

ABSTRACT

Title of dissertation: PATHWAYS BETWEEN EXPOSURE TO
 VIOLENCE, FAMILY STRUCTURE, MATERNAL
 DEPRESSION, PARENTING STYLES, AND CHILD
 OUTCOMES: A MULTI-GROUP ANALYSIS

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Arguably one of the greatest influences on a child's development is the parenting he or she experiences. With that perspective, family stress theory posits that children in low-income families are affected by poverty-related stressors through their effect on their parents. The present study used family stress theory as a framework to study the impact of proximal (i.e., family structure, maternal depression) and distal (i.e., community violence) risk factors, or stressors, on parenting characteristics which were in turn hypothesized to impact child social-emotional functioning. Data from the FACES 2000 study of children enrolled in Head Start and their families were used to conduct the analyses. The sample consisted of 1417 African American, Latino, and White mothers of preschool children. The present study hypothesized that exposure to violence, family structure, maternal depression, and parenting styles measured at time 1 would affect child

social-emotional functioning at time 2. Moreover, it was hypothesized that a SEM model wherein violence exposure, family structure, and maternal depression's influenced parenting characteristics, which then impacted the child outcome, would fit the data. Finally, it was hypothesized that these findings would be consistent across African American, Latino, and White subgroups. The data revealed that the study variables were significant predictors of the child outcome. Although few of the key variables significantly contributed to the regression models or had significant pathways in the SEM models, the cumulative effect of the variables resulted in significant models that accounted for 21-37% of the outcome. The multi-group analysis revealed that despite differences in the amount of variance explained, the causal pathways were consistent for the groups analyzed. Findings support theories such as the family stress model that suggest that poverty related stressors negatively impact children's development by first negatively impacting parenting behaviors. This pattern of influence was consistent across race/ethnicities. It may not be practical to expect practitioners to address the myriad of potential risks factors encountered by low-income families, but parents can be equipped with mental health services, parent education, and other such assistance to help them maintain positive parenting practices in the face of life's challenges.

PATHWAYS BETWEEN EXPOSURE TO VIOLENCE, MATERNAL DEPRESSION,
FAMILY STRUCTURE AND CHILD OUTCOMES THROUGH PARENTING: A
MULTI-GROUP ANALYSIS

by

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Dedication

Read the first sentence of this document and you begin to understand how indebted I feel to my mother and father. Everything that I am or aspire to be is because of my parents. They are warm, funny, smart, giving, compassionate, active, and loving. For the researchers, let me make it clear: they are textbook authoritative parents who nurtured my interests, encouraged independence while fostering secure attachment, set appropriate boundaries, and used consistent discipline. Most importantly since I am the weird one in this family, my parents accept me unconditionally and have full confidence in my ability to achieve my goals even if they don't fully understand why I've chosen them. Knowing that they have my back makes it so much easier to wake up every day and face the world. Thank you, Mom and Dad. I love you.

The other great gift my mom and dad gave me is a sister who was also raised to be a wonderful, confident, smart woman – and to look after her little sister. My sister has been my caretaker, my role model, my biggest fan, and my best friend. Yo, I hope you know how much I respect you and how much your respect means to me. I love you.

And, finally, I dedicate this to my favorite kid in the whole world, my nephew Brandon. I hope that by achieving this milestone I can show you that you can do anything you set your mind to no matter how many people tell you that it can't be done. Say it loud...

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Aka: It Takes a Village to Get a PhD

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Chapter 1

Introduction

Arguably one of the greatest influences on a child's development is the parenting he or she experiences. For children in low-income families in particular, positive parenting practices can buffer children from the negative effects of growing up in poverty. For example, parenting practices predicted school readiness in a sample of poor, African American preschool children (McGroder, 2000). Similarly, positive parenting behaviors have been found to reduce the relationship between income and child behavior problems (Linver, Brooks-Gunn, Kohen, 2002). Likewise, non-optimal parenting behaviors have been shown to be associated with poor social-emotional outcomes such as disruptive behavior in low-income preschoolers (Bor & Sanders, 2004). In fact, as research suggests that poverty is most detrimental to younger children (Brooks-Gunn & Duncan, 1997), the potential for parenting to serve as a protective buffer may be strongest for young children.

It is for this reason that programs that serve low-income children, such as Head Start, incorporate parent education into their programmatic goals as a means to improve the lives of the children they serve. Although many centers have difficulty fully implementing parent education programs (Duch, 2005), nationally over two-thirds of parents of Head Start children report contact with their child's center (e.g., home visits, classroom observations), indicating the potential impact of Head Start and similar programs on low-income parents of young children (USDHHS, ACYF, 2003). As low-income children are exposed to greater risks than their higher income peers, equipping

parents with the necessary tools to support and guide their children in the face of these challenges is an important policy goal.

The deleterious impact of poverty on children and families has been attributed to the multiple risk factors which accompany it. Exposure to violence is a particularly insidious condition affecting children in impoverished neighborhoods. Specifically, community violence, defined as “experiencing, seeing, or hearing about violence in one's home, school, or neighborhood” (Kliewer et al., 2004, p. 477), is more prevalent in low-income neighborhoods (e.g., Jones, Foster, Forehand, & O'Connell, 2005; Pinderhughes, Nix, Foster, Jones, & The Conduct Problems Prevention Research Group, 2001). Further, community violence has been associated with compromised parenting such as low levels of warmth (Pinderhughes et al., 2001) and inconsistent discipline (Kotchick et al., 2005). Evidence also suggests a link between exposure to violence and poor psychological functioning (Aisenberg, 2001; Self-Brown et al., 2006). Direct and indirect links between exposure to violence and negative child outcomes such as internalizing problems (Grant et al., 2005), externalizing behaviors (Plybon & Kliewer, 2001), and cognitive functioning (Farver, Natera, & Frosch, 1999) have also been reported.

Maternal depression is another family risk factor that has been shown to be prevalent among low-income families (e.g., Black et al., 2002; Koblinsky, Kovalanka, Randolph, 2006). Of particular interest to the current study, Koblinsky et al. (2006) reported that nearly half of their sample of African American mothers with children enrolled in Head Start exhibited elevated depressive levels. The prevalence of maternal depression among low-income families is consistent across racial/ethnic groups with high

incidences being reported for African American (e.g., Weis, 2002), Latino (e.g., Chaudron et al., 2005), and White mothers (e.g., Raikes & Thompson, 2006). According to one study with a diverse racial/ethnic sample of mothers with children enrolled in Early Head Start programs, family risk factors explained a significant amount of the variance in maternal depression, suggesting that at-risk mothers may be more vulnerable to developing depressive symptoms (Malik et al., 2007).

Another influence on both parenting practices and child outcomes that may be particularly salient for impoverished families is family structure. Family structure, referring to the status of the primary caregiver in the home (i.e., married, single, cohabitating), has been explored in relation to multiple parenting behaviors with varying results. For example, a comparison of married and divorced mothers found that married parents displayed more monitoring behaviors (Cookston, 1999). In contrast, Simons and et al. (2006) found no difference in monitoring behavior according to family structure in their sample of African American families of diverse incomes. Similarly, findings relating family structure to child outcomes have been inconsistent. Children of single parents had more behavior problems in the presence of monitoring in one study, whereas another study found no difference in child outcomes related to parental monitoring across family structure types (Rodgers & Rose, 2001). Other studies focusing on the effect that resident fathers have on child outcomes have shown that supportive parenting from fathers makes an independent contribution to positive to children's cognitive development (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004).

There is some evidence that single mothers may experience poverty-related stressors differently than those with partners. For example, one study reported that in a sample comprised completely of low-income families, single mothers expressed more feelings of economic strain than those with partners (Williams, Auslander, Houston, Krebill, & Haire-Joshu, 2000).

Parenting practices and behaviors have been shown to mediate the impact of stressors brought about by circumstances related to poverty on child outcomes (e.g., Conger et al., 2002; Jackson & Schienes, 2005). Using the family stress theory as a framework, the present study will examine the mediating influence of parenting on the impact of violence exposure, family structure, and poor psychological functioning on the social-emotional functioning of pre-school children in a low-income sample. Further, this study will examine the effect of parenting styles within specific racial/ethnic groups.

Theoretical and Conceptual Framework

Theory

The current study will consider parenting as it exists in an environment characterized by poverty-related stressors, and its influence on the child. As suggested by ecological frameworks (e.g., Bronfenbrenner, 1986) the distal variables of the external environment are proposed to affect the child through their impact on the proximal variable of parenting.

Following an ecological heuristic, the family stress model considers proximal and distal influences on child outcomes. In other words, the impact of the external environment in which a child lives (i.e. community) is explored as well as the influence of the immediate family (i.e. parents). The family stress theory postulates that environmental and contextual stressors related to poverty result in parental psychological

distress that in turn affects parenting practices and ultimately child outcomes (Conger & Elder, 1994). Thus, the model assumes that the condition of poverty creates contextual stressors, such as financial strain, as well as environmental stressors, such as community violence. Single parenting is also believed to be another stressor disproportionately affecting low-income families. Stressors then lead to parental distress symptoms, such as depression. Extant data support the model's hypotheses and have shown that parental psychological well-being can affect parenting behaviors (e.g., Anthony et al., 2005), and that parenting affects child outcomes (e.g., Assel et al., 2002).

Parenting Processes

The association between poverty and compromised child outcomes is well documented. Using the family stress model as a conceptual base, researchers have found that the stressors related to poverty, such as exposure to violence, and the resultant compromised parenting practices are the mechanisms by which a lack of financial resources negatively affects child development (e.g., Conger et al., 2002; Jackson, 2003b). In the reverse, researchers have found evidence that positive parenting (e.g., warm parenting, positive affect) can be a protective factor for children in low-income families (e.g., Linver, et al., 2002; Whitbeck, et al., 1997). These findings suggest that a lack of financial resources does not automatically condemn a child to undesirable outcomes.

Many studies examining the relationship between parenting and child outcomes focus on particular parental practices (e.g., discipline) or a single parenting dimension (e.g., warmth, control) (e.g., Ginsburg, Grover, & Ialongo, 2004; Graziano, Hamblen, & Plante, 1996). Unlike parenting practices, which are singular behaviors, parenting styles

are global attitudes held by parents. Differing parenting styles can produce overlapping parenting behaviors such that similar parenting practices may appear in multiple parenting styles. For example, two parents may share a common practice but one parent may be more parent-centered in their attitudes (i.e., displaying behaviors motivated by the parent's cognitions rather than the child's cognitions or behaviors). In contrast, the other parent with the same parenting practice may be more child-centered (i.e., displaying behaviors motivated by attributions of the child's cognitions). Similarly, assessing parenting style within a single behavioral domain can be misleading. Research has shown that parents may adopt one behavioral type in one circumstance and another in response to another situation (Smetana & Chaung, 2001; Smetana & Daddis, 2002). Although findings from such studies can be very informative, generalization can be difficult as particular parenting behaviors and dimensions often have different meanings and outcomes according to the broader context (e.g., emotional climate) in which they occur. Further, data suggest that different parenting practices can result in different outcomes when cultural context is taken into consideration (Lau, Litrownik, Newton, Black, & Everson, 2006; Onatsu-Arviolommi, Nurmi, & Aunola, 1998).

Risk Factors and Poverty Related Stressors

Multiple studies have found parenting to be a mediator between family risk factors (e.g., poor quality schools, high-stressed communities, and inadequate home environment) and child outcomes (e.g., Aisenberg, 2001; Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Jackson & Schienes, 2005). Community violence, single parent households, and poor parental psychological functioning (e.g., depression) are

particularly salient risk factors in the lives of low-income children that can have a harmful impact on their developmental outcomes.

Exposure to community violence. In recent decades, exposure to violence in the community has emerged as a common risk experienced by children reared in impoverished circumstances. Research suggests that as much as 70 – 90% of young children experience neighborhood violence (Shahinfar, Fox, & Leavitt, 2000; Silverstein, Augustyn, Cabral, & Zuckerman, 2006). Exposure to violence at a young age can have detrimental effects on children's development (e.g., Grant et al., 2005). For example, witnessing violence has been associated with elevated stress levels in children (Bailey, Hannigan, Delaney-Black, Covington & Sokol, 2005). Further, community disadvantage including violence has been shown to be predictive of later anti-social behaviors (Ingoldsby & Shaw, 2005).

Much of the literature regarding community violence is focused on urban, minority families (e.g., Aisenberg, 2001; Bailey et al., 2006; Ceballo, Ramirez, Hearn, & Maltese, 2003; Dulmus & Wodarski, 2000). However, the limited community violence research using rural samples does suggest that these communities may be affected by violence in similar ways (e.g., Martin, Gordon, & Kupersmidt, 1995; Singer, Anglin, Song, & Lunghofer, 1995). The literature is further limited by a focus on minority families (e.g., Jones et al., 2005; Kliewer et al., 2004; Linares, et al., 2001; Plybon & Kliewer, 2001). As there is evidence suggesting differential outcomes across racial and ethnic groups in other areas of literature related to low-income families (e.g., Dearing, 2004; Lau et al., 2006; Lindahl & Malik, 1999), it is reasonable to consider the possibility of differential impacts related to exposure to violence across racial and ethnic groups.

Further, the majority of the community violence literature focuses on outcomes in school-age and adolescent children (e.g., Fitzpatrick, Piko, Wright, & LaGory, 2005; Grant et al., 2005; Guerra, Huesmann, & Spindler, 2003; Horowitz, McKay, & Marshall, 2005; Lynch & Cicchetti, 2002; McCabe, Lucchini, Hough, Yeh, & Hazen, 2005; O'Donnell, Schwab-Stone, & Muyeed, 2002; Roosa et al., 2005). A growing body of literature suggests that exposure to community violence can negatively affect preschool children as well (Aisenberg, 2001; Farver, Natera, & Frosch, 1999; Fitzgerald, McKelvey, Schiffman, & Montanez, 2006; Linares et al., 2001; Randolph, Koblinsky, Beemer, Roberts, Letiecq, 2000; Shahinfar, et al., 2000).

Family Structure. There are documented demographic differences in mothers from households of varying family structures. For example, single mothers tend to earn less income and are younger than their married counterparts (Cairney, Boyle, Offord, & Racine, 2003; Nobes & Smith, 2002). Further, depression has been shown to be more common in single mothers than those in two-parent families (Cairney et al., 2003; Williams, Auslander, Houston, Krebill, & Haire-Joshu, 2000). Family structure's association with parenting practices is less consistent. For example, some studies have found mothers in two-parent homes to be more engaged with their children (Guttman & Rosenberg, 2003) and to use more supervision (Cookston, 1999), whereas others have found the presence of a second caregiver to have no effect on maternal parenting behaviors (Cain & Combs-Ormbe, 2005). The literature also suggests that children are affected by family structure. Externalizing and internalizing behaviors in children have been linked to single parent family structures (e.g., Cookston, 1999; Shaw, Winslow, & Flanagan, 1999). However, some research has reported a mediating effect of positive

parenting on the influence of family structure on children's behavior (Griffin et al., 2000; Martinez & Forgatch, 2002). However this finding has not been borne out in all studies (Dunifon & Lowaleski-Jones, 2002; Florsheim et al., 1998).

Maternal depression. Elevated rates of depression have been documented among women from low-income communities (e.g., Chaudron et al., 2005; Ross, 2000). The multiple stressors low-income families experience to some extent explain the elevated depression rates found in this group. Specifically, community violence may affect children indirectly through its influence on maternal psychological functioning (e.g., depression). For example, a national sample of mothers of young children reported that mothers who had been exposed to community violence were more depressed than those who had not (Silverstein, et al., 2006). Likewise, family structure variables have been associated with maternal depression with single mothers experiencing the highest frequencies of depressive symptomatology (e.g., Afifi, Cox, & Enns, 2006; Williams et al., 2000). Parenting behaviors have also been shown to be adversely affected by maternal depression (e.g., Dawson et al., 2003; Jackson & Scheines, 2005). Maternal depression has been linked to negative outcomes in children (e.g., Jackson & Scheines, 2005; Onatsu-Arvilommi et al., 1998). For example, one study found that children of depressed mothers were more likely to be depressed themselves (Tan & Rey, 2005). In another study, Onatsu-Arvilommi et al. (1998) reported an association between maternal depression and helplessness and lack of persistence in children during school tasks. Importantly, in the Onatsu-Arvilommi et al. (1998) study, all child outcomes related to maternal depression were mediated by parenting style.

Summary

Exposure to community violence has been shown to be a significant risk factor to low-income families resulting in negative outcomes in children's lives. Further, maternal depression has been linked to mothers' exposure to community violence. Similarly, evidence suggests a relationship between family structure and maternal depression. All of these poverty related stressors have been found to affect parenting in low-income families. The presence of maternal depression in the lives of young children further compromises their development. In the face of multiple stressors, it is important to examine what factors may mitigate the effect of these risks on children's outcomes.

Head Start Families

The focus of the present study is children enrolled in Head Start and their mothers. Although the families enrolled in Head Start are similar to other low-income families, they are unique enough to consider them a separate population whose findings may not generalize to the entire population. For example, whereas approximately 20% of impoverished children are reported to be without health insurance (DeNavas-Walt, Proctor, & Lee, 2006), 91% of children enrolled in Head Start have some type of health insurance (ACF, 2007). Likewise less than 40% of preschool children in poverty participate in non-relative child care suggesting that those in Head Start are a minority among low-income children (Dye & Johnson, 2007). It may be that families that participate in Head Start programs are more motivated to seek out center-based care for their children.

Head Start families have increased access to services and support systems through their Head Start programs. For example, more than two thirds of parents in the FACES 2000 study (U.S. Department of Health and Human Services, 2003) had attended parent

teacher conferences, observed in their children's classrooms for at least 30 minutes, or met with a Head Start staff member in their homes. This level of parent involvement can promote positive outcomes in young children (e.g., McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004; Reynolds, Ou, & Topitzes, 2004). In other words, Head Start participation may mediate the effects of risks common to low-income families.

Despite these potential distinctions among Head Start families, they remain an important source of information regarding poverty-related stressors, parenting processes among low-income families, and the impact of poverty on young children's development. Since its inception, Head Start has been a national laboratory for understanding low-income families and children, and the venue of countless empirical studies. A major research initiative has been the Family and Child Experiences (FACES) study (U.S. Department of Health and Human Services, 2003), which has descriptively documented the functioning of parents and children participating in Head Start across a variety of domains. The FACES study provides a unique opportunity to consider the impact of multiple poverty-related stressors on parenting and child outcomes in a nationally representative Head Start sample.

.Rationale and Overview of the Present Study

There are multiple risks associated with growing up in low-income families. These risks include proximal factors such as maternal psychopathology and family structure as well as more distal factors such as community violence. The data are clear that each of these factors can contribute to negative outcomes for children. However, limited research has addressed whether the cumulative impact of these factors can be mediated by parenting style. Additionally, more studies are needed with more

racial/ethnically and geographically diverse samples. Finally, it is important to determine how these stressors and parenting affect outcomes for preschool children.

Using the family stress model as a conceptual base, the present study aims to examine the mediated effect of parenting style on the relationship between family stressors (i.e., exposure to community violence, single parent households), poor psychological functioning (i.e., depression) and child outcomes (i.e., social-emotional functioning). Further, since research has shown that different parenting styles can result in different outcomes according to familial and environmental context, the model will be tested on different racial/ethnic groups in order to determine if the model holds for these different populations.

Among researchers similar terms can be operationalized in multiple ways, therefore it is important to clearly define key variables pertinent to individual studies. Community violence exposure in the present study refers to either the mother or child's experience of witnessing violence in their home or neighborhood or being the victim of violence in their home or neighborhood (excluding intimate partner violence and child maltreatment). The parent interview designed by the FACES researchers contains items specific to domestic violence and intimate partner violence, thus it is believed that home violence assessed for the present study is not domestic violence. Family structure is defined as the constellation of the adults in the home, specifically whether only the mother resides in the home, the mother and biological father, mother and stepfather, or mother and boyfriend. Psychological functioning in this study pertains to maternal depressive symptoms. Finally, the child outcome of interest to the current study is social-emotional functioning. Social-emotional functioning is determined by teacher reports of

the child's social skills and behavior problems (i.e., withdrawn, hyperactive, and aggressive behaviors).

The proposed model for the present study predicts that stressors common to low-income families will influence child outcomes through the following pathways (Figure 1). Violence exposure, family structure, and maternal depressive symptoms are expected to influence parental warmth and control levels. Parental warmth and control are then expected to affect child outcomes (i.e., social-emotional functioning). Finally, it is hypothesized that both a high level of warmth as well as a high level of control (authoritative parenting) will best mediate the relationship between community violence, family structure, and maternal depression and child outcomes in the combined sample. Further, the model is hypothesized to be consistent when applied to sub-groups based on race and ethnicity (i.e., African American, Latino, White).

