hardly a settled matter, it is becoming increasingly apparent that research related to memories induced experimentally in a laboratory situation may not be directly applicable to phenomena of memory related to the actual experience of trauma (see, for example, Dalenberg, 2006), and that “therapy-assisted recall” of having been abused is relatively rare (Wilsnack, Wonderlich, Kristjanson, Vogeltanz-Holm & Wilsnack, 2002). Therefore, it is possible that relatively low scores on the CTQ in this sample were in part due to minimization, denial, and/or memory impairment with respect to adverse childhood events.

Measurement Issues. In the present study the “Childhood Trauma Questionnaire” (CTQ) was used to operationalize the main independent variable, “maternal history of childhood trauma.” However, the measure’s designation as a “Childhood Trauma Questionnaire” is something of a misnomer (see, for example, Sandoval, 2001). While the CTQ does track the occurrence of adverse childhood events which may in fact have been traumatic for those adults recounting them, nonetheless this measure does not
explicitly capture the neurobiological, psychological and/or emotional sequelae of such experiences—i.e. total score on the CTQ does not necessarily reflect degree of trauma sustained. This imprecision constitutes a threat to construct validity, in that there may have been an inadequate explication of constructs in operationalizing “maternal history of childhood trauma,” thus undermining a full and accurate measure and reflection of the relationship between independent and dependent variables in this study (for a more complete discussion of the tendency across studies and measurement methodologies to blur the conceptual and clinical distinctions between stress, potentially traumatizing events, and clinical manifestations of trauma, see Dulmus & Hilarski, 2003).

It may be that a more clinically based measure would have better captured those neurobiological and psychosocial dimensions associated with trauma that might impact more directly and/or proximally on home environment provided children (for example, the Trauma Symptom Inventory (TSI), Briere, Elliott, Harris, & Cotman, 1995), or the PTSD Symptom Scale-Interview (PSS-I), Foa, Riggs, Dancu, & Rothbaum, 1993). Further, subclinical symptoms of trauma often manifest as more generalized symptoms of anxiety and/or depression rather than as PTSD symptoms per se (Yehuda & McFarlane, 1995)—consequently, for those women whose symptoms, though present, were more subtle or nonspecific, the GSI may be the more accurate measure of any psychoemotional effects of childhood experiences of trauma.

It is also possible that, given how the HOME-EC was conceptualized and constructed, the effects of childhood trauma on maternal behaviors and so home environment provided may not manifest concretely enough so as to be captured by the measure. The HOME-EC attempts to capture physical, material, and emotional dimensions of the home
environment provided by caretakers, and was essentially operationalized as a set of observable proxy variables for parenting (Bradley, 2004). Bradley (2004, p. 244) notes that the items on the various versions of the HOME are “…‘cause” or “formative” indicators (actions, objects, events, or conditions that produce a common outcome in someone or something else),” in contrast to “…‘effect” or “reflective” indicators (actions, objects, events, or conditions that reflect some underlying characteristic).” This means, then, that the EC-HOME “…is “good” (i.e., valid) to the extent that it accurately portrays those aspects of home life that influence child well-being—not because it represents (i.e., reflects) a characteristic of the parent or family” (Bradley, 2004, p. 244).

Given the present study’s finding of a statistically significant correlation between maternal history of childhood trauma and parenting stress ($r = .337, p < .01$), maternal history of childhood trauma does appear to be related to parenting, just not as manifest in the dimensions of parenting captured by the EC-HOME.

The covariates “maternal verbal ability,” “current net monthly income,” and “number of children ≤ 18 living in household” predicted the quality of home environment, indicating that a mother’s educational background, her access to financial resources, and the demands on her energy and time given the number of children she is responsible for are very much linked to the characteristics of the home environment she creates. This will be discussed further later in the chapter.