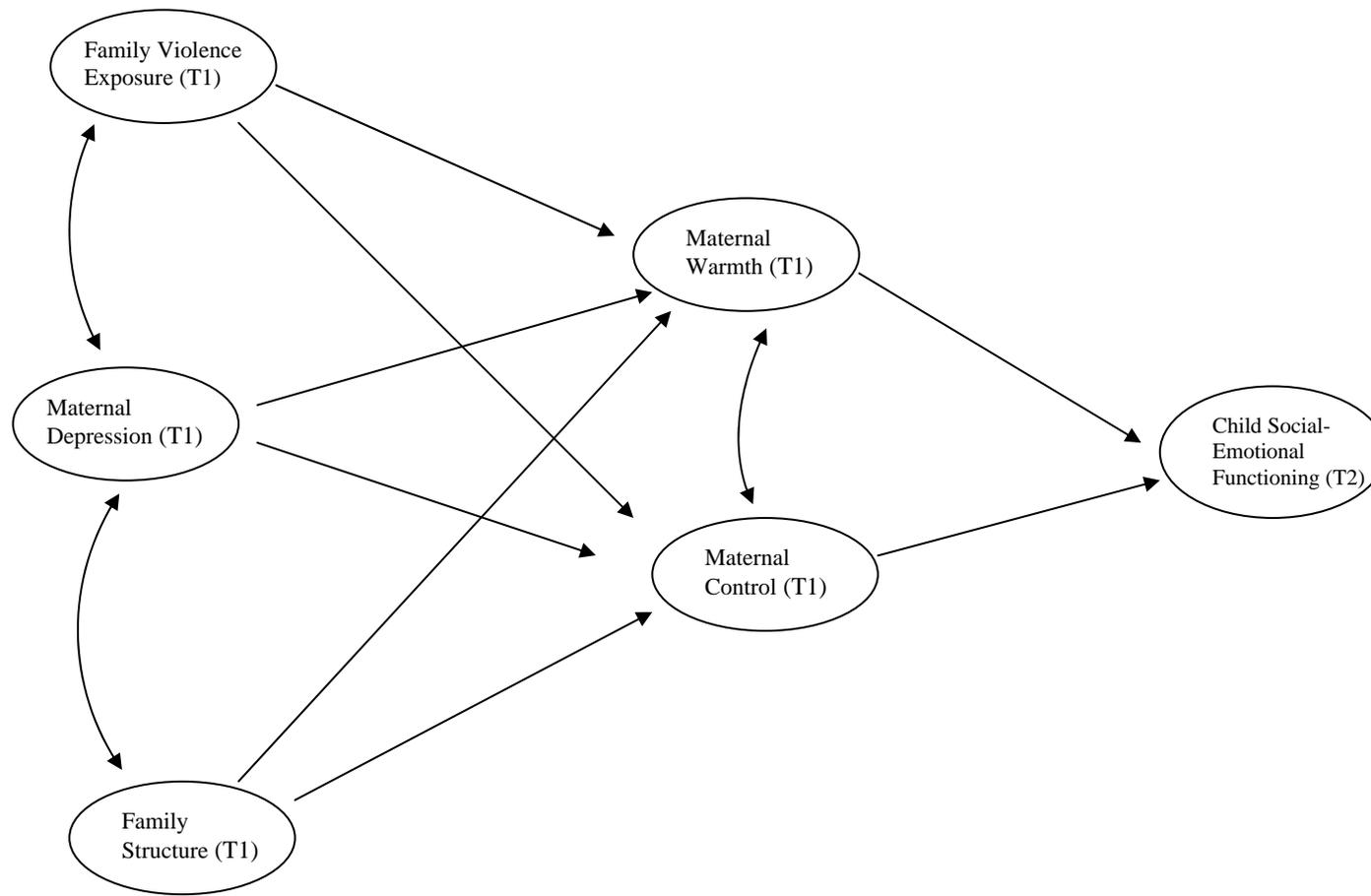


Figure 1: Proposed Model

Control variables: Maternal Age, Maternal Education, Maternal Employment, Maternal Race, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

Chapter 2

Review of the Literature

Parenting behaviors and characteristics are the most proximal influences on a child's development. Children's outcomes are largely shaped, directly or indirectly, by the actions of parents. This is especially true for younger children who are more dependent on their caregivers. Medical care, school choice, and peer interactions are just some of the key areas of a child's life determined by parenting behavior whether through action or inaction. For children growing up in poverty, it can be argued that parental influence is especially critical. Children from low-income families are at greater risk of developing behavior problems and conduct disorders, and of facing academic challenges than their middle class peers (e.g., Dearing, Taylor, & McCartney, 2006; Huston et al., 2005; McLoyd, 1998; Kaplan & Walpole, 2005; Franzini, Caughy, & Spears, 2005). However, positive parenting can buffer children from the risks associated with being from low-income families.

One risk associated with low-income status is exposure to community violence. Family poverty increases the likelihood of living in a dangerous neighborhood (e.g., Jones, Foster, Forehand, & O'Connell, 2005; Pinderhughes, Nix, Foster, Jones, & The Conduct Problems Prevention Research Group, 2001). Children exposed to community violence often exhibit negative outcomes across social, cognitive, and physical domains (e.g., Farver, Natera, & Frosch, 1999; Schwartz & Gorman, 2003; Bailey, Hannigan, Delaney-Black, Covington, & Sokol, 2006). Further, exposure to community violence has been linked to parental depression (Aisenberg, 2001), which is also associated with

negative child outcomes (e.g., Onatsu-Arvilommi, Nurmi, & Aunola, 1998; Tan & Rey, 2005).

Low-income families are often headed by single women, creating another risk to the well-being of the mother as well as to the development of the child (e.g., Dunifon & Kowaleski-Jones, 2002; Florsheim, Tolan, & Gorman-Smith, 1998; Nobes & Smith, 2003). Although there is some evidence that the presence of a second caregiver has no effect on maternal parenting behavior (Cain & Combs-Ormbe, 2005), there is contrasting data to suggest that single parents are more likely to display non-optimal parenting behaviors (e.g., Shaw, Winslow, & Flanagan, 1999; Pett, Wampold, Turner, & Vaughn-Cole, 1999). Findings regarding family structure's (e.g., married, single, cohabitating) effect on children are equally inconsistent. Although children in single parent families have been largely found to be at-risk for negative outcomes (e.g., Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Guttman & Rosenberg, 2003), some studies have found the relationship between family structure to be nonsignificant or mediated by other factors such as parenting characteristics (e.g., Carlson & Corcoran, 2001) or race/ethnicity (e.g., Dunifon & Kowaleski-Jones, 2002).

Poor parenting practices are often a result of the stressors of living in poverty (e.g., Grant et al., 2005; McLoyd, 1990). Compromised parenting can also be predicted by maternal depression which is more common among low-income women (e.g., Reis, Barbera-Stein & Bennett, 1986; Silverstein, Augustyn, Cabral, & Zuckerman, 2006). This is not to say that all low-income parents exhibit negative parenting behaviors. When present, positive, warm, and responsive parenting has been shown to be a protective

factor for children at-risk (e.g., Connell & Prinz, 2002; Linver, Brooks-Gunn, & Kohen, 2002; Spieker, Nelson, Petras, Jolley, & Barnard, 2003).

Parenting researchers have documented racial/ethnic differences in parenting practices, as well as the child outcomes resulting from those parenting practices. Considerable research has examined parenting processes among minority, low-income families from urban environments. Evidence from the relatively smaller literature utilizing non-minority, low-income families demonstrates the necessity of considering such factors as racial group when exploring parenting processes. Such an approach allows researchers to ascertain whether these processes affect low income children from different backgrounds similarly.

The present literature review examines research regarding the relation of community violence, family structure, and depression to outcomes of young children. In particular, it reviews the evidence suggesting that particular parenting styles may mediate the effect of those poverty related stressors on young children's development. First, theoretical and conceptual foundations guiding parenting research will be considered. Next, literature regarding the determinants of parenting will be reviewed, specifically in the realm of environmental and contextual risk. Following this will be a review of literature regarding parenting styles and processes. Child outcomes for children in low-income families will be considered next. To address the main question of the present study, literature regarding parenting's mediating influence on child outcomes will be explored. Finally, research gaps and limitations will be discussed.

Theoretical and Conceptual Foundations

Low-income families experience stress from multiple sources. For example, they often receive inadequate health care (e.g., Bradley & Corwyn, 2002; McLoyd, 1998), have diminished availability of quality child care (e.g., Scott, London, & Hurst, 2005; Magnuson & Waldfogel, 2005), and are more likely to live in dangerous neighborhoods (e.g., Pinderhughes et al., 2001; Grant et al., 2005). Researchers exploring the effects of environmental factors on child development consider multiple aspects of the child's environment. Parenting researchers theorize that parenting processes can buffer children from the potentially damaging effects of these stressors. The research on parenting and the mediating effect of parenting styles has its foundations in many theories and conceptualizations. It is important to have an understanding of these theories when considering the conclusions drawn by researchers.

Family Stress Theory

Research has suggested that a primary mechanism through which poverty affects the lives of young children is through the stress felt by parents due to economic pressures (Conger et al., 2002; Evans & English, 2002; Ewart & Suchday, 2002; Grant et al., 2005; Gyamfi, Brooks-Gunn, & Jackson, 2001; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; Kotchick, Dorsey, & Heller, 2005; Murry et al., 2002; Linver et al., 2002; Whitbeck, et al., 1997). Specifically, the family stress theory postulates that environmental and contextual stressors related to poverty result in parental psychological distress which in turn affects parenting practices (Conger & Elder, 1994). Further, similar to the theory of cumulative risk (Sameroff et al., 1987, 1993, 2002), multiple stressors have been found to have a cumulative detrimental effect on both children and their parents (Evans & English, 2002).

Environmental and contextual stressors may include disadvantaged neighborhoods or exposure to violence. They can also refer to certain demographic variables that are characteristic of low-income families, such as mothers who have children at an earlier age than their middle class counterparts or who have low levels of educational attainment. These circumstances create challenges that can overwhelm parents and cause them distress. The difficult task of parenting is exacerbated when parents are suffering from mental health difficulties such as depression or elevated stress levels, which may lead to compromised parenting behaviors (e.g., Myers & Taylor, 1998). Negative child outcomes often result from these inappropriate parenting practices (e.g., Prevatt, 2003). For example, perceived financial strain can lead to depressive symptoms which can cause parents to be less involved with and supportive of their children, resulting in child problem behaviors (Jackson et al., 2000). These pathways are those proposed by the family stress theory.

Baumrind's Typology of Parenting Styles

A primary model used to ground research on parenting has been Baumrind's (1971) typology of parenting styles, or overall approaches to parenting. Baumrind's typology of parenting styles provides information as to the nature of interactions between single dimensions (i.e., warmth, control) of parenting behaviors and practices. According to the original typology, parenting styles fall into three categories: authoritative, authoritarian, and permissive. Authoritative parenting is marked by high levels of parental control, reasoning, and warmth, and fosters independence in the child. Authoritarian parenting is restrictive, punitive, and lacking in warmth. It is the presence of warmth that appears to qualify the control. In other words, high levels of control

without warmth can be interpreted by the child as harsh, whereas, in the presence of high warmth, high levels of control appear to be interpreted as appropriate. Parenting practices that demonstrate high levels of warmth but low levels of control and involvement are described as permissive. Authoritarian and permissive parenting styles have been associated with negative child outcomes such as anxiety (Wolfradt, Hempel, & Miles, 2003) and conduct problems (Thompson, Hollis, & Richards, 2003). Positive outcomes such as secure attachment (Karavasilis, Doyle, & Markiewicz, 2003) and high self-esteem (Mandara & Murray, 2002) are most commonly linked with a more authoritative style parenting.

A particular parenting practice should not be confused with a parenting style. Parenting practices are distinct, domain-specific behaviors whereas parenting styles are global attitudes reflecting parental beliefs (Darling & Steinberg, 1993). For example, an authoritarian parent and authoritative parent might both report reading to their child (a parenting practice), but the authoritarian might be harsh or critical with the child when the child has trouble reading, demonstrating a lack of warmth. In contrast, the authoritative parent performing the same practice (reading with the child) would be expected to be supportive and nurturing in response to the child's mistakes, demonstrating a higher level of warmth than the authoritarian parent. Similarly, a parent may score higher on a scale measuring psychological control (e.g., inducing guilt, withdrawing affection) than on a scale focusing on the behavioral domain (e.g., parental rules, parental awareness of child's activities) (Smetana & Daddis, 2002). Such findings are domain-specific and are not, by themselves, informative as to whether the parent has a warm, restrictive, or permissive global parenting style. According to Darling and

Steinberg (1993), the parenting style construct provides a method of characterizing parent-child interactions across multiple situations.

Summary of Theoretical Conceptions

The theories discussed consider the influence of proximal and distal variables on parenting processes. Family stress theory considers parenting processes in the context of stressors related to poverty. Baumrind's typology considers parenting in the context of multiple behaviors in order to construct an overall parenting style. A unifying theme of the theories mentioned here is the assertion that an action, any action, can not be fully understood without an attempt to place that action into a context whether that context be environment or the context of other actions and emotions. It is this interaction of parenting and context that provides the opportunity for parents to serve as mediating influences between their children and the risks that they face.

Determinants of Parenting

There are multiple determinants to parenting behaviors (Belsky, 1984). For example, temperament (e.g., Grusec & Goodnow, 1984), childhood histories (e.g., Assel et al., 2002), and parenting beliefs (e.g., Crouch & Behl, 2001) can all affect parenting practices. Another influential factor on parenting behavior is the environment in which the parenting occurs. Specific to this literature review is the effect of various stressors on parenting, particularly as these stressors are manifested in families living in poverty.

The Effect of Community Characteristics on Parenting Processes

Low-income families often live in dangerous and disorganized neighborhoods, which can influence parenting practices. For example, parents in low-income neighborhoods have been shown to have more restrictive parenting practices (Dearing,

2004; Gutman, Friedel, & Nelson, & Hitt, 2003). Further, there is evidence that parents in high poverty neighborhoods display less warmth (Pinderhughes et al., 2001). Higher rates of depression are also observed among individuals from poorer communities (Ross, 2000). This is notable as depression has been shown to result in compromised parenting practices (e.g., Myers & Taylor, 1998).

Exposure to Community Violence. An unfortunate commonality among low-income, urban neighborhoods is high rates of violence [defined as “experiencing, seeing, or hearing about violence in one's home, school, or neighborhood” (Kliewer et al., 2004, p. 477)]. The violence exposure of interest to this review does not include child maltreatment or intimate partner violence as these are beyond the scope of this literature review.

It should be noted that Richters and Martinez (1993) reported that more than 80% of the predominantly African American first and second graders in their study had witnessed a violent act. This finding was echoed in a later study of Latina Head Start mothers who reported more than 80% of their preschool children had witnessed violent acts in their community (Aisenberg, 2001). Researchers utilizing a racially diverse sample of urban Head Start families also found that those mothers reported high rates of violence (Farver, et al., 1999). Clearly violence is an issue in the lives of low-income families without regard to race or ethnicity.

Exposure to community violence has been linked to poor psychological functioning (e.g., Bailey et al., 2006; Self-Brown et al., 2006) which can result in compromised parenting practices. Specifically, Bailey et al. (2006) reported a relationship between exposure to violence and elevated stress levels. Similarly, Self-

Brown and her colleagues (2006) found a correlation between violence exposure and post-traumatic stress disorder in the parents in their sample. Compromised parenting often results from such parental psychopathology. For example, Kotchick et al. (2005) found that neighborhood stress, which included exposure to violent incidents, led to greater maternal distress that resulted in negative parenting practices, such as poor monitoring and a lack of consistency. This pathway is consistent with the family stress theory. Similarly, Plybon and Kliwer (2001) found that high-risk neighborhoods with higher rates of community violence indirectly influenced children's behavior problems by way of stress felt by parents. Notably, in one study, the effect of community violence on child outcomes was shown to be completely mediated by maternal distress (Linares et al., 2001). In other words, once the maternal distress variable was added to the model, there was no longer a direct relationship between exposure to violence and the child outcome of aggression. Similar findings were reported in a study of Latino Head Start families (Aisenberg, 2001) with poor maternal psychological functioning mediating the relationship between children's exposure to violence and children's behavior.

Research regarding community violence and parenting processes has not always yielded consistent findings across racial and ethnic groups. For example, whereas Kotchick et al. (2005) reported that poor psychological functioning resulting from violence exposure in their African American sample led to poor monitoring, Horowitz, McKay, and Marshall (2005) found that parents in their small but racially diverse sample reported being very protective of their children out of concern over community violence. More to the point, a study conducted by Pinderhughes et al. (2001) found that racial group differences existed such that African American parents were less warm than White

parents in free play and structured task observations. However, when neighborhood characteristics such as neighborhood safety were taken into account, all racial group differences in parenting behaviors disappeared in that sample.

Community Type. Research concerning low-income families is often focused on urban families. Despite this under-representation, there is evidence of poor parental (e.g., Raver, 2003; Steele, Nesbitt-Daly, Daniel, & Forehand, 2005) and psychological (e.g., Conger et al., 2002; Whitbeck et al., 1997) outcomes related to poverty in those studies that do use non-urban samples. For example, the pathway to negative child outcomes hypothesized by the family stress model has been tested and confirmed on rural populations (Conger & Elder, 1994; Conger et al., 2002; Whitbeck et al., 1997). This suggests that poverty can affect children through impaired parental psychological functioning resulting in poor parenting practices in rural families.

Less is known about the prevalence of community violence in rural communities. However, the literature that does exist suggests that it is an issue for those families as well (e.g., Martin, Gordon, & Kupersmidt, 1995; Singer, Anglin, Song, & Lunghofer, 1995). In the study conducted by Martin et al. (1995), 63% of the mothers and 96% of school age children reported exposure to violence. Similarly, another study of rural teenagers reported that one quarter had been exposed to violence, specifically, gun violence (Slovak & Singer, 2001). To aid in the generalizability of the present study's findings, the current sample consists of both urban and rural families.

Extant data suggest that both urban and rural parents under economic pressure experience psychological distress (e.g., Conger et al., 2002). For example, there is evidence of a relationship between economic stress and maternal psychological

functioning (e.g., depression) in both urban and rural samples (Brody, Murry, Kim, & Brown, 2002; Coyl, Roggman, & Newland, 2002; Murry et al, 2002; Ross, 2000).

Likewise, parent report of economic pressure (which had a direct inverse relationship with income) was associated with depression in a study of White rural families of diverse socioeconomic status (Whitbeck et al., 1997).

The Effect of Psychological Functioning on Parenting Processes

Arguably, poverty's greatest influence on parenting practices is through the stress felt by parents. This is critical to the present study as stress and depression are highly correlated (e.g., Coyl, et al., 2002; Gyamfi et al., 2001; Onatsu-Arvilommi et al., 1998). In fact, an association between stress and depressive symptoms is a component of the family stress model hypothesis (e.g., Conger & Elder, 1994).

Depression. Various studies point to correlations between elevated stress levels and depression (e.g., Bremner & Vermetten, 2001; Grant et al., 2005; Myers & Taylor, 1998; Magnus, Cowen, Wyman, Fagen, & Work, 1999; Pinderhughes et al., 2001; van Praag, 2004). Specifically, studies employing variations of the family stress model find that stress related to poverty often results in increased depressive symptomatology (Conger et al., 2002; Jackson et al., 2000; Kotchick et al., 2005). It is important to consider depression because of its detrimental effect on parenting practices (e.g., Bluestone & Tamis-LeMonda, 1999, Onatsu-Arvilommi et al., 1998).

For example, a study of low-income African American families with adolescents found that depressed mothers were more restrictive than non-depressed mothers (Gutman et al., 2003). Similarly, depressed parents of young children have been shown to be over-reactive in their parenting (Bor & Sanders, 2004). Further, research has linked

depression in parents of young children with less child-centered behaviors (i.e., behaviors motivated by attributions of the child's cognitions) (Bluestone & Tamis-LeMonda, 1999). It is interesting to note that the depressed mothers in the previous study did not, however, exhibit more punishment or scolding than non-depressed mothers despite their parent centered bias (i.e., displaying behaviors motivated by the parent's cognitions rather than the child's cognitions or behaviors).

Depression can also affect dimensions of parenting style when those dimensions are directly assessed. For example, depressed mothers of young children are less likely to display warmth (Jackson & Scheines, 2005). Likewise, they are less likely to exhibit the involved and supportive behaviors that are indicative of warm parenting (Jackson et al., 2000). Further, specifically related to Baumrind's parenting styles, depressed parents have been found to be less authoritative (Onatsu-Arvilommi et al., 1998). Although there is evidence of a relationship between parental depression and parenting styles, further research, such as the work being conducted here, is required before more conclusive judgments can be made.

The Effect of Demographic Characteristics on Parenting Processes

Family Structure. Researchers have explored differential effects that may result from raising a child in single or two parent households (e.g., Florsheim et al, 1998; Griffin et al., 2000). This is a question of particular importance to low-income families because single households, particularly female-headed households, are increasingly common in this population (Afifi, Cox, & Enns, 2006; Cairney, Boyle, Offord, & Racine, 2003; Nobes & Smith, 2002). In addition, African American families are more likely to be headed by single parents (Afifi et al., 2006; Dunifon & Kowaleski-Jones, 2002).

There is evidence that single mothers have poor psychological outcomes (Nobes & Smith, 2002, Cairney et al., 2003). For example, Cairney et al. (2003) found that single mothers in their sample had higher levels of depression and stress than did the married mothers. Notably, they found that stress and social support partially mediated the relationship between family structure and depression. However, they ultimately concluded that the accumulation of life events had a stronger impact on single mothers than on married mothers. It would be reasonable to suggest, then, that the co-occurrence of stressors such as exposure to violence and poverty may lead to poor psychological outcomes in single mothers.

In contrast, other researchers have not found an association between maternal psychological functioning and family structure. A study of African American mothers found single mothers to be no more likely to exhibit elevated stress levels than those mothers with co-caregivers (Cain & Combs-Ormbe, 2005). Likewise, a study utilizing a nationally representative sample, thus racially diverse, also found no difference in depression levels for married and never married mothers (Afifi et al., 2006). Afifi et al. did find a difference in depression levels between separated/divorced mothers and never married mothers with separated/divorced mothers exhibiting higher depression levels. This is notable as over two-thirds of the married and separated/divorced families were White and 50% of the never-married mothers were African American. Taken together these findings raise the question of the influence of race/ethnicity in regard to family structure's relationship with maternal psychological functioning. Comparison studies utilizing racially diverse samples could provide crucial data to address this issue.

Maternal Characteristics. Demographic characteristics such as caregiver age have been shown to influence parenting behavior (e.g., Benasich & Brooks-Gunn, 1996; Koenig, Ialongo, Wagner, Poduska, & Kellam, 2002). For example, Berlin et al. (Berlin, Brady-Smith, Brooks-Gunn, 2002) found in their sample of Early Head Start families that mothers who had given birth as adolescents were less supportive, more detached, and more intrusive than older mothers. This effect held across racial groups. Similar to maternal age, maternal educational attainment has been shown to have a linear relationship to parenting characteristics (e.g., Gyamfi et al., 2001). For example, Jackson (2000) reported that, among her sample of low-income, single African American mothers, those who were more educated felt less parenting related stress and provided a more stimulating and supportive home environment for their children than those who had less education. Further, research exploring how employment status and income affect depression has found that employment and increases in income reduce depression (Conger et al., 2002; Dearing et al., 2004; Gyamfi et al., 2001; Jackson, 2003b; Jackson & Scheines, 2005; Murry et al., 2002). This was especially true for the chronically poor in the study conducted by Dearing et al. (2004). Because depression is linked to a multitude of negative child outcomes (e.g., Jackson & Scheines, 2005; Onatsu-Arvilommi et al., 1998; Tan & Rey, 2005), it is important to consider potential causes and correlates to depression in research concerning parenting processes in low-income families. Researchers may choose to include determinants of depression in their analytic models as key variables or control variables. Regardless, the influence of relevant demographic characteristics must be taken into account.

Racial/Ethnic Group Comparisons. There is evidence that parents across racial groups have similar parenting practices in high stress environments (Greenwald, Bank, Reid, & Knutson, 1997; Kotchick et al., 2005; Magnuson & Waldfogel, 2005; Rodriguez, Davis, Rodriguez, & Bates, 2006). For example, a study comparing highly stressed African American and White families found similar parenting practices and beliefs across racial groups (Magnus et al., 1999). Similarly, findings are consistent across racial groups regarding outcomes related to depression. For example, the link between depressive symptomatology and poor parenting as described in the family stress model was first reported on a sample of White families (Conger & Elder, 1994). However, a replication study using an African American study yielded similar results (Conger et al., 2002).

Summary of Parenting Determinants in Low-Income Families

Poverty and the stressors that accompany it can have detrimental effects on parenting behaviors in low-income families. Insufficient income leaves families without the resources (e.g., medical, educational, recreational) that assist families in raising children. Further, these families are exposed to higher rates of community violence and are more likely to be headed by single parents. Concern over these circumstances can lead to psychological distress, specifically depression. Ultimately, parents who are depressed may be more likely to engage in behaviors that can be harmful to their children's development.

Minority families are over-represented in the literature regarding the lives of low-income families. However, evidence suggests that White families are also vulnerable to the stressors related to poverty (e.g., community violence, non-marriage, depression).

More research needs to be conducted utilizing these populations to ascertain the similarities as well as the differences in the determinants of parenting in low-income families across racial/ethnic groups.

Parenting Styles and Processes

When investigating family functioning and related child outcomes, the identification of parenting styles can be very informative. Recognizing the parenting style prevalent in a family can clarify other variables of interest by situating them into a broader emotional climate. For example, the effects of the use of physical discipline on child functioning have been shown to differ across racial groups (e.g., Deater-Deckard, Dodge, Bates, & Pettit, 1996; DeKlyen, Biernbaum, Speltz, & Greenberg, 1998; Larzelere, 2000; Prevatt, 2003). Research investigating this difference has found that it is the overall emotional climate in which the discipline is delivered that most often accounts for the differences (Deater-Deckard, Dodge, & Sorbring, 2005). In other words, a particular child outcome may not be the result of a single parenting practice, but rather the entire context (e.g., emotional climate, other parenting practices) in which that single practice occurs. Baumrind's typology of parenting styles focuses on emotional dimensions of parenting (i.e., warmth, control) that help guide and provide context for parenting behavior. More specifically, the typology is concerned with the interaction of warmth and control and the moderating effect one has on the other.

Global Parenting Styles and Single Parenting Practices

Often research examining parenting in relation to child outcomes is focused on single dimensions of a parenting style (Brody & Flor, 1998; Conger et al., 2002; Ginsburg, Grover, & Ialongo, 2004; Graziano, Hamblen, & Plante, 1996; Kotchick et al.,

2005; Lau, Litrownik, Newton, Black, & Everson, 2006; Spieker, Larson, Lewis, Keller, & Gilchrist, 1999; Ruffman, Slade, Devitt, & Crowe, 2006; Whitbeck et al., 1997). For example, in a study of disciplinary practices, Sim and Ong (2005) measured authoritative control during disciplinary episodes but did not address the question of the parenting practices or attitudes in other domains in order to determine the broader emotional climate. Similarly, assessing parental warmth as a means to identify parenting quality is problematic when making linkages from parenting to child outcomes as data suggest that warmth and other constructs such as irritation can co-exist (Coolahan, McWayne, Fantuzzo, & Grim, 2002; Jose, Huntsinger, Huntsinger, & Liaw, 2000; Nicholson, Fox, & Johnson, 2005; Rudy & Grusec, 2006; Smetana & Chuang, 2001). In fact, in a sample of single African American mothers, McGroder (2000) found Aggravated but Nurturant to be the most common parenting style.

Smetana et al. (2000, 2001, 2002) have shown that even within the single dimension of control, parents change their behavior according to the behavioral domain in question. For example, parents may be more permissive on issues they believe to be within the personal purview of the child and more restrictive on issues they consider to be conventional. These findings suggest a need to consider multiple dimensions (i.e., warmth and control as suggested by Baumrind's typology) in order to determine a global parenting style. In contrast to the single dimension approach, other studies have utilized existing typologies (Karavasilis et al., 2003; Linver et al., 2002; Onatsu-Arvilommi et al., 1998; Rodriguez et al., 2006; Trice, 2002; Wolfradt et al., 2003) or have used cluster analyses to create their own (Coolahan et al., 2002; Mandara & Murray, 2002; McGroder, 2000; Middlemiss, 2003). It is notable that studies that develop unique

typologies often find that their parenting styles are similar to Baumrind's. For example, Coolahan et al. (2002) found three emergent styles: Active-Responsive, Active-Restrictive, and Passive-Permissive. They report that active-responsive and active-restrictive correspond to authoritative and authoritarian parenting.

Parenting styles across subgroups

It has been argued that parenting style typologies are only useful within the population on which they were established (Stewart & Bond, 2002). In her review of the use of Baumrind's typology in non-Western cultures, Sorkhabi (2005) argues that the behaviors that determine a particular style can differ from culture to culture even as the dimensions of the styles stay the same. For example, parents in two different cultures may have similar child-centered authoritative goals of fostering independence in their children and building self-esteem. However, in one culture warmth might be a variable that clusters around that goal and in another, strictness may be the variable of interest. Further, a study comparing collectivist and individualistic cultures found authoritarian parenting to be associated with maternal negative thoughts about children in individualistic cultures, but not in the collectivist societies (Rudy & Grusec, 2006).

Research performed within the United States has also questioned the generalizability of findings across sub-cultures within the larger American culture. Specifically, it has been questioned whether or not findings related to a particular parenting style for one racial group are generalizable to another racial group. Although African American and White mothers in one study used identical styles in disciplinary situations (a style not correlated with any from Baumrind's typology), their styles diverged during instructional tasks (Middlemiss, 2003). African American mothers

became more authoritarian in instructional tasks and White mothers used more authoritative practices. This study demonstrates the importance of considering context when exploring parenting processes; in this case it was situational context that was important. Had the researchers not broadened their scope to include multiple behavioral domains they would not have been able to report the complexity of parenting style differences in the racial groups in their sample. For example, had they limited their focus to discipline, they would have concluded that there was no difference in parenting styles across racial groups.

Studies reporting on child outcomes related to parenting behaviors across racial groups have also yielded complex findings. For example, researchers found that the same dimension of parenting style (warmth) that predicted an increase in behavior problems for African American children predicted a decrease in White children with similar baseline behavior problems (Lau et al., 2006). Another study using a diverse sample (African American, Asian-American, Hispanic, and White) found that while authoritative parenting was related to academic competence in the overall sample of adolescents, parenting style was not related to academic performance in African American adolescents at all (Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). However, a study of Asian and Latino adolescents found associations between parenting style and academic performance consistent with the literature regarding non-minority samples. Authoritative parenting was associated with higher academic performance and neglectful parenting was associated with the worst academic performance (Pong, Hao, & Gardner, 2005). Evidence suggests that generalizability pertaining to findings related to

parenting may be limited across racial groups and, thus, when possible researchers should strive for diverse samples.

Summary of parenting styles

Parenting styles are multi-dimensional constructs that provide information as to the nature of interactions between single dimensions (e.g., warmth, control) of parenting behaviors and practices. When assessed properly, a global parenting style can offer context to singular behaviors. However, caution must be taken when applying parenting style characteristics across racial/ethnic groups. Further, parenting styles themselves must be viewed within a broader context in order to be fully understood.

Child Outcomes in Low-Income Families

Low-income children are at higher risk for exhibiting many negative child outcomes when compared to their middle-class counterparts. For example, low-income children lag behind their middle-class peers in the academic domain (e.g., McLeod & Owens, 2004; Jackson et al., 2000; McLoyd, 1998). Further, low-income children are also reported to have more behavior problems and social adjustment difficulties (e.g., Beck, Dearing, McCartney, 2004; Bradley & Corwyn, 2002; Conger et al., 2002; Evans & English, 2002; Grant et al., 2005). However, positive parenting has been shown to mediate the relationship between risk factors associated with low-income status and poor child outcomes (e.g., Onatsu-Arviolommi et al., 1998). For example, one study reported that maternal responsiveness reduced the impact of maternal depression in a sample of mothers with infant children (Milgrom, Westley, & Gemmill, 2004). Identifying the particular elements of a low-income lifestyle (e.g., exposure to violence, single

parenthood) that contribute to negative outcomes as well as parenting styles that may act as buffers make it possible to target those factors for intervention and prevention.

The Effect of Neighborhood Characteristics on Child Outcomes

Just as neighborhood characteristics can affect parents, they also influence child outcomes. Low-income neighborhoods that are perceived by parents and children as cohesive are not associated with negative child outcomes (Silk, Sessa, Morris, Steinberg, & Avenevoli, 2004). However, those that are seen as disorderly or disadvantaged have been found to result in poor child outcomes (Jackson, 2003a; Plybon & Kliever, 2001). Further, data suggest that these findings hold longitudinally with neighborhood types lived in at a young age predicting later child outcomes (Jackson, 2003a). An especially potent family risk factor for children is community violence.

Exposure to community violence. Research has shown that low-income children are exposed to community violence more than their higher income peers (e.g., Richters & Martinez, 1993; Bailey et al., 2006). For example, a small sample of Latina Head Start mothers reported more than 80% of their children had witnessed a violent crime (Aisenberg, 2001). Likewise, a racially diverse sample of Head Start mothers reported high rates of violence exposure (Farver, et al., 1999). However, the studies mentioned above all had samples concentrated in select neighborhoods. Although it is probable that a national sample such as one utilized in the present study may find a significant amount of community violence exposure in low-income communities, it is possible that the percentages may not be as high when the participants are from more varied neighborhoods.

Children who have been exposed to community violence are more likely to exhibit internalizing behavior problems (e.g., Ewart & Suchday, 2002; Ingoldsby & Shaw, 2002; Jones et al., 2005). For example, in a racially diverse sample of 4th and 5th graders, Ceballo et al. (2003) found exposure to community violence to be associated with higher rates of depression. Similar findings of child internalizing problems have been reported in other studies focusing on school-age children and adolescents (Cooley-Quille, Boyd, Frantz, & Walsh, 2001; Dulmus & Wodarski, 2000; Fitzpatrick, Piko, Wright, & LaGory, 2005; Grant et al., 2005; Martin et al., 1995).

Younger children are also vulnerable to internalizing problems as a result of community violence exposure. For example, Shahinfar et al. found a correlational relationship between exposure to violence and child distress symptoms in their preschool sample (Shahinfar, Fox, & Leavitt, 2000). Other studies have found indirect (e.g., mediated by maternal distress symptoms) relationships between violence exposure and internalizing problems (Aisenberg, 2001; Linares et al., 2001). However, one study found no difference in internalizing behaviors between Head Start children in violent neighborhoods and a sample of children not concentrated in high violence communities (Randolph, Koblinsky, Beemer, Roberts, & Letiecq, 2000).

There is similar evidence of an association between preschool children's exposure to violence and externalizing behaviors (e.g., Fitzgerald, McKelvey, Schiffman, & Montanez, 2006; Shahinfar et al., 2000). For example, in the study that found no difference in internalizing scores between children in high violence neighborhoods and low violence, the children residing in violent communities exhibited more externalizing behaviors (Randolph et al., 2000). As with findings related to internalizing behaviors,

studies have found that the relation between exposure to violence and externalizing behaviors is indirect (i.e., mediated by maternal distress symptoms) in preschoolers (Aisenberg, 2001; Linares et al., 2001).

The majority of studies investigating the relationship between community violence and child outcomes are focused on school-age and adolescent children. However, it is important to investigate the effects of community violence exposure in younger children as early exposure can have lasting effects. For example, a longitudinal study following children from first grade to sixth grade found that early violence exposure predicted later aggression (Guerra, Huesmann, & Spindler, 2003). Likewise, in their review of youth exposure to community violence, Buka et al. (2001) point to the connection of violence exposure to post-traumatic stress disorder (PTSD). They highlight the research that suggests PTSD can have lasting biological effects during critical phases of development as reason to consider the unique risks to young children exposed to community violence.

Differential impacts of exposure to violence on children according to gender has also been investigated by researchers, yielding inconsistent findings. Some studies report no significant gender differences for outcomes related to community violence (Aisenberg, 2001; Jones et al., 2005; McCabe, Lucchini, Hough, Yeh, & Hazen, 2005). However, other researchers have reported contrasting findings. For example, Randolph et al. (2000) reported that preschool boys exposed to violence displayed more internalizing behaviors than the girls in their sample. Further, studies that found no significant differences did report trends suggesting a stronger relationship between community violence exposure and externalizing behaviors in boys (Aisenberg, 2001;

Guerra, et al., 2003). In addition, other studies have found that the girls in their samples were more depressed (Ewart & Suchday, 2002; Fitzpatrick et al., 2005). These findings highlight a need to include gender as either a control or key variable when exploring child outcomes related to violence exposure.

Family Structure. Although recent literature is limited, with notable exceptions, the evidence suggests an association between single parenthood and child behavioral difficulties (e.g., Guttman & Rosenberg, 2003; Lichter, Shanahan, & Gardner, 2002). For example, a study of teenage children found that those with single parents exhibited more delinquent behaviors than those from two parent homes (Shaw et al., 1999). Moreover, a study utilizing a sample similar to the present study (i.e., low-income families with pre-school children) also found a relationship between single parenthood and high levels of child behavior problems (Pett et al., 1999). In the case of the previous study, the mothers were divorced as opposed to being never married. However, the relationship between family structure and child behavior is not always evident. In a sample of families from diverse income statuses, family structure only impacted child behavior when it interacted with income and chronic poverty status (Dearing et al., 2006), resulting in elevated externalizing and internalizing problems. Similarly, Carlson and Corcoran (2001) found that the association between single parenting and behavior problems in their sample of school-age children became non-significant when controls (e.g., income, mother's education) were added to the model.

It is important to consider certain demographic variables when investigating the relationship between family structure and child behavior. As mentioned above, income and maternal education should be taken into account. This is not surprising since single

mothers are more likely to be poor and to have less education (e.g., Cairney et al., 2003; Nobes & Smith, 2002). Child gender has also been shown to impact family structure's impact on child behavior problems with data demonstrating boys have more behavior difficulties when raised in single parent homes (Griffin et al., 2000; Shaw et al., 1999). In the model proposed for the present study, these demographic characteristics will be controlled.

Yet another influence on the impact of family structure on child behavior is race/ethnicity. Again, this may be due to the demographics associated with family structure. Some data have shown that single mothers are more likely to be minorities (e.g., African American, Hispanic) (Afifi et al., 2006; Dunifon & Kowaleski-Jones, 2002). In regard to differential outcomes, one study found that White adolescents from single parent homes experienced significantly more symptoms of distress, however, no such association was found in African American teenagers (Wickrama et al., 2005). In contrast, a non-comparison study using only African American families did find that child behavior problems did differ according to family structure with children having more optimal outcomes when there were two caregivers (the presence of step-fathers was the exception) (Simons et al., 2006). The present study proposes a multi-group analysis in order to further explore differences across race/ethnicity groups.

The Effects of Maternal Psychological Functioning on Children

Children are most affected by stressful conditions indirectly through the stressful condition's effect on their parents. Children of highly stressed parents have been found to have elevated levels of internalizing and externalizing problems (Anthony et al., 2005; Crnic, Gaze, & Hoffman, 2005; Grant et. al, 2005; Hart & Kelley, 2006; Jackson et al.,

2000; Olson, Ceballo, & Park, 2002). Further, preschool children of highly stressed parents have been found to be less socially competent as judged by their teachers (Anthony et al., 2005). Studies utilizing path analyses find that it is parenting practices such as inconsistent discipline (e.g., Grant et al., 2005), inappropriate expectations (e.g., Anthony et al., 2005), and a lack of warmth and responsiveness (e.g., Assel et al., 2002) that influence the development of negative child outcomes.

Depression. As discussed earlier in this paper, stress is strongly correlated with depression in parents and depression has been shown to negatively affect child outcomes. Depressed mothers are more likely to have depressed children (Halligan, Herbert, Goodyer, & Murray, 2004; Tan & Rey, 2005) and to have children with behavior problems (Jackson, 2003a). A primary pathway from parental depression to negative child outcomes appears to be through compromised parenting behaviors (e.g., Conger et al., 2002; Gutman et al., 2003). The work of Gutman et al. (2003) found that depressed parents used more restrictive parenting, which resulted in more anger for the African American adolescents in their sample. Likewise, depressed low-income mothers in another study were less likely to display involved and supportive parenting practices that were negatively related to school readiness (Jackson et al., 2000).

Parenting as a Mediator between Poverty Related Stressors and Child Outcomes

When parents are able to cope with stressful circumstances and maintain positive parenting practices, those positive parenting practices can act as a buffer between the economically stressed environments in which they live and their children's outcomes (Brody & Flor, 1998; Jackson, 2003b; Jackson et al., 2000; Linver et al., 2002; Murry et al., 2002; Myers & Taylor, 1998; Olson et al., 2002; Onatsu-Arivilommi et al., 1998;

Pettit et al., 1997; Plybon & Kliwer, 2001; Whitbeck et al., 1997). For example, Linver et al. (2002) found that parenting behaviors reduced the relationship between income and child behavior problems. Other studies that have not found similar effects may have been limited by sample size (Burchinal, Follmer, & Bryant, 1996) or instruments that failed to measure the emotional climate of parenting behaviors (Anthony et al., 2005). Further studies exploring parenting's differential mediating impacts on children are needed to fully understand the potential of parenting as a protective buffer as well as its limitations.

Mediating influence of parenting practices. Although some neighborhood characteristics have direct effects on children (Ewart & Suchday, 2002), many are indirect through compromised family functioning (Grant et al, 2005; Jackson, 2003a). For example, mothers in high violence neighborhoods have been found to use inconsistent discipline practices and to have poorer quality relationships with their child (Kotchick et al., 2005). Although poor parenting practices can exacerbate the negative influence of poverty, positive parenting practices have been shown to be a protective factor for children living in high stressed environments (Ceballo et al., 2003; Dearing, 2004; Magnus et al., 1994; Pettit, Bates, & Dodge, 1997). For example, supportive parenting mediated the effects of neighborhood characteristics on child depression such that children of supportive parents were less likely to be depressed (Dearing, 2004).

Research investigating mediating influences between family structure and child outcome has yielded more inconsistent results than the research into the mediation of exposure to community violence. Griffin et al. (2000) reported that positive parenting did reduce the impact of single parent homes on children's behavior problems. This effect was strongest for the boys in their sample. In contrast, other studies have found

that parenting did not demonstrate any mediating effect between family structure and child behavior (e.g., Florsheim et al., 1998). Specifically, Dunifon and Kowaleski-Jones (2002) explored the mediating effect of parental warmth and found no effect. Moreover, there is evidence to suggest that the effects of parenting practices may differ according to family structure (e.g., Rodger & Rose, 2001). For example, one study found parental monitoring to be negatively associated with child behavior problems in single parent homes, but to have no association at all in married households (Amato & Fowler, 2002).

Mediating effect of parenting styles. Evidence suggests a mediating effect of parenting styles as defined by Baumrind's typology on poverty-related stressors and child outcomes. Onatsu-Arviolommi et al. (1998) reported that parenting styles mediated the relationship between maternal depression and child outcomes. In this study of 6-7 year old children, authoritative parenting was associated with adaptive behaviors related to school success (e.g., task persistence, failure expectation). Likewise, observed parenting using a coding scheme based on Baumrind's typology partially mediated the effect of poverty on child behavior problems (Linver et al., 2002). In other words, the association between poverty and child behavior problems was partially explained by the parenting style employed by the parent.

Summary of child outcomes for low-income children

The greatest risk to low-income children is through the influence of poor parenting. It is clear that poor parenting practices exacerbate family risk factors already brought on by poverty. However, it is also clear that children whose parents are able to overcome their circumstances and maintain positive and adaptive parenting behaviors are those children who are least affected by poverty and who have the most optimal

outcomes. It is of interest to the present study to examine the impact of warm parenting behaviors and controlling behaviors on the influence of violence exposure and family structure on child outcomes.

Research Gaps and Limitations

This review demonstrates that there is ample literature regarding parenting in low-income families and the impact of poverty on child outcomes. However, the generalizability of this literature is limited by its focus on certain populations. Although there are notable exceptions (e.g., Conger et al., 2002; McLeod & Owens, 2004; Olson et al., 2002), the majority of the study samples consist of African American families in urban environments (e.g., Gyamfi et al., 2001; Kotchick et al., 2005; Plybon & Kliewer, 2001). Expanding research to include more families from varied racial groups would be very informative to poverty researchers as to the commonalities of experience among low-income families as well as the differences. In addition, including rural families in future studies will improve the generalizability of the research findings. Therefore, what is needed to move the field forward is more studies that replicate findings reported for low-income, African American families in other populations?

Moreover, studies examining the association between stressors related to income and children tend to focus on older children (i.e., school age and adolescent) (Brody & Flor, 1998; Conger et al., 2002; Evans & English, 2002; & Ewart & Suchday, 2002; Grant et al., 2005; Greenwald et al., 1997; Magnus et al., 1999; Murry et al., 2002; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). Studies targeting families with young children are often concerned with the stress related to parenting a young child and not necessarily those related to poverty (Anthony et al., 2005; Assel et al., 2002; Crnic et al.,

2005; Willinger, Diendorfer-Radner, Willnauer, Jorgl, & Hage, 2005). The literature that does focus on relationships between economic stressors and child outcomes in young children are often correlational (Gyamfi et al., 2001; Middlemiss, 2003). Exceptions include the work of Linver et al. (2002) and Jackson and her colleagues (2000, 2003b, 2005), who follow-up on the work of Conger et al. (2000, 2002) using models and pathways similar to the family stress model. It is important to fully examine the effects of economic stressors on young children in a meaningful way as the data suggest that poverty is especially detrimental to young children (Brooks-Gunn & Duncan, 1997).