**Discussion of Study Question Two.** Study Question Two asked whether 1) severity of current exposure to violence, 2) severity of current substance abuse, 3) current level of perceived social support, and 4) “avoidant” coping style impact upon levels of parenting stress experienced by maternal caregivers with any level of childhood trauma.
In this sample, only independent variable “perceived social support” predicted levels of parenting stress for these mothers, with increased levels of perceived social support predicting decreased parenting stress.

As mentioned previously, “current exposure to violence” predicted increased parenting stress at statistically significant levels in the initial steps of the regression, but not in the final model. This may have been due to the fact that in this sample levels of violence perpetrated by male partners were low, and consequently the range of scores on this variable was somewhat restricted, increasing the possibility of a Type 2 error. Further, “current exposure to violence” was operationalized only in terms of violence perpetrated by a current male partner. This had two consequences, as follows: 1.) there was no ability to capture other possible sources of interpersonal and/or community violence in these women’s lives, a problem of construct validity, and 2.) those women who did not have a current male partner were not scored on this variable, with a consequent loss of cases (n = 47), and so power, in the related regression. This again raises the possibility of Type 2 error.

Although 

precisely 

analysis indicated that “current substance use” was positively correlated with parenting stress, after control for covariates “current substance use” did not predict parenting stress. As measured by total score on the Addiction Severity Index, a measure administered in an interview format, reported levels of current substance use in this sample were relatively low. However, given the shame and stigma which so often accompany open admissions of substance abuse, social desirability response bias may be an issue here, particularly as these maternal caregivers return to a familiar core staff of investigators year after year and are likely to want to be seen by them as doing well
Thus, it is possible that study respondents were minimizing their use of substances, making it more difficult to fully delineate a relationship between substance abuse and parenting stress.

While in \textit{pre hoc} analysis “avoidant coping” did correlate with parenting stress at statistically significant levels, it did not reach statistical significance as a predictor in the regression analysis. Although it would seem logical to suppose that a mother’s avoidant style of coping would result in important tasks undone and stressful interpersonal issues unresolved, thus increasing parenting stress, it may be that the path of influence is less direct (see, for example, Min, Farkas, Minnes, & Singer, 2007).

Finally, the covariate “maternal mental health” did predict parenting stress at statistically significant levels, with higher levels of maternal mental health predicting lower levels of parenting stress. The implications of this finding will be discussed further later in the chapter.

\textbf{Discussion of Study Question Three.} Study Question Three asked whether a maternal caregiver’s level of parenting stress mediates the relationship between severity of history of childhood trauma and the quality of home environment she provides for her children. As previously explained, because regression analysis did not support a statistically significant relationship between a history of childhood trauma and the quality of home environment, mediation could not be tested for.

\textbf{Limitations of the Study}

Given that study respondents were predominantly African-American and of low income, findings may not be generalizable to other populations of maternal caregivers and their children (Minnes, 2003b). Similarly, because the study sample was a...
community sample, these results may not generalize to mothers in clinical or other settings. Further, some results may not be generalizable to women who are not currently in a relationship, given that total scores on the Parenting Stress Index and the Revised Conflict Tactics Scale were not available for those study respondents not currently partnered as operationalized for purposes of the study.

On a related note, it was very difficult to establish the relationship status of sample respondents, as the possible response categories on the original demographic variable in the parent study was coded in terms that might not fit the status of some respondents. For example, a woman in a relationship other than legal marriage or a common-law arrangement but who also had never been married would have had to choose either “Other” (which only 0.4% of respondents did), or “Never Married,” which fails to capture her current relationship. Given that 55.5% of respondents characterized themselves as “Never Married” and yet many of these same respondents provided, for example, information related to levels of current violence by male partner and/or to parenting stress as related to a spouse, it appears that many women in the study were in intimate relationships that did not fall into the provided categories. Therefore, study results may not be generalizable to women in serious relationships that are not legally recognized, or that are less traditional within the culture at large (e.g. a lesbian relationship).