Methodological Limitations

Measures examining parenting in this research are often limited in their scope. Many instruments focus on a particular parenting practice rather than a global parenting style. The hesitation to measure parenting styles may be due to the difficulty in doing so. Specific behaviors such as spanking can be acquired through frequency counts. Particular parenting dimensions such as stress can be measured with an instrument such as the Parenting Stress Index (Abidin, 1990) that has published psychometrics (e.g., Edsaille & Greenwood, 1995). However, there is no widely agreed upon measure to assess parenting style. Many researchers use the Block (1965) measure (e.g., Nurmi et al, 1998, 2005; Rudy & Grusec, 2006) that places parents into several categories based on multiple dimensions of behavior rather than adhering to a single typology. However, some researchers have derived parenting styles by analyzing the interactions between dimensions as done originally by Baumrind (1971). Other researchers have developed their own typologies (Coolahan et al., 2002; Mandara & Murray, 2002; McGroder, 2000). Still other studies construct original measures based on theory (e.g., Pong et al., 2005;

Steinberg et al., 1994). The research on parenting styles would be furthered through more studies examining the psychometrics of various instruments on diverse populations. Further, studies examining parenting styles should report psychometrics of the particular measures that they choose as they related to their sample in order to help guide and inform other studies using similar measures.

Measures are further limited by their reliance on self-report. Studies such as Linver et al. (2002) that utilize a video observation coding scheme designed to assess global parenting styles should be looked upon as a model for future studies exploring connections between parenting styles and child outcomes. Optimally, mixed-method studies using both self-report and observation could provide a fuller picture of parenting behaviors. Additionally, such studies could provide external validity for existing self-report measures.

As the body of literature on economic stress and its effects on families matures, the field should continue its move away from correlational studies toward longitudinal work. Current data have directed researchers toward key variables in the field and longitudinal data will allow for assertions of causality. An issue of critical importance to researchers who study low-income preschoolers is which early variables are most predictive of better academic outcomes for low-income children. Social-emotional functioning is an important part of school-readiness. Variables that predict certain outcomes at one time period may not hold for later time periods. Longitudinal data can best answer these questions and assist service providers who work with populations that are in jeopardy as they prioritize interventions.

Finally, the field of parenting research is increasingly looking toward path analyses and structural models in order to understand the influence of various factors on children's outcomes. The use of such analyses have uncovered latent variables and associations that were not revealed through such analyses as regressions or ANOVAS, and have moved the field of parenting processes and child outcomes in low-income families forward. However, data analysis of this type calls for greater power than what is needed for less complicated analysis. As a result, future studies should aim to employ larger samples when possible in order to be able to identify associations and pathways that before may have gone undetected.

Conclusion

The aim of family researchers working with low-income families is to gain a better understanding of the complexities inherent in the lives of these families. It is hoped that this greater understanding will guide, not only researchers, but clinicians, practitioners, and others who work directly with low-income families in their efforts to better serve them. Further, as resources designed to aid these families are scarce, empirical data can help program designers and policy makers to develop prevention and intervention services that more efficiently target critical risk factors. Moreover, family process and parenting researchers continue to demonstrate the importance of considering the entire family when working to improve the lives of children. Positive family functioning such as supportive parenting and family cohesion continue to be documented as buffers between the negative influences related to living in low-income environments and child outcomes. As researchers continue to provide evidence on the importance of

supporting the entire family unit, programs serving low-income families such as Head Start can learn more regarding the development of effective comprehensive programs.

Chapter 3

Method

Dataset

The present study utilized data from the Family and Child Experiences Survey (FACES) 2000 cohort (US Department of Health and Human Services, Administration for Children, Youth, and Families, 2003). FACES is a multi-cohort study designed to answer questions regarding child outcomes as they relate to the Head Start program. Data collection began for the first cohort in 1997, followed by a second in 2000. Data are currently being collected for a third cohort. Each FACES cohort of data collection provides longitudinal data (i.e., data collected across several time points from the time the children are age 3-4 years old until the end of the children's kindergarten year) on nationally representative (i.e., statistically weighted to represent the national population of children attending Head Start) samples of children, families, teachers, classrooms, and programs.

The 1998-1999 Program Information Report was used to construct a sampling pool of eligible Head Start programs ($N = 1675$ programs). The programs were then stratified by Census region, percent minority, and urban/rural status. A final sample of 45 programs was chosen for the project (2 were later excluded due to being defunded from Head Start) with caution taken to ensure that the programs selected to participate in FACES 2000 did not overlap with those chosen for FACES 1997. Classes within programs were then sampled. Targeted classes were those expecting children new to Head Start to be enrolling during the first year of the FACES 2000 data collection. Two hundred and eighty-six classes were eligible for the study and all first-year children in the

classes were included in the study sample ($N = 2790$ children). Due to attrition, the final sample for the FACES 2000 longitudinal dataset is 1898.

The FACES study is part of Head Start's Program Performance Measures Initiative and is concerned with tracking the development of children within domains of behavior and achievement that have been shown to be critical to school readiness. To this purpose, data collection has four components: child assessments, parent interviews, teacher and staff interviews, and classroom observations. Children are assessed through direct assessment and parent and teacher report regarding child functioning. Parent interviews completed by the child's primary caregiver provide information regarding parenting behaviors, family characteristics, and parental health and well-being. Head Start staff, teachers, program administrators, and kindergarten teachers are asked questions concerning staff experience, education, and training as well as child development beliefs and knowledge. Further, they provide information regarding educational activities carried out with parents and children. Finally, classroom observations offer information on the structural and procedural characteristics of the child's classroom.

Hypotheses

The purpose of the present study was to investigate the role of dimensions of parenting styles on child social-emotional development in a low-income population of families with young children. The FACES datasets were selected because they offered data on a nationally representative sample of preschool children and their families. FACES incorporates data on family risk, parenting, and child functioning that are central to the current study. Further, the longitudinal study design allows for testing predictive

models. The 2000 cohort was chosen to take advantage of the inclusion of parenting styles items in the parent interview.

Hypothesis One. First, it was hypothesized that the independent variables presented in the conceptual model (violence exposure, family structure, maternal depression, parenting style measured at time 1) would explain a significant portion of the outcome variables presented in the model (child's social skills and behavior problems at time 2).

Hypothesis One-A. It was further hypothesized that the variance explained would not differ according to race/ethnicity as research using diverse samples suggests that the key study variables have an influence on children's social-emotional functioning (e.g., Ceballo et al., 2003; Gutman et al., 2003, Linver et al., 2002).

Hypothesis Two. It was further hypothesized that the model presented in Figure would be confirmed. Specifically, the following pathways were hypothesized for the current sample.

- Exposure to violence and family structure would each be associated with maternal depression.
- Exposure to violence, family structure, and maternal depression would each be related to parental warmth and control levels.
- Warmth and control dimensions of parenting would in turn impact the effect of exposure to violence, family structure, and maternal depression on child outcomes.

Hypothesis Two-A. Further, considering findings supporting the family stress theory in various racial/ethnic populations (e.g., Conger et al. 1994, 2002), it was hypothesized that the proposed model will hold across subgroups (i.e., race/ethnicity).

Participants

The current sample was selected from the FACES 2000 cohort. The initial sample consisted of 2790 families with children aged 3–4 years old from 43 Head Start centers nationwide. Selection criteria for the present study were determined by targeting specific ethnicities (i.e., African American, Latino, White) and focusing on children with female caregivers. Further, families for which longitudinal data existed (i.e., data were collected for at least three data points and parent data were available for Fall 2000 and Spring 2001) were targeted (a decrease of 892 cases). Due to small sample sizes, Asian, Native American, Pacific Islanders, bi-racial, and multi-racial mothers and their children were excluded from the study sample (a decrease of 24 cases). Further, respondents who were non-female primary caregivers (e.g., fathers, grandfathers, uncles) were also excluded from the present study's sample due to small sample sizes (a decrease of 194 cases). Children identified as having special needs or who were missing data regarding that variable were removed from the data set (a decrease of 251 cases). It was discovered that seven children lived with single fathers despite having a mother as a respondent. Those families were excluded from the present study. Finally, five children had ages that were ± 3 SD from the mean children's ages at Time 2 and were thus removed from the sample. In sum, the current sample size was reduced to 1417. The sum of the non-response-adjusted weights for the current sample is 255,220 (i.e., the weighted sample). Thirty-three percent of the current sample was African American, 30% Latino, and 37% White.

The children's ages at Time 1 (Fall, 2000) ranged from 34 – 70 months ($M = 48.3$, $SD = 6.4$). At Time 2 (Spring, 2001) the children were between the ages of 32 and 76 months ($M = 54.3$, $SD = 6.4$). For a detailed description of the sample, see Table 1.

It is believed the present study sample had adequate power to detect significant differences between the null hypotheses and the alternative hypotheses as it is generally argued that sample sizes greater than 100 are sufficient (e.g., Hayduk, 1987).

Table 1. Sample Descriptives

Variables	Percent of Sample
Community Type	
Urban	71%
Rural	29%
Maternal Race	
African American	33%
Latino	30%
White	37%
Maternal Age	
18-20 yrs.	5%
21-30 yrs.	59%
31-40 yrs.	29%
41-50 yrs.	6%
51-80 yrs.	1%
Maternal Education	
Less than High School	37%
High School/GED	37%
Some College/Training	24%
College Degree and more	2%
Child Gender	
Male	48%
Female	52%
Poverty Status	
Poor	68%
Non-Poor	32%
Maternal Depression ¹	
Not Depressed	49%
Mildly Depressed	26%
Moderately Depressed	15%
Severely Depressed	10%
Exposure to Violence	
Yes	26%
No	74%
Family Structure	
Single Mother	45%
Mother-Father	47%
Mother-Stepfather/Boyfriend	8%

Note: Depression based on CES-D scores: A score of 4 or less was considered as Not Depressed, scores ranging from 5 –9 were categorized as mildly depressed, respondents scoring between 10 and 14 were considered moderately depressed, and those scoring 15 and above were considered severely depressed.

Procedure

Data for FACES 2000 were collected through direct child assessment, parent interviews, teacher and staff interviews, and classroom observations. Data collection occurred over four time periods, the first in the Fall of 2000 and follow-ups in the Spring of 2001, 2002, and 2003. The sample of families with observations completed through Spring 2003 was 1898. In order to minimize attrition, the present study uses data collected through Spring 2001. Eighty percent of the initial sample of children ($n = 2232$) completed assessments in Spring 2001. Similarly, teacher reports were obtained for 80% of the children in the initial sample. Parent attrition was slightly higher with 78% of the parents ($n = 2166$) completing parent interviews.

Parent and teacher interviews were conducted by trained field staff. Field staff underwent an intensive week-long training prior to each data collection period. Lectures, video, and small group discussions were used to instruct field staff on data collection procedures and protocol. Field manuals were also given for staff to use as references upon returning to their sites. Actual data collection was conducted during pre-arranged two-week site visits at Head Start centers. Three-day long quality control visits were further conducted by FACES project staff to each site during the data collection period.

Measures

Demographics. Parent interviews were conducted in order to obtain family demographic variables such as child gender, child age, maternal education and race, employment status, and family structure. As discussed in more detail in chapter 2 maternal age, education, employment status, and income (i.e., poverty status) have all been shown to influence parenting behavior, thus, these variables were controlled for in

the analyses in the current study. Likewise, child age and gender were entered as control variables as they have been shown to influence child's social-emotional functioning. Further as race/ethnicity was used to define sub-groups, in full sample models any potential effects of race/ethnicity were controlled in the analyses.

Poverty Status. Poverty status was determined by parent report of household income at Time 1 and number of persons in the household. The interaction between annual income and number of persons in the household was compared to the 1999 Census Bureau Weighted Average Threshold of Poverty to distinguish between poor and non-poor families.

Community Violence. Family exposure to community violence was determined by parent report at baseline. Five items assessed the respondent's and the target child's exposure to violent crime in the community and home. Three items elicited categorical responses (i.e., *never, once, more than once*) and two others called for dichotomous (i.e., *yes, no*) answers. The categorical responses were recoded into dichotomous answers allowing for a dichotomous variable categorizing families as either exposed or non-exposed to community violence (i.e., 0 or 1). See Appendix C-1 for a full list of items.

Depression. Baseline assessments of depression at Time 1 were used to assign maternal depression levels. A modified version of The Center for Epidemiological Studies – Depression (CES-D) (Radloff, 1977) scale was used to measure depressive symptomatology. Using a Likert scale of *Rarely or never, Some or a little, Occasionally or moderately, Most or all of the time*, participants responded to statements such as “Your sleep was restless” or “You had trouble keeping your mind on what you were doing.” The 12 items used for the current sample represent two subscales of the full

CES-D: Depressed Affect and Somatic/Retarded Activity. Cronbach's alpha for the measure in the Fall of 2000 was .87 for the full sample. For the study sample the alpha was .86. See Appendix C-2 for the full measure.

Parenting Style. The parent interview contained items from the Child-Rearing Practices Report (CRPR) (Block, 1965). Responses were scored with a Likert scale: *exactly like you, very much like you, somewhat like you, not much like you, and not at all like you.* Confirmatory factor analysis was performed on the items in order to derive warmth and control scales. The Warmth scale consisted of four items and had a standardized alpha of .55. The Control scale consisted of five items and had a standardized alpha of .55. The relatively low alphas for the derived scales are believed to be a function of test length as Cronbach's alpha can be related to the number of test items such that fewer items can result in underestimated alphas (e.g., Brown, Cunha, & Frota, 2001; Steele, Nesbitt-Daly, Robert, & Forehand, 2005). Further, Schmitt (1996) argues that low alphas related to test length should not necessarily prohibit the use of the measure if the researcher believes the measure to have "meaningful content coverage of some domain and reasonable unidimensionality" (pg. 352).

Following the metric devised by Baumrind (1971), parents scoring high on the Warmth and Control scale were classified as Authoritative. Those scoring high on the Control scale and low on the Warmth scale were classified as Authoritarian. Parents scoring high on the Warmth scale and low on the Control scale were classified as Permissive. Those scoring low on the Warmth scale and low on the Control scale were classified as Neglectful. See Figure 2 for a visual description of the categories. Cut-offs for high scores were determined by summing scores at the extreme end of the Likert

scales (i.e. 4, 5). Thus a score of 16 and above for Warmth was considered high and a score of 17 and above on the Control scale (one item was reverse scored such that a score of “1” represented the extreme high end) was considered high. A similar method of assigning parents into parenting styles has been used by Steinberg et al. (1994, 1997, 2006). See Appendix C-3 for the full measure.

Figure 2. Baumrind’s Parenting Styles

	High Control	Low Control
High Warmth	Authoritative	Permissive
Low Warmth	Authoritarian	Neglectful

Social Skills. Teacher interviews contained 12 items regarding children’s cooperative behaviors. Cooperative behaviors include obeying instructions and playing well with other children. The items on the scale were drawn from the Personal Maturity Scale (Alexander & Entwisle, 1988) and the Social Skills Rating System (Elliott, Gresham, Freeman, & McCloskey, 1988). Scores were obtained by summing responses. Higher scores represented more beneficial social skills. Cronbach’s alpha for this scale was .88 for the full Spring 2001. It was .87 for the current study sample. See Appendix C-4 for the full measure.

Behavioral Problems. Fourteen items from the Personal Maturity Scale (Alexander & Entwisle, 1988), the Child Behavior Checklist for Preschool-Aged Children, Teacher Report (Achenbach, Edelbrock, & Howell, 1987) and The Behavior Problems Index (Zill, 1990) were used to develop a behavior problems index. Items were chosen that represent behaviors that have been related to learning problems and grade retention. Teachers were questioned regarding the frequency of aggressive, withdrawn, and hyperactive behaviors. Responses were summed across subscales (Aggressive, Withdrawn, Hyperactive) to create Total Behavior Problems scores with higher scores indicating more frequent or severe behavior problems. Cronbach's alpha was .86 for the full Spring 2001 data collection. For the study sample, the alpha was .86. See Appendix C-5 for the full measure.

Data Analysis Plan

Hypothesis One

The present study had three aims. The first was to determine the amount of variance accounted for between the predictor variables and the child outcome. Further, it was of interest to determine if the accounted for variance differs according to race/ethnicity. In order to accomplish this goal, a series of multiple regressions were performed. Regressions investigated the relationship between variables for the full sample followed by each of the race/ethnicity subgroups (i.e., African American, Latino, White). The series of regressions were conducted twice. First the key variable will be regressed to child social skills at Time 2 followed by a series regressing to child behavior problems at Time 2.

The first block of each regression model consisted of *a priori* determined control variables (child gender, child age, measure of the outcome variable at Time 1, maternal age, maternal education, maternal employment status, and poverty status). Entered into the second block of the model were the following predictor variables: exposure to violence, maternal depression, family structure, and parenting style.

Hypothesis Two

In order to determine the structure of the variance explained by the predictor variables of this study (i.e., exposure to violence, maternal depression, parenting style) of later child outcomes (i.e., social skills, behavior problems), structural equation modeling (SEM) was used. Further, the model was tested on sub-groups (race/ethnicity groups) using a multi-groups analysis method.

SEM allows for an entire model to be tested in a single statistical test. Further, following the work of others (Jackson, Brooks-Gunn, Huang, & Glassman, 2000) that asserts that multiple items can serve as indicators as it is an “unrealistic assumption” (p. 1415) that measures with multiple items can fully observe all constructs, it was decided to consider individual items as indicators of a latent construct. Thus, SEM was chosen over traditional path analysis, which assumes all variables in the model are observed whereas SEM uses estimation procedures to account for latent variables. Specifically, the EQS software (Bentler, 1995) to be used considers latent conceptual variables and measured predictor variables in the same model.

It was decided that a model-building approach was most appropriate to achieve the aims put forth in the present study. Model-building allows for a model to be tested in

a confirmatory analysis but will also generate alternative models if the original is found to be an unsatisfactory fit to the data.

The proposed model contained eight exogenous variables (i.e., maternal age, maternal education, maternal employment, maternal race, family poverty status, child age, child gender, baseline social-emotional functioning) and six endogenous (i.e., community violence exposure, maternal depression, family structure, maternal warmth, maternal control, child social-emotional functioning). Exogenous variables are those that are not caused by any variables within the model whereas endogenous variables are part of the causal chain within the model. The endogenous variables are assessed by multiple items. As discussed above, it has been suggested that few, if any, constructs can be fully observed (Jackson, et al., 2000). Therefore, variables measured by multiple items as well as those assessed through multiple measures are assumed to be vulnerable to latency (e.g., social desirability, proxy items) and are considered latent constructs. Indicators of each latent construct are in Appendix F-1. Preliminary correlational analysis suggests that sufficient relationships exist between the variables of interest indicating the possibility of a structural relationship (Appendix B-2). It should be noted that the correlational relationships between variables do not suggest causality.

The first step in the model-building process was to confirm the measurement model. Achieving a satisfactory measurement model suggests that the indicators representing the latent constructs are sufficient to proceed with model estimation.

Once the measurement model was confirmed, the full model was tested as to the goodness-of-fit with the present study's data. Alternative models generated by EQS were also examined, however, only changes consistent with the theoretical conceptions of this

study were considered. Finally, multi-group analyses were run to investigate the model's fit across subgroups.

Issues related to missing data were addressed by analyzing missing cases in order to detect systematic differences between the cases with data and those without. As only 11% of cases contain missing data, it was believed that there were no systematic differences and those cases were dropped from the final analysis.

Chapter 4

Results

In order to obtain the present sample, the data were cleaned as described in chapter 3. This was accomplished by removing participants who did not meet specific criteria or were outside of the scope of the study. Children who were outliers according to their age at time of assessment were also deleted from the dataset.

Prior to data analysis the issue of missing data was addressed. It was determined that fewer than 5% of cases were missing control variables (mother's ages, mother's education, mother's employment, mother's race, family poverty status, child age, child gender, baseline child social-emotional functioning) or predictor variables (violence exposure, family structure, maternal depression, parenting styles). The decision was made to drop cases missing those data as there were so few. Regarding outcome data, there was a greater possibility that families with data and without data might differ as there were more missing cases. Eleven percent of the sample was missing data on behavior problems and 10% were missing data on social skills. Thus, t-tests were conducted on control variables to determine if there were significant differences between those families with and without complete outcome data.

Results of analyses on the weighted sample found significant differences between groups; however, as Type I error was a concern with such a large sample, between group means were investigated to determine if the significant differences were of any practical relevance. With the possible exception of family income and maternal education level, it was determined that there were no differences between families with and without missing

data (see Table C-1). Those families missing data were dropped from the relevant analyses in order to minimize the manipulation of data. These strategies are consistent with those delineated by McCartney, Bub, and Burchinal (2006).

In order to facilitate proper interpretation of results, alternate versions of certain study variables were utilized in some analyses. Specifically, in order to reduce the number of degrees of freedom in the multiple regression models, continuous variables were chosen over categorical variables when possible. As a result, poverty status was not used as a control variable. Reported annual family income was used in its stead. Similarly, total violence exposure (i.e., the sum of experienced violent events) was used as a predictor rather than the dichotomous variable used in the SEM analyses. Further, the variables maternal education and family structure provided in the FACES 2000 dataset were collapsed into fewer categories for the regression models. Family structure was recoded as 1: Single mother; 2: mother/Biological father; 3: mother/stepfather; and 4: mother/boyfriend. Maternal education was recoded as 1: Less than high school; 2: high school graduate/GED; and 3: more than high school.

Hypothesis One: Poverty Related Stressors Predicting Children's Social-Emotional Functioning

It was hypothesized that the independent variables presented in the conceptual model (violence exposure, family structure, maternal depression, and parenting style each measured at time 1) would explain a significant portion of the outcome variables presented in the model (child's social skills and behavior problems at time 2). Multiple regressions were performed in order to address this hypothesis. The first block of each regression model consisted of *a priori* determined control variables (child gender, child

age, measure of the outcome variable at Time 1, maternal age, maternal education, maternal employment status, and family income). Entered into the second block of the model were the following predictor variables: exposure to violence, maternal depression, family structure, and parenting style.

In order to account for the design effects of the stratified recruitment techniques used in the FACES 2000 study, replicate weights needed to be applied to the analysis in order to calculate standard errors. This necessitated the use of statistical software capable of managing complex sampling. Therefore the regressions were conducted using WesVar 4.2. In order to ensure that proper factors were attached to each weight, new weights were created using the stratum and unit (i.e., program) variables provided in the public dataset. Jackknife procedures were used to create the 43 replicate weights needed (one per program). Once the proper weights had been added to the data, the regressions could be performed.

The first hypothesis was supported and the predictor variables measured at Time 1 did predict the child outcomes at Time 2. Using the full sample, the model was first run regressing to Time 2 behavior problems. The model was significant ($R^2=.34$; $F=18.83$; $p<.000$) (See Table 2¹). However, an investigation of probability statistics revealed that none of the key study variables made a unique contribution. Further, the largest contribution to the model came from behavior problems at Time 1. The model regressing to Time 2 social skills yielded similar results. Although the model was significant ($R^2=.40$; $F=64.64$; $p<.000$) (See Table 2), none of the key study variables were found to

¹ Replicate weights have the effect of clustering data. This creates inconsistent SD's rendering standardized betas inappropriate. Further, the parameterization techniques utilized by WesVar 4.2 prevent the reporting of regression coefficients for all categorical data. Thus, F statistics are presented in the regression tables as they are the most informative.

be significant above and beyond the others. Again, the baseline measure of the outcome contributed the most to the model.

Table 2
Regression of Time 1 Predictor Variables on Time 2 Child Outcomes: Full Sample

<i>Predictor Variables</i>	Behavior Problems (T2)	Social Skills (T2)
	F Value	
Time 1 Outcome	48.96***	286.99***
Child Gender	14.95***	23.21***
Child Age	3.05	18.79***
Maternal Education	.11	.33
Employment Status	1.03	2.13
Maternal Age	.001	2.89
Family Income	.02	.23
Violence Exposure	2.45	.38
Family Structure	.51	1.99
Maternal Depression	.58	.44
Parenting Style	.68	.19
R^2	.34***	.40***

*** $p < .001$. Gender: 1=Female, 2=Male Maternal Ed.: 1= <HS, 2=HS/GED, 3= >HS
Employment Status: 0=Unemployed, 1=Employed Family Structure: 1=Mother,
2=Mother/Bio. Father, 3=Mother/Stepfather, 4=Mother/Boyfriend

The second set of regressions was conducted by race/ethnicity groups. Again, the models explained a significant portion of the variance for each outcome. For the African American sample, 31% of the variance of behavior problems was explained ($R^2=.31$; $F=8.58$; $p<.000$) (See Table 3). However, as with the models run for the full sample, none of the study variables significantly contributed to the model above and beyond any other and the baseline measure of behavior problems made the largest contribution. Similar results were found for social skills ($R^2=.39$; $F=228.83$; $p<.000$) (See Table 3).

Table 3

Regression of Time 1 Predictor Variables on Time 2 Child Outcomes: African American Sample

<i>Predictor Variables</i>	Behavior Problems (T2)	Social Skills (T2)
	F Value	
Time 1 Outcome	17.78***	75.45***
Child Gender	3.78	3.73
Child Age	.97	12.51***
Maternal Education	.27	.01
Employment Status	2.88	4.18*
Maternal Age	.11	.50
Family Income	.65	.04
Violence Exposure	2.62	.49
Family Structure	.99	.33
Maternal Depression	1.11	.04
Parenting Style	.72	.47
R^2	.31***	.39***

* $p < .05$ *** $p < .001$. Gender: 1= Female, 2=Male Maternal Ed.: 1= <HS, 2=HS/GED, 3= >HS Employment Status: 0=Unemployed, 1=Employed Family Structure: 1=Mother, 2=Mother/Bio. Father, 3=Mother/Stepfather, 4=Mother/Boyfriend

Results for the White sample were consistent with previous models. The model was significant for both behavior problems ($R^2=.39$; $F=26.40$; $p<.000$) and social skills ($R^2=.36$; $F=62.37$; $p<.000$) with the baseline measures contributing the most to the models. See Table 4.

Table 4

Regression of Time 1 Predictor Variables on Time 2 Child Outcomes: White Sample

<i>Predictor Variables</i>	Behavior Problems (T2)	Social Skills (T2)
	F Value	
Time 1 Outcome	28.59***	154.61***
Child Gender	8.46**	21.12***
Child Age	3.34	3.62
Maternal Education	.83	.64
Employment Status	.83	.17
Maternal Age	.002	3.90
Family Income	3.951	1.22
Violence Exposure	.27	1.62
Family Structure	1.73	1.54
Maternal Depression	.10	1.00
Parenting Style	.60	.04
R^2	.39***	.36***

p <.01 *p<.001. Gender: 1= Female, 2=Male Maternal Ed.: 1= <HS, 2=HS/GED, 3=>HS Employment Status: 0=Unemployed, 1=Employed Family Structure: 1=Mother, 2=Mother/Bio. Father, 3=Mother/Stepfather, 4=Mother/Boyfriend

The regression model for the Latino sample failed to run due to a problem with the replicate weights. As part of the jackknife procedure, one program at a time is assigned a weight of zero. If enough data cluster around that particular weight it can disrupt the regression matrix prohibiting the software from completing the model. This was the case for the Latino sample. Changing the model is a possible solution for this issue; however, it was deemed undesirable to modify the model for one sample and not the others. In addition, there was no suitable theoretical or empirical basis for dropping one variable as opposed to another and I was wary of phishing in the data to force the model to run. Instead, unweighted data were run in order to provide descriptive analyses regarding the present sample of Latino families. For the current sample, the models significantly predicted both outcomes (Behavior Problems: Adj. R^2 =.40; F=8.89; p<.000;

Social Skills: Adj. $R^2=.35$; $F=13.53$; $p<.000$) (See Table 5). Again, the baseline measures made the largest contribution to the models. However, for the current sample of Latino families, certain study variables did contribute above and beyond others. Increased exposure to violence and single motherhood at Time 1 significantly predicted social skills at Time 2. Further, authoritarian parenting at Time 1 was predictive of behavior problems.

Table 5
Regression of Time 1 Predictor Variables on Time 2 Child Outcomes: Latino Sample

Predictors Variables	Behavior Problems (T2)			Social Skills (T2)		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Time 1 Outcome	.514	.063	.540***	.543	.057	.590***
Child Gender	1.92	.621	.212**	-1.781	.565	-.197**
Child Age	.052	.040	.073	-.001	.043	-.002
Maternal Education	-.151	.612	-.017	-.550	.552	-.061
Employment Status	.941	.648	.104	.054	.587	.006
Maternal Age	-.086	.055	-1.09	.048	.048	.062
Family Income	1.63E-005	.000	.039	1.72E-005	.000	.041
Violence Exposure	.605	.379	.106	-.817	.337	-.145*
Family Structure	-.978	.686	-.100	1.175	.616	.120
Maternal Depression	-.047	.049	-.065	.000	.044	.000
Authoritarian	2.119	.924	.158*	-1.104	.842	-.082
Permissive	.631	.782	.055	.121	.706	.011
Neglectful	.910	1.455	.042	.253	1.256	.012
Adj. R ²	.40			.35		

*p <.05 **p <.01 ***p<.001. Gender: 1= Female, 2=Male Maternal Ed.: 1= <HS, 2=HS or more Employment Status: 0=Unemployed, 1=Employed Family Structure: 1=Single Mother, 2=Other *Excluded Variables*: Authoritative

Hypothesis Two: Poverty Related Stressors and Children's Social-Emotional Functioning

The second hypothesis was that the model presented in Figure 1 would fit the data well. Structural equation modeling (SEM) was chosen for its ability to test an entire

model in a single statistical procedure. Further, SEM allows latent factors that cannot be directly observed, such as psychological variables, to be included in the model.

A two-step process was chosen which first required the measurement model to be confirmed. The purpose of a measurement model is to determine if the indicators of the various factors are measuring the underlying (i.e., latent) factor to which they have been assigned. In order to confirm that there is a relationship between all the factors, they are allowed to freely covary with the exception of reference variables. Technically, the measurement is nested within the structural model creating a hybrid. Therefore the measurement model must be determined to have good fit before the structural model can be tested.

There is still discussion as to what constitutes a “good fit.” For the purposes of this study, a conservative approach was taken in choosing appropriate test statistics. First, only robust statistics were chosen. Robust test statistics were chosen after it was determined that a normal distribution of the data could not be assumed. EQS provides Mardia’s coefficient as a measure of kurtosis. A statistic of 1.96 or greater indicates non-normality. Mardia’s coefficient for the present sample is 49.7. Second, only fit indices that are most consistently reported to be suitable for large samples were used. Third, the values for determining good fit were selected by taking a survey of arguments on the topic and setting a range of adequate values. Thus, the fit indices presented here are appropriate for large, non-normal samples with values generally agreed upon to be adequate.

“Good” fit is determined by a general consensus that .90 or greater is acceptable for the Comparative Fit Index (CFI) and the Non-Normed Fit Index (NNFI) and that a

Root-Mean Square Error Approximation (RMSEA) should be, at minimum, less than .08 (see Marsh, Hau, & Wen, 2004; McDonald & Ho, 2002; Sivo, Fan, Witta, & Willse, 2006; & *Personality and Individual Differences*, May 2007 for discussions regarding fit indices). For the full sample in the current study, the measurement model fit the data well (CFI=.95; NNFI=.94; RMSEA=.04).

Once the fit of the measurement model had been confirmed, the structural model was tested. Hypothesis two was supported and the model did fit the data for this sample (CFI=.91; NNFI=.90; RMSEA=.04). For the full sample, the model explained 26% of child social-emotional functioning. See Figure 3 for the full model. However, as can be seen in the model, despite the goodness of the fit, individual standardized path coefficients were generally low. Violence exposure and family structure were both significantly correlated with maternal depression. Mothers in families who had experienced violence exposure were more likely to be depressed. Similarly, single mothers were most likely to exhibit depressive symptomatology. The model also shows a significant negative association between maternal depression and both maternal warmth and control. In other words, depressed mothers reported fewer warm behaviors as well as fewer control behaviors. Likewise, a negative association emerged between family structure and maternal control indicating that single mothers scored lower on the control scale.

Further, parental warmth and control were strongly significantly associated with one another. The relationship was positive suggesting that, in the present sample, high levels of parental warmth often coincided with high levels of control. Path tracings were conducted to determine covariance explained by the disturbances (e.g., error, residual) of

each factor and that of the factors. It was determined that the majority (99%) of the variance could be explained by the disturbances and exogenous factors. The paths leading from parental warmth and control were not significantly related to the child outcome of social-emotional functioning. Although a mediation analysis according to the procedures established by Baron and Kenny (1986) was not the goal of this study, the lack of significant paths from warmth and control to the child outcome did prompt the author to investigate direct pathways from the model's exogenous variables (violence exposure, maternal depression, family structure) to the child outcome (social-emotional functioning). Once again, the new model had good fit (CFI=.91; NNFI=.90; RMSEA=.04) accounting for 26% of the variance of the outcome. However, as with the mediated model, none of the pathways to social-emotional functioning were significant (see Figure 4).

Next, the multi-group analysis was conducted beginning with a reconfirmation of the measurement model independently for each subgroup (African American, White, Latino). Latino and White samples continued to demonstrate good fit of the measurement model (Latino: CFI=.95; NNFI=.93; RMSEA=.04 White: CFI=.94; NNFI=.92; RMSEA=.04). However, the African American families presented with a Heywood case. A Heywood case occurs when the SEM software arrives at a mathematical solution that is not conceptually appropriate. It is often seen when factors are represented by two indicators. In this case, the error term for the variable representing the somatic subscale of the depression factor was constrained to zero. One solution to a Heywood case is to change the model. This can be done by reconfiguring paths or adding indicator variables to the factor in question, assuming there are

theoretical justifications to support the changes. However, in a multi-group analysis changes made to the model for a single group must be made for all groups. Thus, this was not considered a desirable solution.

Heywood cases can also be addressed by providing start values in an attempt to compel the software to find an alternate mathematical solution. Start values are numbers assigned to free parameters rather than allowing the software to generate its own values. There is no consensus as to the best procedure by which to choose a value, thus several values were offered. The Heywood case remained unresolved. A third and final attempt to find an acceptable solution was to remove outliers from the sample. Five cases were found to exceed three standard deviations of the mean on the somatic scale and were removed. Unfortunately, the Heywood case remained and the decision was made to continue the multi-group analysis without the African American subgroup.

The next step was to confirm that the measurement models did not significantly differ across the White and Latino subgroups. Due to the large sample size and the sensitivity of chi-square to larger samples, change in comparative fit index (CFI) was chosen as the test statistic. A change of greater than $-.01$ was considered significant (Cheung & Rensvold, 2002). First, the measurement models were tested on the groups simultaneously (CFI = $.95$). Second, the models were again tested simultaneously with the paths of each group constrained to equal one another. A LaGrange multiplier test was used to identify parameters that significantly differed across groups. Three parameters were identified (two items from the warmth factor and the somatic subscale from the depression factor). Significant paths were released sequentially and change in CFI investigated. Changes were non-significant with the difference between the

unconstrained model and the measurement model with all significant paths released equaling $-.005$. In other words, although there were significant differences in certain parameters between groups, those differences did not result in significantly different models between groups.

With the measurement model confirmed for each group, the structural model could be tested for differences across groups. The process for testing the structural model is identical to the procedures used in testing the measurement model. First, the structural model was tested for goodness-of-fit on each subgroup independently. See Figures 5 and 6 for each model. The data for both groups fit the model well. (Latino: CFI=.91; NNFI=.89; RMSEA=.04; White: CFI=.90; NNFI=.89; RMSEA = .04)². Next, the models were tested on both groups simultaneously resulting in a CFI of .90. The models were again tested with the parameters of interest constrained to equal one another. Parameters that significantly differed from one another were identified using the LaGrange multiplier test. Loadings for two items of the control factor and the pathway from violence exposure to control differed significantly. Those parameters were released sequentially to test changes in the CFI test statistic. Changes never reached significance, with the difference between the unconstrained model and the final models with three parameters constrained equaling $.00$. Thus, although there were significant differences in certain parameters between groups, those differences did not result in significantly different models between groups. In other words, the proposed model held for both White and Latino subgroups (CFI=.90; NNFI=.89; RMSEA = .03). See Figure 7.

² The readers should remember that the CFI and NNFI cutoffs of .90 are an approximate value. The author has accepted this value (.89) as significant due to the ability to round the statistic to .9. Further, the author has considered the presence of two other statistics that are often used to denote significance on their own.

Although the model did fit the data for both subgroups, the differences between the final models for both groups are noteworthy. The SEM analyses yielded results with more variance explained for the White subgroup ($R^2=.36$) than the Latino group ($R^2=.22$).

Although none of the causal pathways were significant for either group, there were differences regarding the covariances. The covariances of violence exposure and maternal depression and the covariances of the disturbances of the factors for warmth and control were significant for both groups; however, the coefficients did differ. In both groups, exposure to violence was related to higher levels of depression. However, being a single mother was related to maternal depression only for the Latino mothers. Once again, the disturbances of maternal warmth and maternal control significantly covaried. Path tracing revealed that only 4% of the covariance could be explained by the relationship between the two factors in the White sample with the remainder being explained by the exogenous factors and the disturbances. For the Latino sample, the covariance attributed to the factors alone was 2% suggesting a limited relationship between warmth and control beyond what can be explained by model variables and shared error.

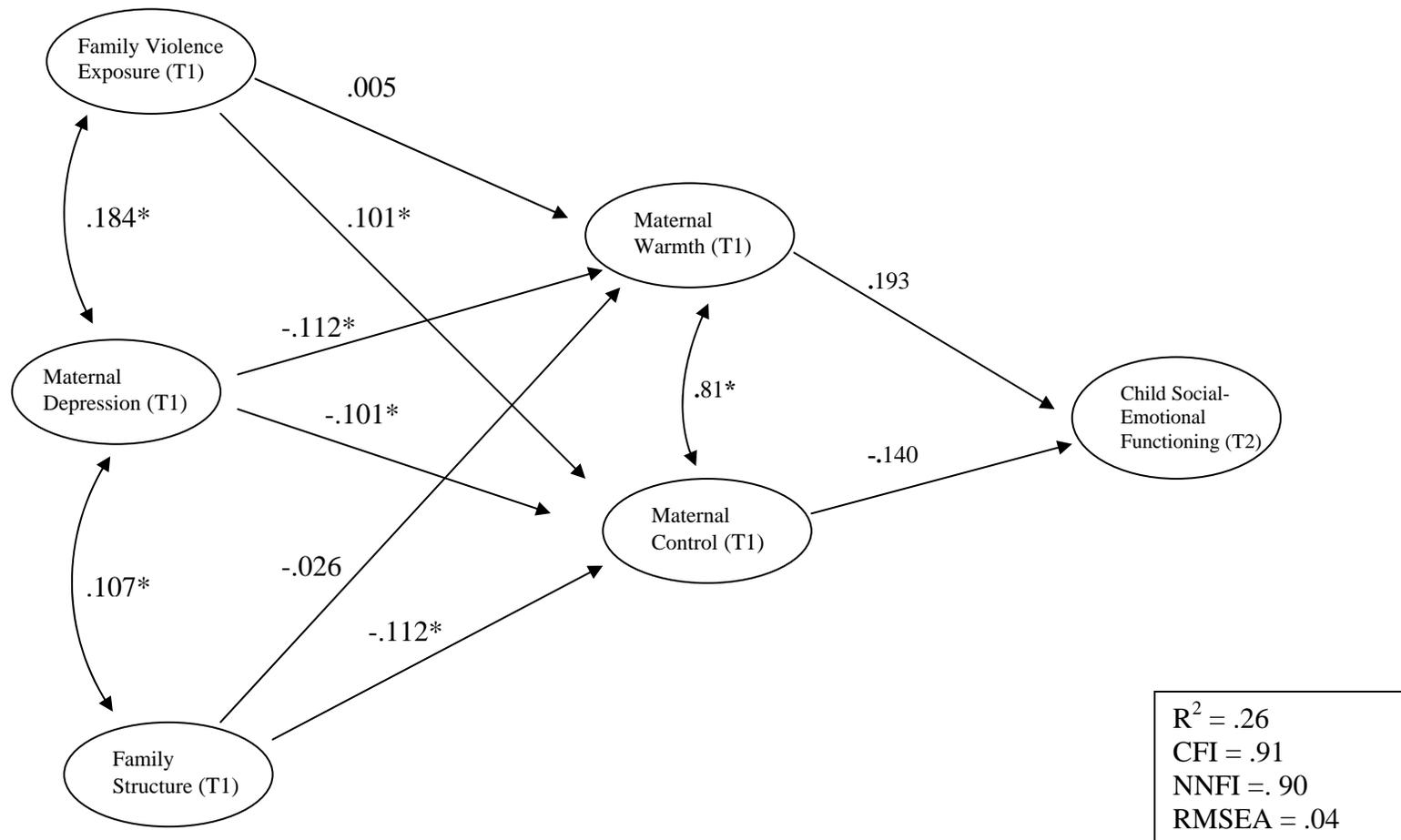


Figure 3: Full Sample Model (Standardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Maternal Race, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

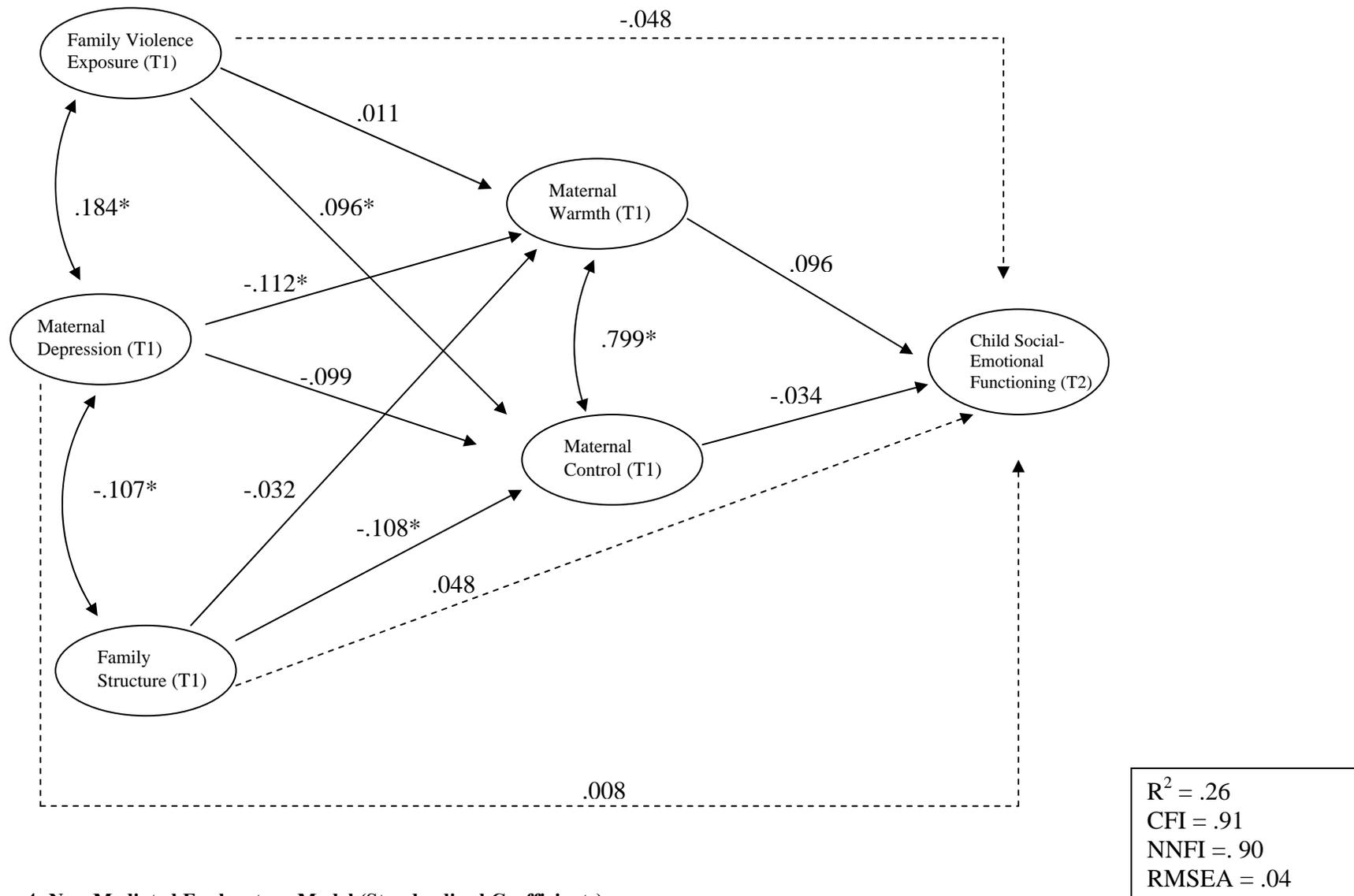


Figure 4: Non-Mediated Exploratory Model (Standardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Maternal Race, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