Another limitation of the study is that there was no covariate related to child characteristics that might adversely impact a given mother’s capacity to nurture and provide for her children. A child with a serious medical problem, for example, requires more energy, time, and financial resources than a child who does not have special needs.
Such circumstances might increase a mother’s level of parenting stress, for example, or limit her financially in providing books and toys for her children, but were not controlled for in this study. Similarly, maternal age was not included as a covariate in the study, although age may in fact be pertinent to a given mother’s energy level, emotional maturity, and/or efficacy of the life skills she deploys in nurturing her children.

Possible threats to internal validity which may have affected results of the study include repeated measurement and panel conditioning effects, given that these respondents had been asked to respond to some of the same questions and measures at previous points in data collection over the course of the longitudinal “parent” study (Menard, 1991). However, while such effects cannot be completely ruled out, the fact that the present study’s data collection was separated by two years from the previous collection of data makes it less likely to have been a problem here. It should also be noted that, although a substantial percentage of the original participants in this longitudinal study have been maintained over time, nonetheless panel attrition remains a concern, particularly if there is an element of self-selection out of the parent study—if, for example, those participants most severely affected by trauma and/or substance abuse comprise a significant proportion of those lost to follow-up (Menard, 1991).

**Strengths of the Study**

There have been relatively few studies examining maternal behaviors using community or even clinical samples, as opposed to samples drawn from criminal justice and/or child-welfare settings (Hien & Honeyman, 2000). In the present study, however, a community sample was used—the sample was obtained by recruiting pre- and post-partum women in a hospital setting, and shortly after giving birth these women then
naturally returned to their home communities. It is important, however, that study results be generalized to those living in higher risk community contexts, given study respondents’ characteristics (e.g. lower income).

A second strength of the study was the use of standardized measures. There is a recognized need for more consistent use of terminology and uniformity of measurement across studies that examine issues of trauma, child welfare, parenting, and home environment (see, for example, Dulmus & Hilarski, 2003; Finkelhor & Jones, 2006; National Institute of Child Health and Human Development, 2002; Straus & Kantor, 2005). This would allow for greater specificity and accuracy in comparing findings across studies, as well as help to bridge methodological and definitional inconsistencies across disciplines.

Further, the study included a measure of home environment—the EC-HOME—which examines dimensions of the home environment which would be amenable to intervention, augmentation, and alteration. Recent research findings increasingly suggest that quality of home environment is an important variable in relationship to child developmental outcome (e.g. Leventhal, Selner-O’Hagan, Brooks-Gunn, Bingenheimer, & Earls, 2004). However, relatively few studies to date have examined in detail those specific characteristics and qualities which constitute “home environment” in terms of both mothering/parenting behaviors and physical/material aspects of the child’s home, thus limiting our understanding of exactly how and where to intervene so as to maximize child outcomes.

Parcel, Dufur, & Zito (2010), for example, identify “social capital” in the home as key to child well being, but they define “social capital” in very general terms as “resources
that inhere in the relationships between and among actors that facilitate a range of social outcomes” (p. 830), mentioning also “bonds,” “time,” and “attention” invested by parents in their children. Turkheimer, Haley, Waldron, D’Onofrio, & Gottesman (2003) found that in “impoverished” home environments, 60% of the variability in children’s IQ was attributable to home environment, with almost no contribution traceable to their genetic heritage (a pattern that essentially reversed itself in wealthier families). However, Turkheimer et al. acknowledged that their use of “SES” as a measure of “home environment” necessarily limited their ability to disentangle the underlying “developmental mechanisms.”

**Implications for Future Research**

The current study might be improved in several ways. So as to increase power and introduce more variability with respect to variables of interest, the model could be tested using the entire dataset of all caregivers, rather than limiting the sample to biological mothers who maintained custody at the time the index children were four years old. Further, the use of a statistical method such as Structural Equation Modeling, rather than regression analyses, might more effectively capture the relationships between the variables of interest. Based on findings of the current study, a more robust explanatory model might examine the nature of the relationships between maternal mental health, parenting stress, and home environment, and between maternal mental health, perceived social support, parenting stress, and home environment. Differences in outcomes might also be explored as related to gender of index child, whether or not that child was exposed to alcohol/drugs in utero, and maternal lifetime history of substance abuse.