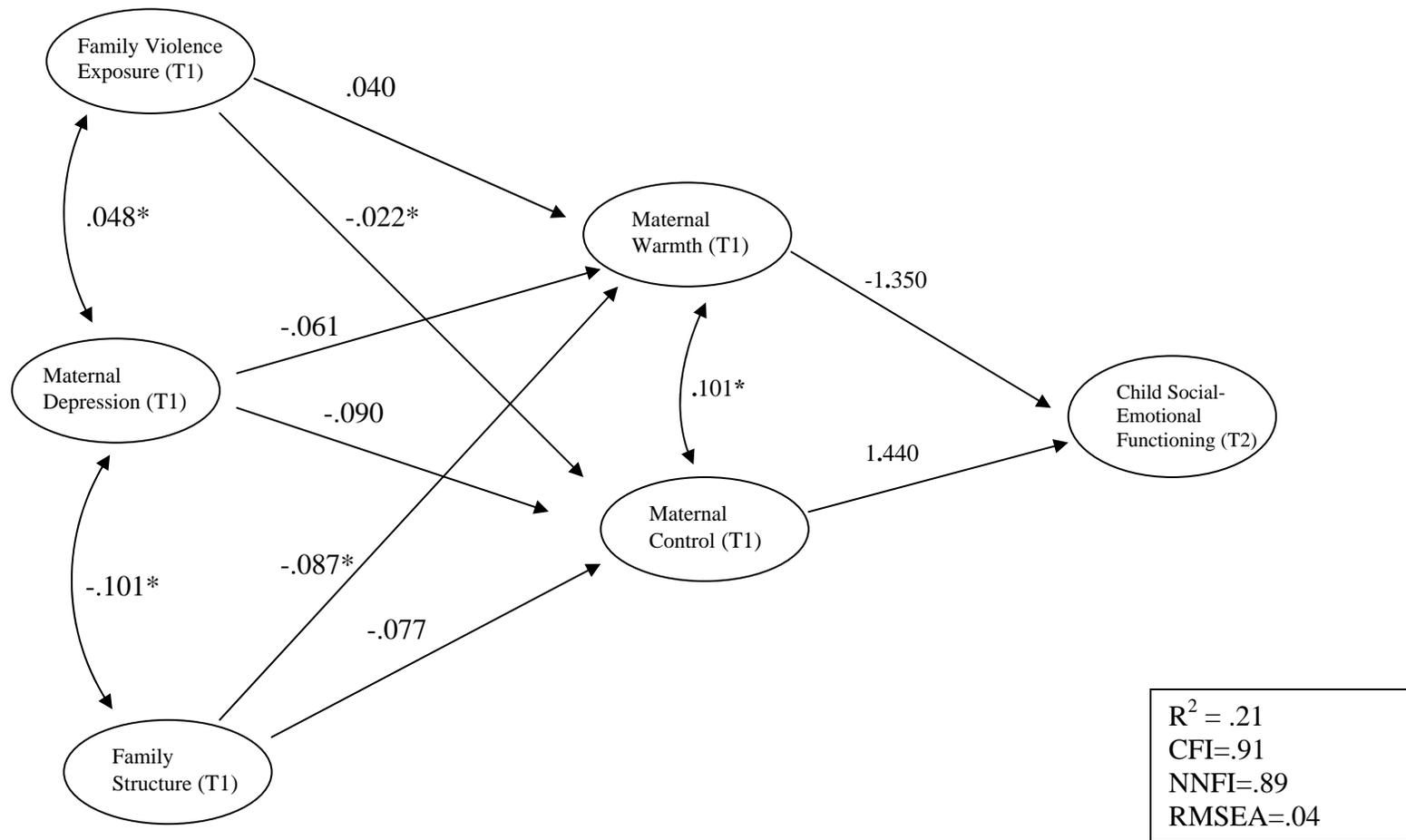


Figure 5: Latino Sample (Unstandardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

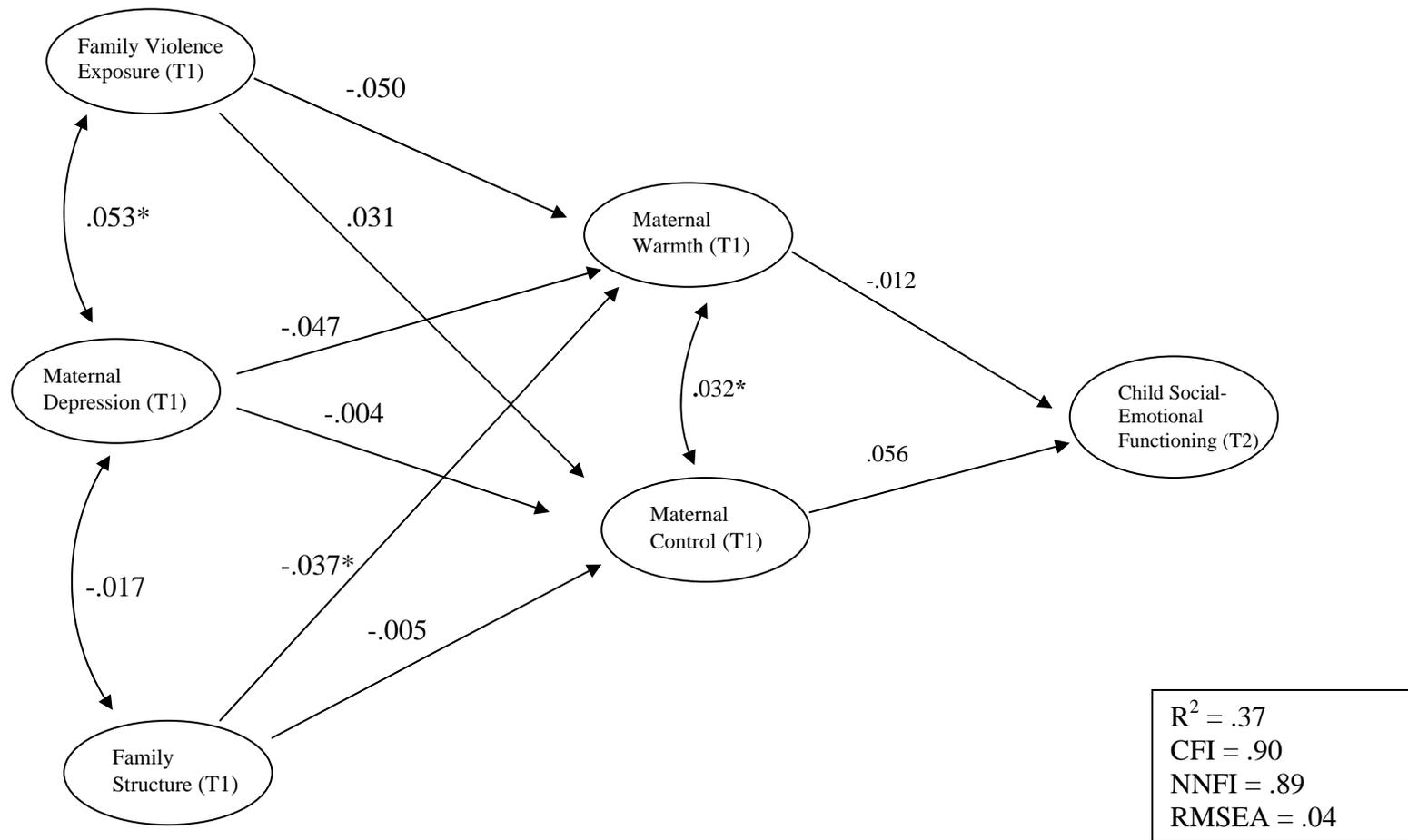


Figure 6: White Sample (Unstandardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

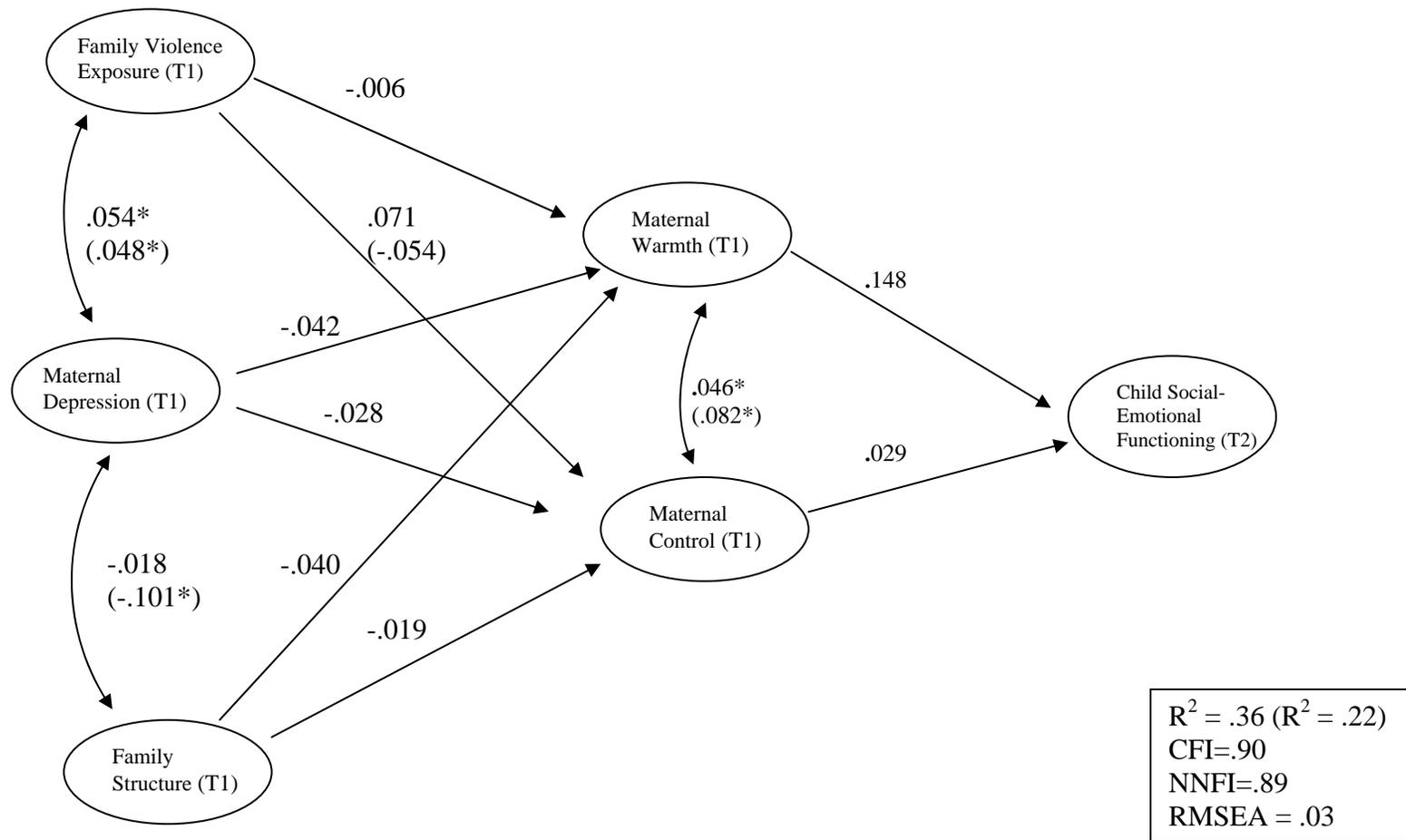


Figure 7: Final Multi-Group Model (Latino Coefficients in Parenthesis; Unstandardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

Chapter 5

Discussion

In the present study, all analyses performed demonstrated that the hypothesized models fit the data explaining a portion of the variance for all outcomes. However, in all cases, it was found that the child social-emotional outcomes were not strongly influenced by individual study variables. Instead it was the cumulative effect of the variables that predicted children's social-emotional outcomes.

Regressions revealed that in all groups a significant amount of the variance of the outcomes could be explained by the proposed models. This was true even for the descriptive regression run for the Latino sample. Yet very few of the predictors explored, both control and key variables, contributed a significant amount to the model. However, with such large models, small contributions made by many factors were able to adequately predict children's behavior problems and social skills.

Similarly, the multiple SEM analyses conducted showed that the proposed causal pathways between the study variables did explain the relationship between Time 1 poverty related stressors, parenting, and children's social-emotional functioning at Time 2. However, an investigation of the causal pathways reveals that few of the variables had a significant impact on one another and none had a direct effect on the outcome. Once again, it appears that it is the cumulative effect of the relationships that account for the significance of the models.

In the multi-group analysis, the data reveal that there are very few differences between groups regarding the relationships among the variables. The study variables interact in the same ways for both Latino and White families despite the differences in

variance explained. However, it is important to reiterate that the African American families, although a part of the full sample analyses, could not be investigated separately due to the occurrence of the Heywood case.

This chapter will address these results, placing the findings in the context of the current literature. Future research directions derived from the current study will also be discussed. Understanding any limitations that may be associated with a study's design is critical to properly interpreting study findings; thus, the present study's limitations will also be outlined. An argument will be presented for the practical implications of this study. It is important to consider the implications for policymakers and practitioners, when conducting research on those who may rely heavily on the services provided by government and private institutions interested in mitigating the effects of poverty related stressors on the lives of low-income families.

Causal Relations

Relationships between Poverty Related Stressors

In all samples, the risk factors violence exposure and family structure were both significantly related to maternal depression. In Latino and White families as well as in the full sample, there emerged a relationship between violence exposure and maternal depression such that increased exposure to violence was associated with elevated depression levels. This is not surprising when one considers the current literature linking violence exposure and depression. The family stress theory suggests that a risk factor common to low-income families such as violence exposure will negatively affect parental psychological functioning (e.g., Conger & Elder, 1994). That the findings are the same for the full and Latino samples is also consistent with literature suggesting that violence

exposure is an issue in the lives of low-income families with no regard to race/ethnicity (e.g., Aisenberg, 2001, Farver, Natera, & Frosch, 1999). Further, research has demonstrated the effects of violence exposure on depression in large, diverse samples (Silverstein, Augustyn, Cabral, & Zuckerman, 2006).

The relationship between family structure and depression, however, was not consistent. The pathway was only significant in the full and Latino samples. However, what can be taken from this finding is the protective role fathers and father-figures may play in family processes for these families (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004). In the presence of biological fathers, step-fathers, and boyfriends, the incidence of high depression scores were reduced.

Pathways to Parenting Styles

The dimensions of parenting styles (warmth, control) were also affected differently in each analysis. In the full sample, only maternal depression had any effect on maternal warmth levels. Increased depression led to decreased warmth. In contrast, the low-income mothers in this sample who were not depressed reported high levels of warmth in their parenting behaviors. Again, this finding is consistent with the family stress model which links depressed mood to low levels of nurturant parenting (e.g., Conger & Elder, 1994). However, contrary to the family stress theory, this association was not found in examinations of race/ethnicity subgroups. This was surprising as the family stress model has held for White (Conger & Elder, 1994) and African American families (Conger et al., 2002). There was no reason to expect that this association would not be observed in White and Latino families. Further, samples including Latino families have found non-causal relationships between maternal depression and negative mother-

child interactions (Coyl, Roggman, & Newland, 2002). It appears that in the present sample, although there may have been a correlational relationship between depression and warmth, a claim of causality from depression to warmth could not be made for the Latino and White families. However unexpected, this finding is not without precedent. At least one other study of mothers of preschool children also found no association between maternal depression and parenting behaviors (Chronis et al., 2007).

Similar results were found in regard to the relationship between maternal depression and levels of maternal control. In the full sample, there was a significant negative relationship suggesting that high levels of depression led to lower levels of control. Studies have reported findings that contradict those reported here. In one study, depressed mothers were found to be more punitive (Elder, Conger, Foster, & Ardel, 1992). Likewise others have reported that depressed parents are more restrictive (Gutman, Friedel, & Hitt, 2003). What is common to the aforementioned studies is a focus on adolescents. It may be that when faced with more autonomous teenagers, depressed mothers resort to controlling behaviors but are more lax with younger children.

It also notable that in a study specifically assessing parenting styles in families with school-age children maternal depression was negatively associated with authoritative parenting (Onatsu-Arvilommi, Nurmi, & Aunola, 1998). This suggests that these mothers did not display concurrently high levels of warmth and control. Taken together, the findings presented here are consistent with those of Onatsu-Arvilommi et al (1998). The data suggest the most severely depressed mothers in this sample were likely to be neglectful parents, as increased levels of depression resulted in decreased levels of warmth and control. Low levels of both warmth and control describe a neglectful

parenting style (see Figure 2). However, more robust measures and a more targeted study examining varying degrees of depression and parenting are required for drawing such conclusions.

The SEM analyses yielded contradictory results regarding violence exposure and maternal control. In the full sample, exposure to violence resulted in increased maternal control. However, in the Latino sample, violence exposure led to decreased levels of control. These inconsistent findings are not uncommon to the literature. Whereas some studies have reported that parents feel the need to exert more control over their children in the face of dangerous neighborhoods (e.g., Horowitz, McKay, & Marshall, 2005) others have reported the opposite (e.g., Ceballo et al., 2003; Kotchick et al., 2005).

In both the Latino and White samples, single mothers had higher levels of maternal warmth. Relationship quality between caregivers in the two-parent homes may explain this finding. Conger et al. (1994, 2002) reported that poverty related stressors had a negative effect on the caregiver relationships which led to poor parenting. Unfortunately, relationship quality was not examined in the present study making conclusive assertions difficult. However, it could be hypothesized that, in the present study, single mothers were able to show greater warmth due to a lack of co-caregiver conflict.

Effects on Child Social-Emotional Functioning

In contrast to the extant literature, there were no direct effects on children's social emotional functioning in any of the SEM analyses. Available evidence suggests that dimensions of parenting styles directly affect child outcomes (e.g., Wolfradt, Hempel, & Miles, 2003; Thompson, Hollis, & Richards, 2003). However, the variance explained by

the models does suggest that the study variables examined are important to the development of child social-emotional functioning. Further, the high path coefficients, particularly the standardized coefficients, also suggest a strong influence on the outcome by the parenting characteristics involved. Thus, the lack of significant findings is most likely a result of a statistical fluctuation rather than an absence of a meaningful relationship between variables. A more detailed discussion of this probability follows in the Methodological Considerations section of this chapter.

True Sub-Group Differences

Thus far the discussion has focused on descriptive, observed differences between SEM models. However, observed differences may not reflect statistically significant differences. Despite the many discrepancies between the Latino and White samples when models were run separately, only one pathway was shown to differ when multi-group analyses were performed. That pathway was between family structure and depression. The relationship between single motherhood and depression was only significant for the Latino families with single mothers reporting more depressive symptoms. One can only speculate as to why these paths differed in this sample. It may be that the Latino mothers had a more developed support system, for example. One study found that social support partially mediated the relationship between family structure and depression levels (Cairney et al., 2003). Another difference not reflected in the pathways was the amount of variance in children's social-emotional functioning explained by the predictor variables. Whereas, the model explained 36% of the variance in White families it only explained 22% in Latino families. Conger et al. (1994, 2002) found similar

differences when the family stress model was applied to different race/ethnicity groups with more variance explained for White families than minority families.

Methodological Considerations

Consistent with extant literature, the key variables in the present study did predict the child outcome of social-emotional functioning. This was shown in both the regression and SEM analyses. Further, this was true for the race/ethnicity subgroups as well as for the full sample. However, close examination of the models reveals that the individual variables are not strong predictors by themselves. It is possible that the limited time period between time 1 and time 2 did allow for impact of the time 1 variables to develop. It may also be that the study variables are not independently salient for social-emotional development. However, a substantial body of existing literature would disagree with that interpretation (e.g., Guerra, Huesmann, & Spindler, 2003; Jackson & Scheines, 2005; Onatsu-Arivilommi et al., 1998; Randolph, Koblinsky, Beemer, Roberts, & Letiecq, 2000; Tan & Rey, 2005). More likely, the findings in this study raise the question as to the significance of the baseline measures. Baseline measures had the largest contribution to social-emotional functioning in all of the regression models. Baseline controls are commonly used in experimental studies in order to parse out the effects of treatment. It can be argued that with non-experimental designs one cannot know what predicts the baseline. Thus, it could be hypothesized that the Time 1 study variables pre-date the baseline assessment and that those variables are predicting the baseline scores. However, the decision was made to include baseline measures in the analyses presented in the current study, yielding results that suggest that environmental

factors both proximal and distal have minimal independent influence over children's social-emotional development.

The lack of significant pathways, however, likely had an alternate cause. Not all of the social-emotional functioning indicators had normal distributions (hence the use of robust statistics). As a result, the variance of each indicator was restricted. Combining indicators into a single factor might have further restricted the variability of the outcome, making it difficult for the study variables to effect change on the outcome. It may be that dividing social-emotional functioning into separate factors may have allowed adequate variability in at least one of the factors making the impact of the pathways easier to detect.

Parenting Styles

A central question in the current study was the role of parenting styles in the development of children's social-emotional functioning. Although the mediated model (i.e., no direct pathways from the exogenous variable to the outcome variable) did hold for all groups, the lack of significant pathways makes it difficult to draw conclusions regarding the importance of parenting styles. Clearly, parenting styles play a role in the relationship between family risk factors and child social-emotional functioning but the exact nature of that relationship cannot be fully understood based on the data presented here. However, the data suggest that the two dimensions of parenting style (i.e., warmth, control) share in the influence over a child's development. The strength of the coefficients between warmth, control, and children's social-emotional functioning particularly within the full sample, provides evidence for this conclusion.

Specifically, the relationship between variables in this study addresses certain methodological concerns regarding the appropriate interpretation of parenting styles. The SEM models demonstrate not only that warmth and control have a shared impact on social-emotional functioning, but also that both warmth and control can be influenced similarly by external variables. One is not more vulnerable than the other. Had the analyses not considered both dimensions, the models might have yielded very different results. Without both warmth and control to share variance, the pathways both to and from those factors might have been more likely to have higher coefficients. In other words, the effect of the on parenting would have been condensed, if you will. Instead, the results provided here demonstrate the equality of the dimensions and the importance of examining them simultaneously.

Further, the findings related to the covariances of both control and warmth were notable. The vast majority of the shared variance could be explained by error and other variables. In other words, there seems to be no underlying relationship between these two variables; they are independent of one another. Thus, one cannot assume that an increase in one results in the decrease in another or vice versa. These findings suggest the importance of including both dimensions of parenting styles. Further, it draws attention to the danger of making inferences of one based on findings related to the other.