Key to any further exploration of the question as to possible impact of a mother’s
history of childhood trauma on parenting stress and/or the home environment provided her children would be to use a measure that captures to the fullest extent possible the psychoneurological effects of such trauma, rather than simply identifying and quantifying the incidence of adverse life events in her life (e.g. Trauma Symptom Inventory (TSI), Briere, Elliott, Harris, & Cotman, 1995; PTSD Symptom Scale-Interview (PSS-I), Foa, Riggs, Dancu, & Rothbaum, 1993). In theory this would allow for more specificity in testing for causal process with respect to maternal history of potentially traumatogenic experiences, maternal mental health, and mothering practices, including provision of home environment for children.

It would also be useful to explore questions of mothering behaviors and home environment provided children using a measure that more realistically captures the day-to-day gestalt of mothering characteristics and behaviors, interactive emotional processes, and material, instrumental aspects of a child’s home environment as delineated in Bronfenbrenner’s conceptualization of a “human ecology of development.” Interestingly, Leventhal, Selner-O’Hagan, Brooks-Gunn, Bingenheimer, & Earls (2004) have attempted to facilitate such exploration through development of “The Homelife Interview,” using Bradley & Caldwell’s HOME Inventory (in all of its versions) as a “map.” Leventhal et al. characterize their measure, which is administered in the home as an interview with observation, as an “effort toward assessing aspects of home environment, including six general domains: (1) parental warmth and responsivity, (2) provision of learning activities, (3) parental supervision and monitoring, (4) parental communication skills, (5) routines, and (6) quality of physical environment” (p. 212).

Given study findings, in the future a more direct and specific research focus might
be brought to bear on questions of how maternal verbal ability, access to financial and material resources, and perceived social support are related to mothering and home environment provided children. Further, it would be of interest to more thoroughly explore possible relationships between a variety of coping styles and the study’s main variables of interest, in addition to the present study’s focus on “avoidant coping.”

Finally, there has been very little work done with respect to the Minimization/Denial subscale of the Childhood Trauma Questionnaire (CTQ), either in terms of the related theoretical and conceptual issues or its psychometric properties. In describing the CTQ researchers often mention the fact that the subscale items are present, and that scores on the three Minimization/Denial items are not included in calculating the CTQ total score. However, results on the Minimization/Denial subscale are not subsequently reported in study findings, and it is not clear how, or even if, researchers take the results on these subscale items into consideration when interpreting study findings (see, for example, Bernstein et al, 2003; Minnes et al, 2008). The three subscale items were originally included in the CTQ to help ensure validity of the instrument, as well as to provide some indication in a clinical setting of a given respondent’s tendency to minimize or deny a childhood history of traumatogenic experience(s) (Bernstein & Fink, 1998). However, specific applications and implications of the Minimization/Denial subscale score within the context of trauma research have yet to be addressed—subscale scoring norms have not been established, for example, nor has use of the subscale score as a covariate been explored. Given the complexity and controversy related to issues of veracity and accuracy in retrospective recall of traumatic experience, this would appear to be an area requiring further research.
Implications for Social Work Practice and Policy

Given that study findings indicated that lower levels of parenting stress are related to increased quality of home environment provided for children, it is important that social workers develop effective strategies in helping mothers both to identify specific manifestations of their own parenting stress, and to develop ways in which to manage and alleviate that stress effectively. Given also the relationship demonstrated between increased levels of perceived social support and decreased levels of parenting stress, effective intervention should include skills development in terms of gauging the reliability and safety of potential sources of support, and learning how to access those sources. Very provisionally (because not statistically significant in the final model), there was evidence of a possible relationship between parenting stress and contemporary exposure to violence, and so the social worker might also address the issue of maintaining emotional and physical safety in interpersonal relationships while discussing social support.

Because maternal mental health predicted both parenting stress and quality of home environment provided children, it is also important that social work practitioners working with mothers and their families be trained to assess for a range of adult mental health problems, including substance abuse, and to be well versed in clinical presentations, symptoms and related diagnostic categories, and appropriate modalities of treatment and/or referral. Further, the social worker should be aware of additional resources and services in the community that would be helpful to a mother with a mental health and/or substance abuse problem (e.g. support groups, respite care programs, subsidies available to help pay for medication, etc.).
Study results indicated that increased maternal verbal ability, higher current net monthly income, and fewer children ≤ 18 years old living in the household were all related to increased quality of home environment mothers were able to provide for their children. All of these factors have to do with financial and material resources available, in relation to size of household and so the demands on those resources. Maternal verbal ability tends to be a reflection of education, which in turn is directly related to her socioeconomic status while growing up (Brooks-Gunn, Duncan, & Britto, 1999).

Therefore, in order to best assist mothers in providing an optimal home environment for their children, especially those mothers of lower socioeconomic status, it is imperative that social workers strive at mezzo and macro levels to resolve economic injustice, class disparities, and inequities in human service delivery. At the same time, social workers must continue to work at the level of individual mothers and their families to deliver excellent child and family mental health and other social services, especially when a maternal history of childhood trauma is found. Both modes of practice are integral to creating healthy mothers and children. Social workers are uniquely positioned to carry these tasks forward, and there is no time to lose in doing so.
## List of Appendices

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<td>126</td>
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Appendix A, Figure 1. Conceptual model: Maternal history of childhood trauma, parenting stress, and quality of home environment provided for children.
Appendix B, Figure 2. Test model: Maternal history of childhood trauma, parenting stress, and quality of home environment provided for children (with covariates as in Appendix A, Figure 1.).
### Appendix C, Table I

**Sample Characteristics (N = 218)**

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<thead>
<tr>
<th>Characteristic</th>
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<th>%</th>
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<tbody>
<tr>
<td><strong>Maternal age</strong></td>
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<td></td>
</tr>
<tr>
<td>23-29</td>
<td>99</td>
<td>45.4</td>
</tr>
<tr>
<td>30-39</td>
<td>102</td>
<td>46.8</td>
</tr>
<tr>
<td>40-46</td>
<td>17</td>
<td>7.8</td>
</tr>
<tr>
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<tr>
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<td><strong>Marital/relationship status</strong></td>
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<tr>
<td>Married</td>
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<td>23.9</td>
</tr>
<tr>
<td>Never married</td>
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<tr>
<td>Common-law</td>
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<tr>
<td>Separated</td>
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<td>6.9</td>
</tr>
<tr>
<td>Divorced</td>
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<td>11.0</td>
</tr>
<tr>
<td>Widowed</td>
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<td>0.9</td>
</tr>
<tr>
<td>Other</td>
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<td>0.4</td>
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<tr>
<td><strong>Years of education completed</strong></td>
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<td></td>
</tr>
<tr>
<td>8-11</td>
<td>73</td>
<td>33.5</td>
</tr>
<tr>
<td>12</td>
<td>88</td>
<td>40.4</td>
</tr>
<tr>
<td>13-16</td>
<td>56</td>
<td>25.8</td>
</tr>
<tr>
<td>17-19</td>
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</tr>
<tr>
<td><strong>Employment status</strong></td>
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<td></td>
</tr>
<tr>
<td>Currently employed</td>
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<tr>
<td>Not currently employed</td>
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Appendix C, Table I, cont.

*Sample Characteristics (N = 218)*

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<tr>
<th>Characteristic</th>
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<td>Duration employment (if employed)</td>
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<tr>
<td>&lt; 1 year</td>
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<td>10.6</td>
</tr>
<tr>
<td>1-2 years</td>
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<td>14.2</td>
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<tr>
<td>3-4 years</td>
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<td>28.0</td>
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<tr>
<td>&gt; 4 years</td>
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<td>5.5</td>
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<tr>
<td>Hours worked (if employed)</td>
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<td>&lt; 40 hours/week</td>
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<td>39.3</td>
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<td>40 hours/week</td>
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<td>52.3</td>
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<tr>
<td>&gt; 40 hours/week</td>
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<td>8.4</td>
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<tr>
<td>Financial and material resources</td>
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<td>Net family income per month</td>
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</tr>
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<td>$0.00 to $1,100.00</td>
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<td>&gt; $4,801.00</td>
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<td>0.5</td>
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<td>Information not available</td>
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<tr>
<td>No</td>
<td>103</td>
<td>47.2</td>
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<td>Household receiving food stamps</td>
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<tr>
<td>No</td>
<td>95</td>
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### Appendix D, Table II

**Frequencies and Descriptives for Study Variables, With Selected Subscales (N = 218)**

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<th>n</th>
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<td><strong>Main Study Variables</strong></td>
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<td>Maternal history of childhood trauma (CTQ)</td>
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<td>44.81</td>
<td>19.90</td>
<td>25-125</td>
<td>25-111</td>
<td>1.34</td>
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<tr>
<td>Emotional abuse</td>
<td>218</td>
<td>9.02</td>
<td>5.02</td>
<td>5-25</td>
<td>4-25</td>
<td>1.35</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>218</td>
<td>8.33</td>
<td>4.51</td>
<td>5-25</td>
<td>3-25</td>
<td>1.74</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td>218</td>
<td>8.39</td>
<td>5.89</td>
<td>5-25</td>
<td>4-25</td>
<td>1.61</td>
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<td>Emotional neglect</td>
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<tr>
<td>Physical neglect</td>
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<tr>
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<td>8.61</td>
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<td>Parenting stress (PSI)</td>
<td>186</td>
<td>218.15</td>
<td>43.51</td>
<td>101-505</td>
<td>121-404</td>
<td>0.41</td>
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<tr>
<td><strong>Home environment (HOME)</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Stimulation toys, games, reading</td>
<td>218</td>
<td>7.93</td>
<td>2.17</td>
<td>0-11</td>
<td>1-11</td>
<td>-0.69</td>
</tr>
<tr>
<td>Language stimulation</td>
<td>217</td>
<td>6.20</td>
<td>1.06</td>
<td>0-7</td>
<td>2-7</td>
<td>-1.59</td>
</tr>
<tr>
<td>Physical environment</td>
<td>218</td>
<td>5.88</td>
<td>1.44</td>
<td>0-7</td>
<td>1-7</td>
<td>-1.42</td>
</tr>
<tr>
<td>Pride, affection, warmth</td>
<td>218</td>
<td>5.38</td>
<td>1.46</td>
<td>0-7</td>
<td>0-7</td>
<td>-0.95</td>
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<tr>
<td>Stimulation academic behavior</td>
<td>218</td>
<td>4.27</td>
<td>1.10</td>
<td>0-5</td>
<td>0-5</td>
<td>-1.89</td>
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<tr>
<td>Modeling, encouragement social maturity</td>
<td>218</td>
<td>1.92</td>
<td>1.18</td>
<td>0-5</td>
<td>0-5</td>
<td>0.45</td>
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<tr>
<td>Variety of stimulation</td>
<td>218</td>
<td>6.00</td>
<td>1.74</td>
<td>0-9</td>
<td>2-9</td>
<td>-0.04</td>
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<td>Physical punishment</td>
<td>218</td>
<td>3.90</td>
<td>0.45</td>
<td>0-4</td>
<td>0-4</td>
<td>-6.14</td>
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<tr>
<td>Current exposure to violence (CTS2)</td>
<td>171</td>
<td>2.42</td>
<td>5.82</td>
<td>0-126</td>
<td>0-36</td>
<td>3.47</td>
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<td>Current substance use (ASI)</td>
<td>213</td>
<td>1.71</td>
<td>3.42</td>
<td>0-18</td>
<td>0-18</td>
<td>2.33</td>
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<tr>
<td>Avoidant coping (COPE)</td>
<td>215</td>
<td>20.22</td>
<td>5.98</td>
<td>12-48</td>
<td>12-42</td>
<td>1.09</td>
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</table>
Appendix D, Table II, cont.

*Frequencies and Descriptives for Study Variables, With Selected Subscales (N = 218)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
<th>Range</th>
<th>Potential</th>
<th>Actual</th>
<th>Skew</th>
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<td>Perceived social support (MSPSS)</td>
<td>213</td>
<td>64.08</td>
<td>17.69</td>
<td>12-84</td>
<td>12-84</td>
<td>-1.05</td>
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<tr>
<td>Covariates</td>
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<tr>
<td>Maternal verbal ability (PPVT-III)</td>
<td>211</td>
<td>77.32</td>
<td>15.86</td>
<td>40-160</td>
<td>40-159</td>
<td>0.83</td>
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<tr>
<td>Maternal mental health status (GSI on BSI)</td>
<td>216</td>
<td>0.36</td>
<td>0.41</td>
<td>.00 - 4.0</td>
<td>.00 – 1.92</td>
<td>1.83</td>
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<tr>
<td>Total number children ≤ 18 in household, not including index child</td>
<td>214</td>
<td>3.1</td>
<td>1.75</td>
<td>∞</td>
<td>1-10</td>
<td>1.21</td>
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<tr>
<td>Current family net monthly income ($)</td>
<td>217</td>
<td>$1386.00</td>
<td>$1020.</td>
<td>∞</td>
<td>$0.0-$7000.</td>
<td>1.68</td>
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<td>Marital status</td>
<td>217</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Currently partnered</td>
<td>n = 55 (25.2%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not currently partnered</td>
<td>n = 162 (74.3%)</td>
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</table>
Appendix E, Table III

*Intercorrelations Between Study Variables (N = 218)*

<table>
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<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<tbody>
<tr>
<td>Maternal history childhood trauma (CTQ)</td>
<td>--</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenting stress (PSI)</td>
<td>.337**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home environment (HOME)</td>
<td>-.091</td>
<td>-.335**</td>
<td>--</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Current exposure to violence (CTS2)</td>
<td>.221**</td>
<td>.250**</td>
<td>-.237**</td>
<td>--</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current substance use (ASI)</td>
<td>.131</td>
<td>.169*</td>
<td>-.279**</td>
<td>.062</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Avoidant coping (COPE)</td>
<td>.025</td>
<td>.356**</td>
<td>-.123</td>
<td>.104</td>
<td>.115</td>
<td>--</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Perceived social support (MSPSS)</td>
<td>-.380**</td>
<td>-.339**</td>
<td>.231**</td>
<td>-.078</td>
<td>-.187**</td>
<td>-.003</td>
<td>--</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maternal verbal ability (PPVT-III)</td>
<td>.023</td>
<td>-.081</td>
<td>.389**</td>
<td>.025</td>
<td>-.082</td>
<td>-.014</td>
<td>.208**</td>
<td>--</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maternal mental health (GSI on BSI)</td>
<td>.258**</td>
<td>.525**</td>
<td>-.124</td>
<td>.121</td>
<td>.064</td>
<td>.445**</td>
<td>-.301**</td>
<td>.006</td>
<td>--</td>
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</tr>
<tr>
<td>Marital status (currently partnered/not)</td>
<td>.017</td>
<td>-.014</td>
<td>.229**</td>
<td>-.138</td>
<td>-.101</td>
<td>.082</td>
<td>.056</td>
<td>.120</td>
<td>.093</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number children ≤ 18</td>
<td>.059</td>
<td>.016</td>
<td>-.219**</td>
<td>.073</td>
<td>.175*</td>
<td>-.094</td>
<td>-.150*</td>
<td>-.207**</td>
<td>-.011</td>
<td>.026</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Current family net monthly income ($)</td>
<td>-.039</td>
<td>-.126</td>
<td>.377**</td>
<td>-.077</td>
<td>-.231**</td>
<td>-.006</td>
<td>.216**</td>
<td>.292**</td>
<td>-.012</td>
<td>.561**</td>
<td>-.093</td>
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</tr>
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</table>

*p ≤ .05; **p ≤ .01
Appendix F, Table IV

_Hierarchichal Regression Analysis for Maternal History of Childhood Trauma_

_Predicting Home Environment Provided Children (Q1H1) (N = 203)_

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>Step 1 $\beta$</th>
<th>Step 2 $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal verbal ability (PPVT-III)</td>
<td>0.24**</td>
<td>0.24**</td>
</tr>
<tr>
<td>Maternal mental health (GSI on BSI)</td>
<td>- 0.15*</td>
<td>- 0.14*</td>
</tr>
<tr>
<td>Current net monthly income ($)</td>
<td>0.26**</td>
<td>0.26**</td>
</tr>
<tr>
<td>Marital status (currently partnered/not)</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Number children $\leq 18$ in household</td>
<td>- 0.16*</td>
<td>- 0.16*</td>
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<tr>
<td>Maternal history of childhood trauma</td>
<td>- 0.025</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>34.23</td>
<td>34.46</td>
</tr>
</tbody>
</table>

$R^2$  

| $\Delta F$  
|-----------------|-----------------|-----------------|
| $\Delta R^2$  
|----------|-----------------|-----------------|

$^{*p \leq .05; **p \leq .01}$
Appendix G, Table V

*Hierarchical Regression Analysis for Current Exposure to Violence, Current Substance Use, Avoidant Coping, and Perceived Social Support Predicting Parenting Stress (Q2H1-4) (N = 126)*

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>Step 1 $\beta$</th>
<th>Step 2 $\beta$</th>
<th>Step 3 $\beta$</th>
<th>Step 4 $\beta$</th>
<th>Step 5 $\beta$</th>
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</thead>
<tbody>
<tr>
<td><strong>Covariates</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maternal verbal ability (PPVT-III)</td>
<td>- 0.06</td>
<td>- 0.07</td>
<td>- 0.07</td>
<td>- 0.07</td>
<td>- 0.05</td>
</tr>
<tr>
<td>Maternal mental health (GSI on BSI)</td>
<td>0.60**</td>
<td>0.57**</td>
<td>0.57**</td>
<td>0.53**</td>
<td>0.46**</td>
</tr>
<tr>
<td>Current net monthly income ($)</td>
<td>- 0.06</td>
<td>- 0.06</td>
<td>- 0.05</td>
<td>- 0.05</td>
<td>- 0.02</td>
</tr>
<tr>
<td>Marital status (currently partnered/not)</td>
<td>0.05</td>
<td>0.08</td>
<td>0.08</td>
<td>0.07</td>
<td>0.08</td>
</tr>
<tr>
<td>Number children &lt; 18 in household</td>
<td>0.04</td>
<td>0.01</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Current exposure to violence (CTS2)</td>
<td></td>
<td>0.16*</td>
<td>0.16*</td>
<td>0.15*</td>
<td>0.14</td>
</tr>
<tr>
<td>Current substance use (ASI)</td>
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<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.01</td>
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<tr>
<td>Avoidant coping (COPE)</td>
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<td></td>
</tr>
<tr>
<td>Perceived social support (MSPSS)</td>
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<td></td>
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<td><strong>Constant</strong></td>
<td>205.78</td>
<td>208.05</td>
<td>207.04</td>
<td>193.33</td>
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<tr>
<td>$R$</td>
<td>0.38**</td>
<td>0.40*</td>
<td>0.40</td>
<td>0.41</td>
<td>0.45**</td>
</tr>
<tr>
<td>$\Delta F$</td>
<td>14.53**</td>
<td>4.60*</td>
<td>0.28</td>
<td>0.94</td>
<td>9.88**</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>0.38</td>
<td>0.02</td>
<td>0.00</td>
<td>0.01</td>
<td>0.05</td>
</tr>
</tbody>
</table>

*p $\leq$ .05; **p $\leq$ .01
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