Analyzing Complex Data

The data surrounding the relationship among the study variables do not lend themselves to simple interpretation. In fact, the data presented here demonstrate the need to continue to investigate the relationship between variables using more sophisticated analyses. For example, the regressions performed in the current study did not allow for

an adequate examination of social-emotional functioning, as it would be inappropriate to simply combine the two constructs used to represent social-emotional functioning (behavior problems and social skills) into composites. However, by using latent factors more information about the relationship between the predictor variables and the outcome could be obtained. Although this technique may have led to the reduction of variance discussed earlier, some researchers may find it a more useful analysis.

Similarly, although the regressions performed on the different subgroups did reveal differences in the amount of variance explained for each group, it is difficult to determine if those differences are significant. Conducting multi-group SEM analyses allowed for those tests to be performed. Results demonstrated that despite the differences in variance explained, the models were essentially the same for the groups examined. Differences that appeared to be present when models were compared before the multi-group analysis was conducted were found to be statistically non-significant once the procedure was completed. For this reason, the multiple models presented illustrate the need to perform multi-group analyses when exploring group differences.

Further, the use of SEM allowed for the testing of family stress theory which focuses on the causal relationships among multiple variables as opposed to a more simplistic predictive influence. Using constructs ranging from the distal (e.g., community violence) to the proximal (e.g., parental characteristics), the present study demonstrated how parenting can act as a mediator between poverty related stressors and child development. The mediated model presented here supports the hypothesis that children are affected by external stressors through the effect on their parents. Regression

modeling, although helpful in identifying variables of interest, does not provide the level of causal information provided by SEM.

Future Research and Limitations

There are important limitations to this study that must be considered. Future research designs should consider the limitations of the present design and improve upon them. In addition, future studies should build on the lessons learned regarding the benefits of the methodological approach undertaken in this study.

First, although the sample is nationally representative, it is composed only of Head Start families and is, therefore, only generalizable to the Head Start population. Further, due to attrition, the original sample is not fully represented. The significant degree of attrition may result in selection bias. However, the sample has been weighted to account for non-respondents in an attempt to minimize any bias that may have occurred. Small sample sizes for other ethnicities and male caregivers also prohibited expanding the scope of the study to include these groups.

It is also unfortunate that a full multi-group analysis on the three race/ethnicity groups of interest could not be conducted due to the Heywood case encountered with the African American sample. Future research should consider factors not limited to two indicators. Doing so should not only reduce the chance of a Heywood case, it should also add to the robustness of the model by providing more information.

The model held for both the White and Latino subgroups demonstrating that the relationship between the variables remained the same. However, the variance explained by the SEM models for the White and Latino groups were different. This suggests that although certain factors may function similarly across racial groups, the importance of

those interactions may differ. Thus, conducting analysis within and between race/ethnicity groups remains an important empirical focus.

Measures used in the present study also present certain limitations. Child exposure to violence is reported by the mothers in this study. However, as the children spend a portion of their day in Head Start, it is conceivable that they are exposed to violence of which their mothers are unaware, leading to underreporting. The exposure variable in this study was dichotomized wherever possible in an effort to minimize the impact of underreporting. In addition, the parenting style constructs are derived from scales with relatively low alphas. However, the scales do have strong construct validity. Moreover, the significance of the mediated model, with poverty related stressors affecting social-emotional functioning through the impact on parental warmth and control, should encourage further research with more robust parenting style measures.

Many of the measures used in the present study were truncated versions of the original instrument. More robust and detailed measures may have provided more information yielding stronger models. However, the significant findings presented here should encourage researchers to examine these relationships by investing in more robust measures. The parenting measure was particularly weak in this study; even so evidence was produced suggesting the importance of parenting as a key variable.

Researchers may also want to consider exploring more psychological variables (e.g., perception of support, locus of control). As it appears that environmental variables do not have consistent effects on parents, it may be beneficial to explore personal variables that may vary in their source but not their impact. For example, as has been found in multiple studies, maternal depression is an important psychological variable to

consider when studying family processes, however, the correlates of depression may differ (e.g., Elgar, McGrath, Waschbusch, Stewart, & Curtis, 2004; Malik et al., 2007).

There is evidence presented here pertaining to the contribution made by Baumrind's parenting style. However, the evidence is limited possibly due to the construction of the factors. Examining parenting styles directly (i.e., authoritative, authoritarian, permissive, neglectful) as opposed to their separate dimensions (i.e., warmth, control) is the next step in understanding the impact of parenting styles on the development of children's social-emotional functioning.

The findings related to the SEM models do not account for FACES 2000 study design effects (i.e., the stratified recruitment approach). This is due to the absence of replicate weights in the analyses. Fortunately, the effect of not including weights is to increase standard error estimates resulting in more conservative significance tests. The SEM community is developing ways to manage replicate weights and future research should take advantage of these techniques.

Similarly, the Latino sample is not fully represented in the regression analyses. The constraints presented by the occurrence of the zero replicate weight prohibited the model from converging. As a result, the data can only be interpreted as descriptive findings generalizable only to the individuals in the sample.

Policy Implications

It is important that policymakers continue to consider the contribution of parents to a child's development. As demonstrated by this study, developmental risks can have many origins and it may not be possible for a single program (e.g., Head Start) to affect change in all the vulnerable areas. However, the causal paths investigated in the current

study provide evidence for an indirect relationship between stressors and child outcome through parenting. Programs such as Head Start have remarkable opportunities to get involved with the parents of young children. With this access, practitioners can work with parents to help them mitigate the effects of poverty related stressors on their own parenting behaviors, which can then reduce the influence of those stressors on children.

There is also something to be learned from both the similarities and the differences among the race/ethnic subgroups in the current study. The consistency of the causal relationships among the study variables reveal that the potential for parenting to reduce the effects of poverty related stressors on children's development holds for families from varied backgrounds. Thus, regardless of the target population, policymakers and practitioners should include parents in programs designed to promote children's social and emotional development. However, the differences between the subgroups suggest a need for programs to be tailored to the population being served. In other words, although servicing parents may be important for all families, the issues to be addressed may differ.

For example, the differences in variance explained between the White and Latino groups presented here suggest that there may be other critical variables at work in the Latino sample that are not as critical to the White families. It may also be that a variation in coping skills or some other psychological variables are accounting for the differences between the two groups. Thus, it would be important for policy and program developers to investigate the specific characteristics of the target group to be served prior to implementing services.

Conclusion

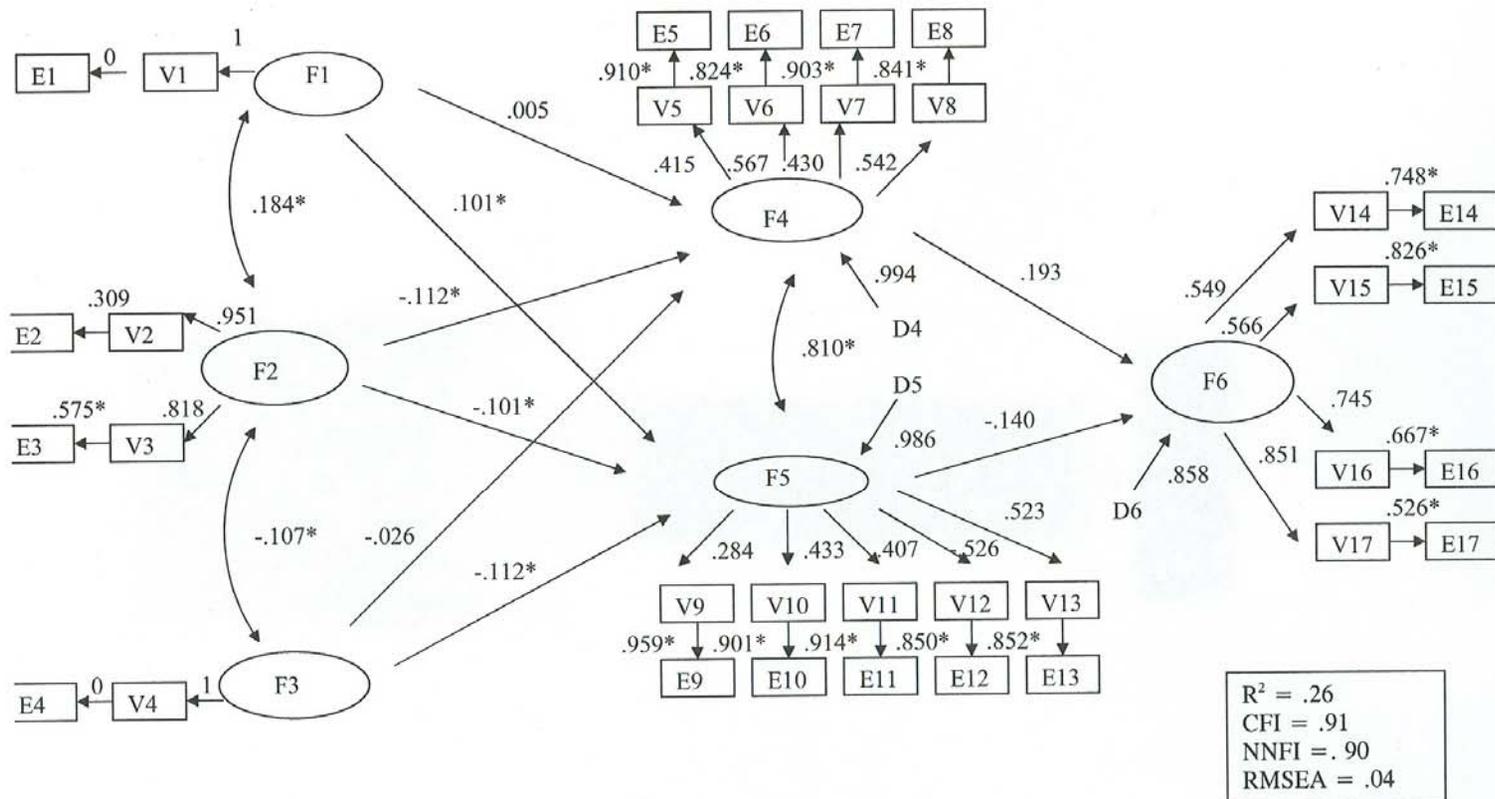
The present study has much to offer the literature in the area of development of children from low-income families. Many of the lessons herein are in the realm of methodology. Specifically, the findings here point to the importance of using regression analyses to identify variables of interest, followed by more complex analyses to understand how those variables interact. Moreover, the value of multi-group analyses can be appreciated when one recognizes the false conclusions regarding differences of significant pathways between the groups that would have been drawn from simply comparing the separately run models.

There is still more to be learned about the mechanisms by which parenting mediates the effect of poverty related stressors. However, the evidence reported in the current study does add to the body of literature that speaks to the importance of parenting and the significance of using the family stress model as a way to examine family processes. Further, by examining warmth and control individually, support is given to the benefit of adhering to Baumrind's typology of parenting styles. The data demonstrate a shared influence by both warmth and control on children's development.

Although much is made about race/ethnicity differences in low-income families, the multi-group analyses performed here illustrate the many similarities among these populations as well. Despite these similarities there were also some intriguing differences among the families regarding the degree to which the families were affected by the poverty related stressors. Researchers should further explore possible mechanisms that might explain the discrepancies. In this way, the populations that are less affected by stressors may be able to offer solutions for those that are more significantly impacted.

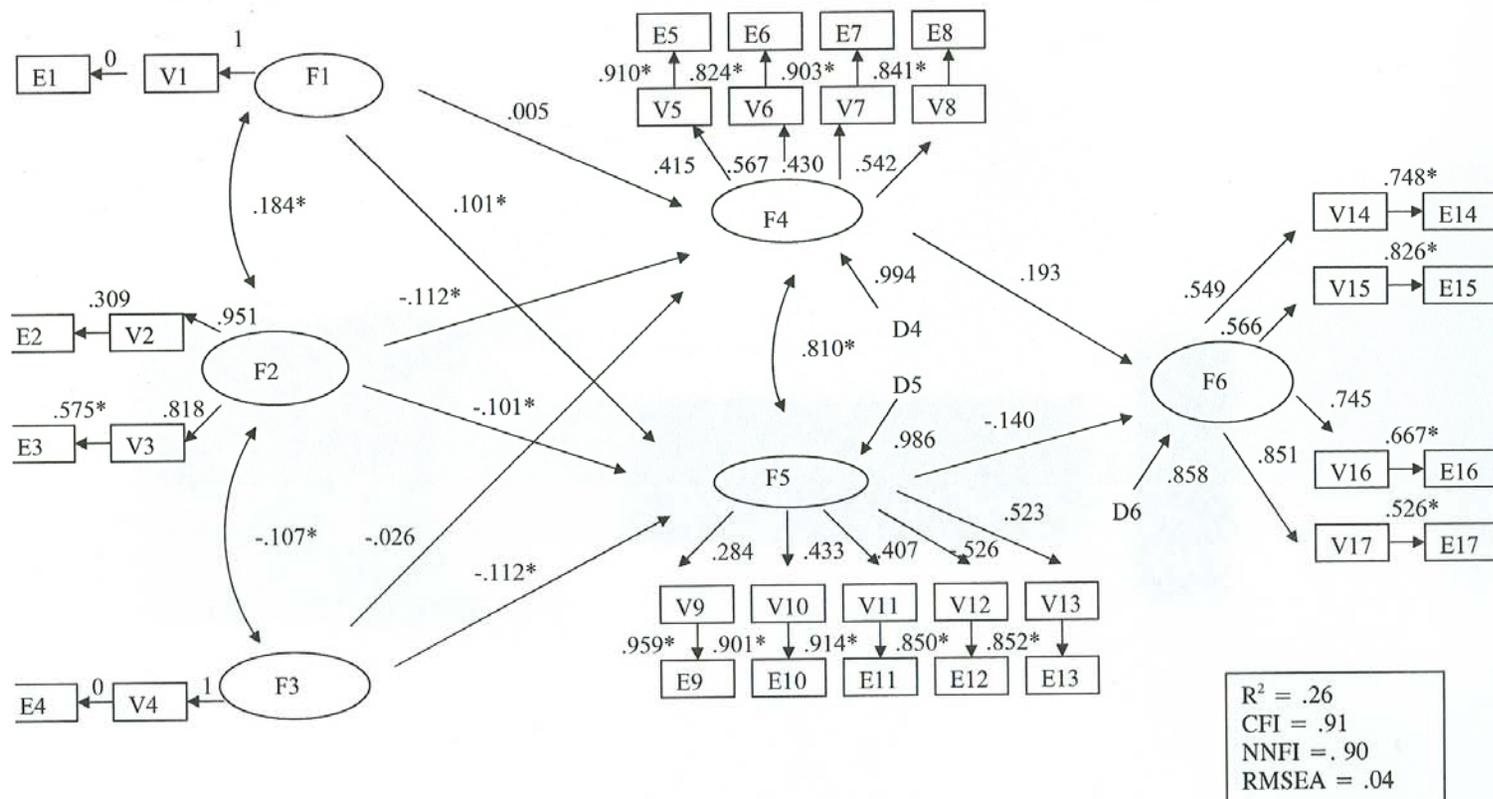
Finally, the target population of this study was Head Start families. A singular finding that held true for all families in all analyses was the influence of mothers. Head Start programmers should seize upon the opportunity to affect the parenting behaviors and attitudes of the mothers of their students. By arming parents with effective parenting practices, Head Start can create a protective buffer between the multitude of risks faced by low-income families and the children being raised in those environments.

APPENDIX A: Detailed SEM Models (see following pages)



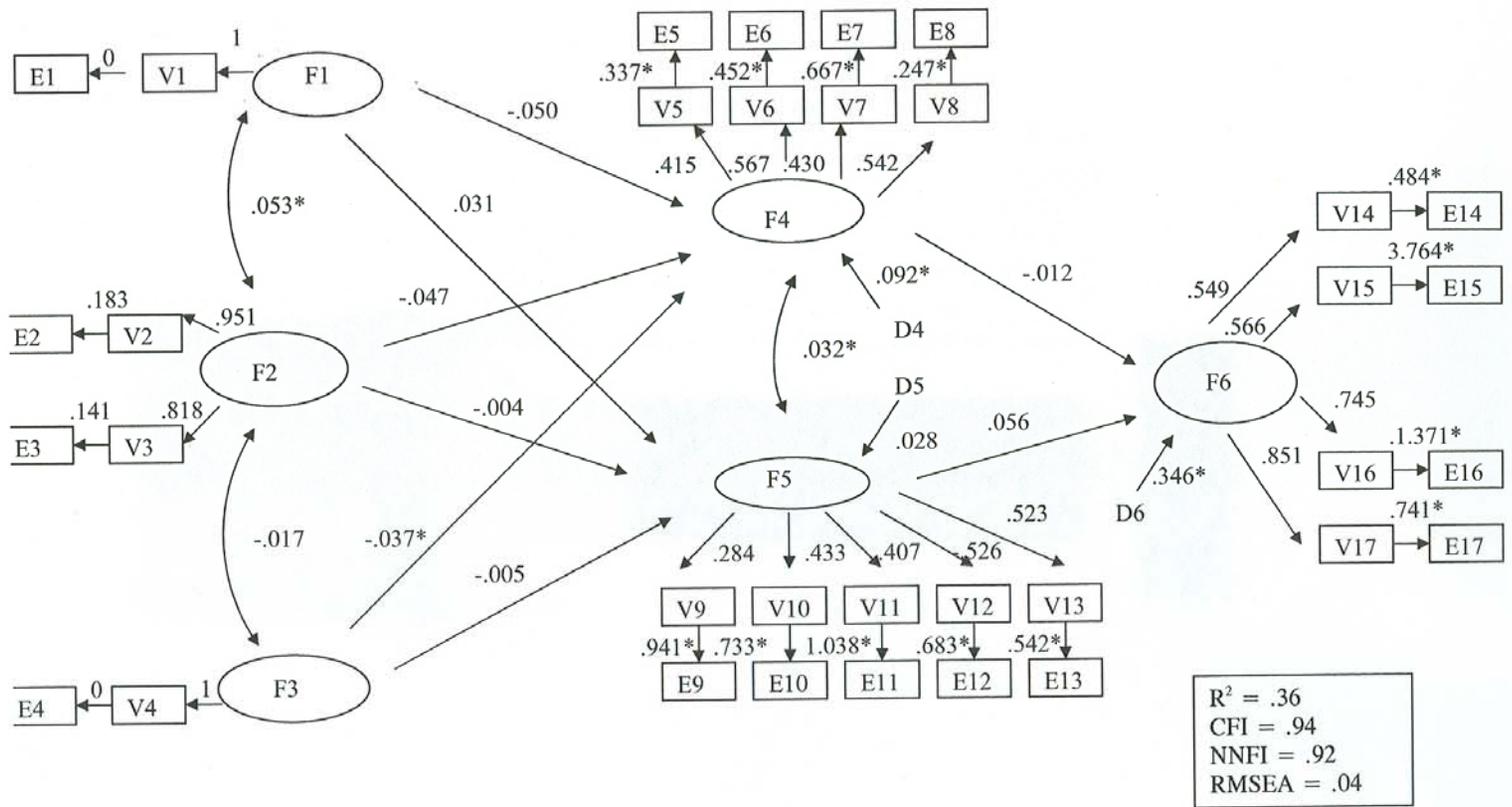
Appendix A-1: Full Sample (Standardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Maternal Race, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning



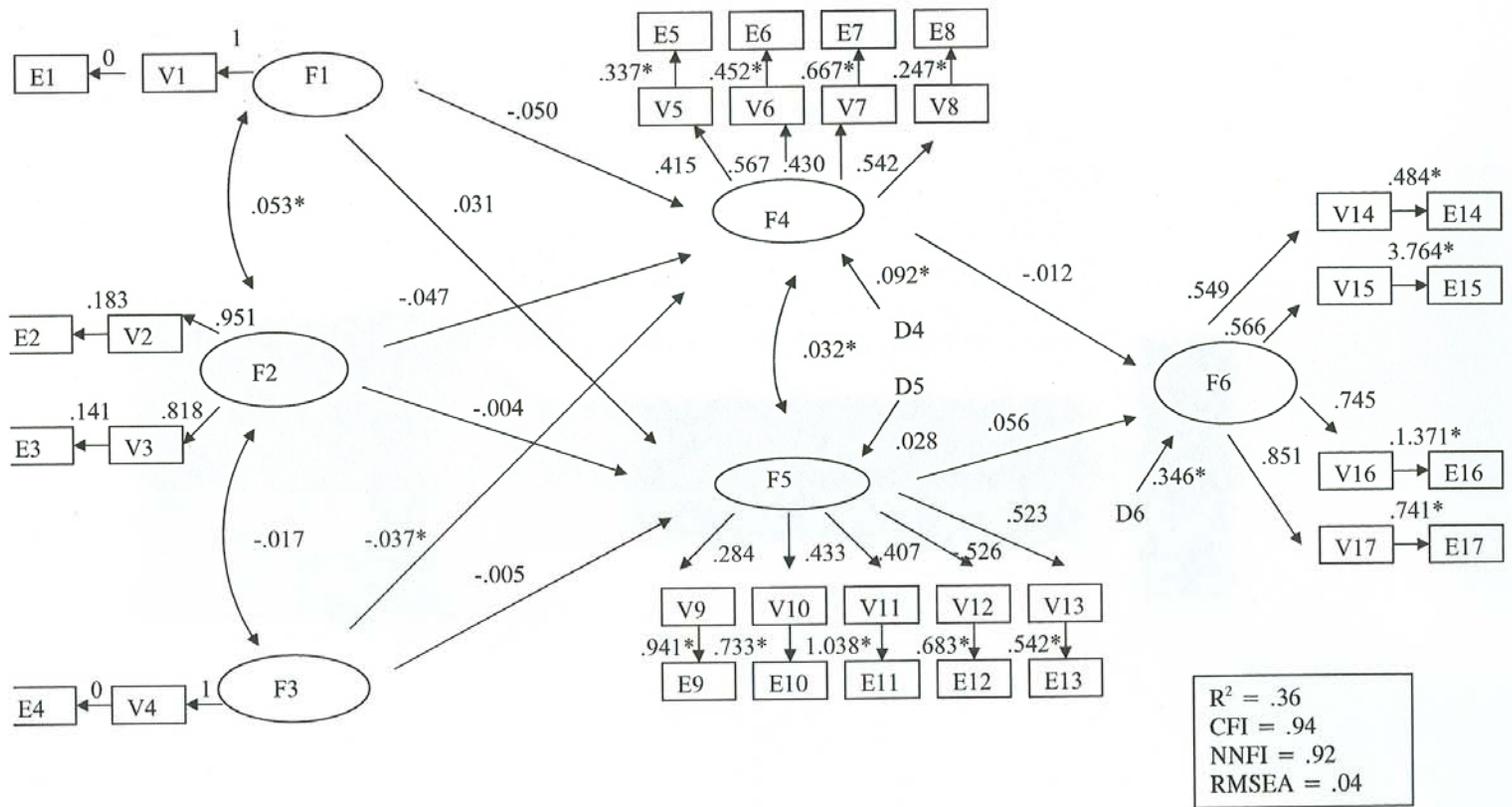
Appendix A-2: Latino Sample (Unstandardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning



Appendix A-3: White Sample (Unstandardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning



Appendix A-4: Final Multi-Group Model (Latino Coefficients in Parenthesis; Unstandardized Coefficients)

Control variables: Maternal Age, Maternal Education, Maternal Employment, Family Poverty Status, Child Age, Child Gender, Baseline Social-Emotional Functioning

APPENDIX B: COVARIANCES/CORRELATIONS

Table B-1
Covariance Matrix of SEM Variables

	CVE	SOMATIC	AFFECT	FAMSTRUC	RE VWARM
CVE	.194				
SOMATIC	.074	.859			
AFFECT	.059	.556	.593		
FAMSTRUC	-.035	-.081	-.057	.522	
REV_WARM	-.009	-.044	-.017	-.018	.477
REV_EXPLO	-.003	-.054	-.037	.022	.122
REV_EASY	-.005	-.079	-.058	-.034	.128
REV_APPRE	.005	-.002	.008	-.005	.103
REV_WARN	.005	-.026	-.012	.042	.125
REV_PUNIS	.040	.023	.064	-.028	.072
REV_DIFF	.012	-.103	-.091	-.042	.041
INDEP	-.023	.027	.007	.066	-.102
REV_FOLTH	.006	-.042	.011	-.038	.113
SOCKSKILL	-.023	-.051	-.037	.067	.003
REV_WITH	.018	-.015	.017	.055	-.055
REV_AGG	-.081	-.034	-.011	.066	.038
REV_HYP	-.021	-.025	.010	.043	.034
FPOVERTY	.005	.035	.029	-.049	-.003
CHGENDER	-.011	-.030	-.019	.009	-.004
MAT_ED	.018	-.078	-.036	-.013	.080
MAT_AGE	-.180	-.174	-.238	-.694	.155
SSKILL_T1	-.063	-.178	-.104	.128	.070
WITH_T1	-.030	.063	.083	.070	.002
AGG_T1	-.006	-.038	-.074	.060	.049
HYP_T1	-.010	-.047	-.019	.086	.058
CHILD_AGE	-.117	-.288	-.280	.226	-.210

Table B-1 Continued
Covariance Matrix of SEM Variables

	REV_EXPLO	REV_EASY	REV_APPRE	REV_WARN	REV_PUNIS
REV_EXPLO	.738				
REV_EASY	.189	.891			
REV_APPRE	.121	.133	.272		
REV_WARN	.117	.107	.074	1.001	
REV_PUNIS	.209	.054	.094	.204	1.039
REV_DIFF	.186	.139	.075	.098	.146
INDEP	-.264	-.178	-.123	-.136	-.207
REV_FOLTH	.192	.141	.116	.086	.279
SOCSKILL	.004	.019	.011	.044	.056
REV_WITH	-.002	.028	-.009	.057	.083
REV_AGG	.040	.070	.025	.028	-.052
REV_HYP	.065	.032	-.008	.095	.036
FPOVERTY	-.015	.018	.005	.021	.004
CHGENDER	-.006	.002	-.007	-.027	-.019
MAT_ED	.083	-.026	.016	-.054	.098
MAT_AGE	-.260	-.345	-.311	.146	-.415
SSKILL_T1	-.117	-.090	-.025	.133	.138
WITH_T1	-.006	-.034	-.003	.047	-.064
AGG_T1	-.004	-.010	-.014	.020	-.012
HYP_T1	.041	.053	.003	.052	.033
CHILD_AGE	-.417	-.119	-.242	.419	-.234

Table B-1 Continued
Covariance Matrix of SEM Variables

	REV_DIFF	1INDEP	REV_FOLTH	SOCSKILL	REV_WITH
REV_DIFF	1.332				
INDEP	-.218	.884			
REV_FOLTH	.392	-.204	.990		
SOCSKILL	.006	-.019	-.014	1.206	
REV_WITH	-.122	-.003	-.113	1.046	5.361
REV_AGG	-.005	-.087	-.015	1.153	1.664
REV_HYP	-.009	-.045	-.026	.921	1.773
FPOVERTY	.002	-.010	-.019	-.022	.014
CHGENDER	.033	.013	.027	-.111	-.122
MAT_ED	-.042	-.027	.028	.048	.123
MAT_AGE	.443	-.324	.038	.232	-.746
SSKILL_T1	-.117	-.122	-.133	2.801	3.031
WITH_T1	.006	.036	-.049	-.060	-.052
AGG_T1	.017	.039	.003	.034	-.043
HYP_T1	.007	.061	.075	.068	-.072
CHILD_AGE	-.228	.274	-.521	1.617	1.117

Table B-2. Correlation Coefficients for Key Constructs (unweighted data)

Variable	1	2	3	4	5	6	7	8
1. Violence Exposure	--	.17**	.06*	-.02	-.03	-.04	-.03	.08*
2. Depression Scale	--	--	-.03	.04	.05	-.02	-.09**	.05
3. Authoritative Parenting	-	--	--	-.44**	-.32**	-.70**	.03	-.05
4. Authoritarian Parenting	-	--	--	--	-.07*	-.16**	-.04	.06
5. Neglectful Parenting	--	--	--	--	--	-.10**	-.01	.00
6. Permissive Parenting	--	--	--	--	--	--	-.00	.01
7. Social Skills Scale	--	--	--	--	--	--	--	-.63**
8. Behavior Problems Scale	--	--	--	--	--	--	--	--

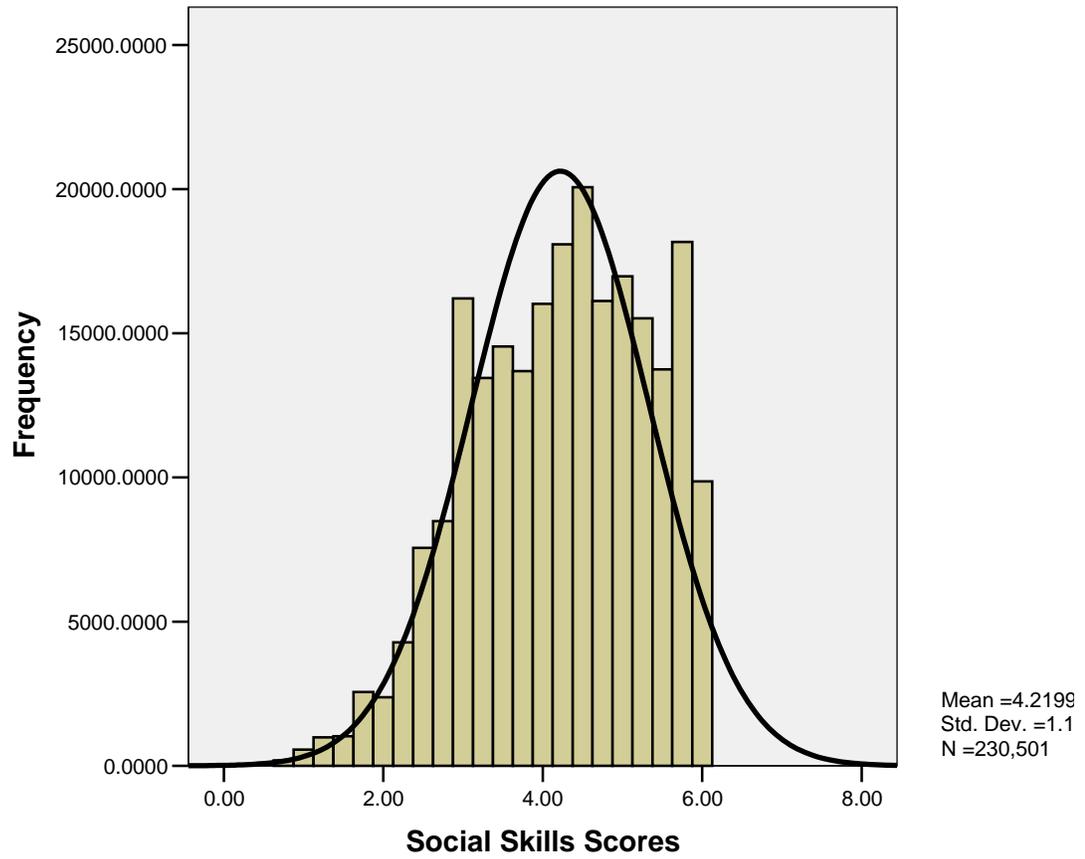
APPENDIX C: MISSING DATA ANALYSES

Table C-1
 Mean Differences for Missing and Present Families

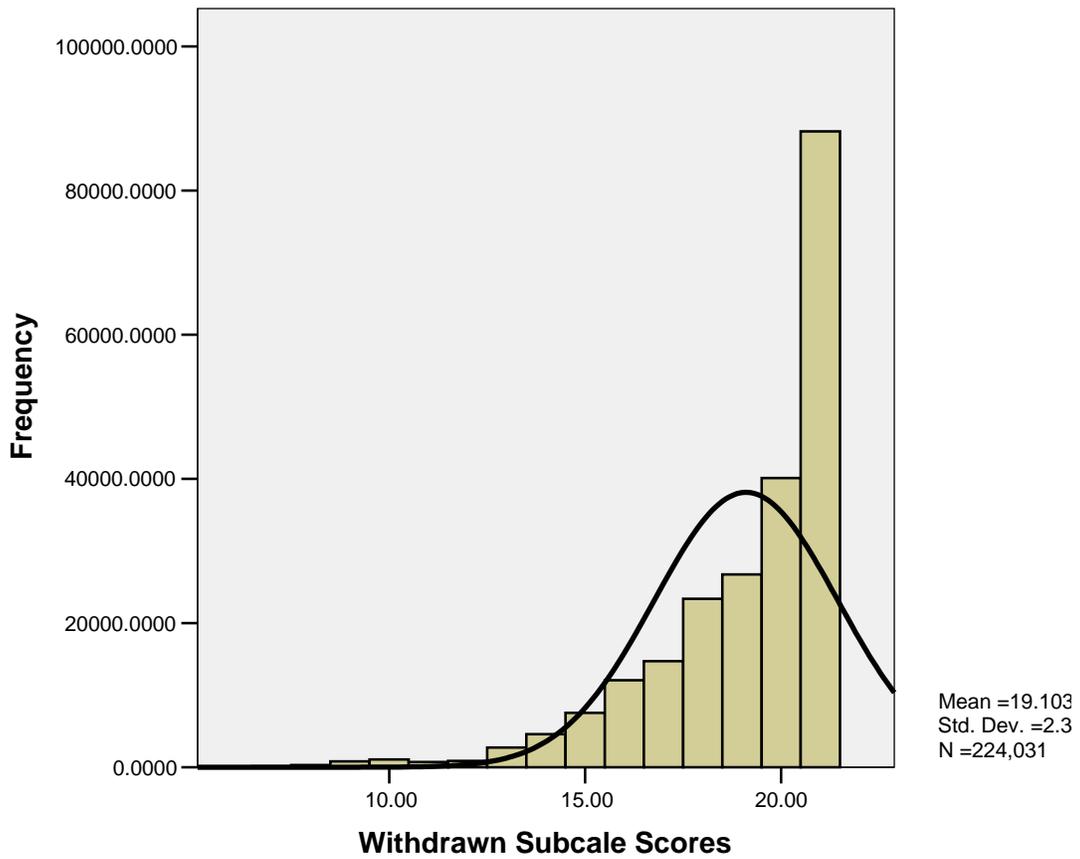
	Family Income	Maternal Age	Child Age	CES-D	CVE	Maternal Education	Employment Status
Mean (Present)	16040.80	29.41	54.22	6.68	5.57	3.06	2.53
Mean (Missing)	18301.93	30.92	55.15	7.90	5.55	3.45	2.51

APPENDIX D: Histograms

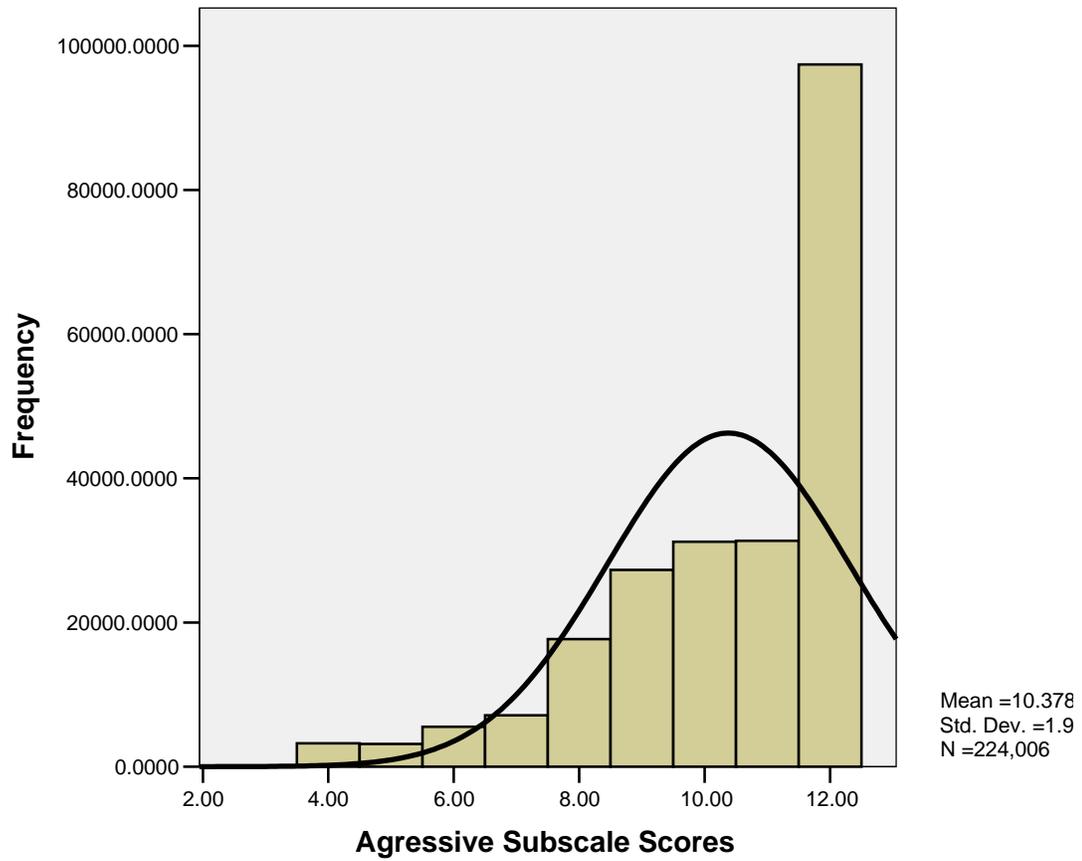
D-1: Time 2 Social Skills Rating Scale Distribution



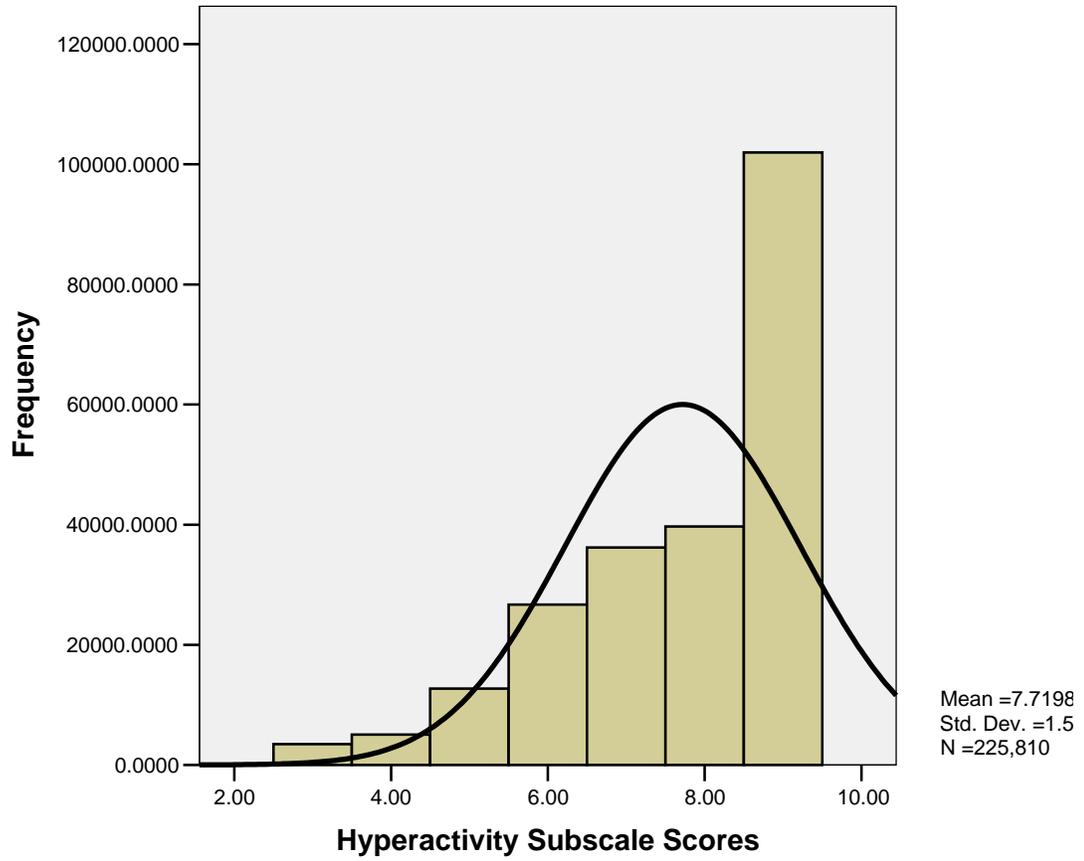
D-2: Time 2 Withdrawn Subscale Distribution



D-3: Time 2 Aggressive Subscale Distribution



D-4: Time 2 Hyperactivity Subscale Distribution



APPENDIX E: MEASURES

E-1: Family Violence Items

The next questions are about situations that can be difficult for families. I'm going to ask about things that may have happened to you or others in your household over the past year. Please remember, all of your answers are held in the strictest confidence. We will not tell anyone what you say, including Head Start.

K1. For each of the following items, please tell me how often each one happened to you during the past year. (READ ITEM) Would you say *never*, *once*, or *more than once*?

	<u>Never</u> <u>once</u>	<u>Once</u>	More than
b. I heard or saw violent crime take place in my neighborhood.....	1	2	3
d. I was a victim of violent crime in my neighborhood.....	1	2	3
e. I was a victim of violent crime in my home.	1	2	3

K6. In the last year, has [CHILD] ever been a witness to a violent crime?

- YES 1
- NO 2

K8. In the last year, has [CHILD] ever been the victim of a violent crime?

- YES 1
- NO 2

E-2: The Center for Epidemiological Studies – Depression (CES-D)

M2. I am going to read a list of ways you may have felt or behaved. Please tell me how often you have felt this way during the *past week*: *rarely or never, some or a little, occasionally or a moderate amount of time, or most or all of the time?* (CIRCLE ONE RESPONSE FOR EACH ITEM.)

	<u>Rarely or Never</u>	<u>Some or a Little</u>	<u>Occasionally or Moderate</u>	<u>Most or All</u>
a. Bothered by things that usually don't bother you.....	1	2	3	4
b. You did not feel like eating; your appetite was poor	1	2	3	4
c. That you could not shake off the blues, even with help from your family and friends.....	1	2	3	4
d. You had trouble keeping your mind on what you were doing.....	1	2	3	4
e. Depressed	1	2	3	4
f. That everything you did was an effort....	1	2	3	4
g. Fearful.....	1	2	3	4
h. Your sleep was restless.....	1	2	3	4
i. You talked less than usual.....	1	2	3	4
j. Lonely	1	2	3	4
k. Sad.....	1	2	3	4
l. You could not get "going"	1	2	3	4

E-3: Parenting Style Items

F6. Here are some statements that parents of young children say about themselves. I'm going to read the statements, and after each one, please tell me if it is exactly like you, very much like you, somewhat like you, not much like you or not at all like you.

(USE RESPONSE CARD)

	<u>Exactly like you</u>	<u>Very much like you</u>	<u>Somewhat like you</u>	<u>Not much like you</u>	<u>Not at all like you</u>
a. I control my child by warning (him/her) about the bad things that can happen to (him/her).	1	2	3	4	5
c. My child and I have warm intimate moments together.....	1	2	3	4	5
e. I encourage my child to be curious, to explore, and to question things.	1	2	3	4	5
f. I do not allow my child to get angry with me.	1	2	3	4	5
g. I am easygoing and relaxed with my child...	1	2	3	4	5
i. I make sure my child knows that I appreciate what (he/she) tries to accomplish.	1	2	3	4	5
j. I have little or no difficulty sticking with my rules for my child even when close relatives (including grandparents) are there.	1	2	3	4	5
k. I encourage my child to be independent of me.	1	2	3	4	5
l. Once I decide how to deal with a misbehavior of my child, I follow through on it.....	1	2	3	4	5

E-4: Social Skills Items

Please describe this child according to how often he/she has behaved in the following ways during the past month, from “never,” to “sometimes” to “very often.” For each item, circle only one code.

	Never	Sometimes	Very often
1. Follows the teacher's directions.....	1	2	3
2. Makes friends easily	1	2	3
3. Does not get upset when teased by classmates	1	2	3
4. Joins an ongoing activity or group without being told to do so	1	2	3
5. Invites others to join in activities	1	2	3
6. Waits her or his turn in games or other activities.....	1	2	3
7. Helps in putting work materials or center property away	1	2	3
8. Gives compliments to classmates.....	1	2	3
9. Says nice things about herself or himself when appropriate	1	2	3
10. Follows the rules when playing games with others	1	2	3
11. Uses free time in acceptable ways.....	1	2	3
12. Accepts classmates' ideas for sharing and playing.....	1	2	3

E-5: Total Behavior Problems Items

Please describe this child according to how true each of these statements has been during the past month, from “not true” to “somewhat or sometimes true” to “very true or often true.” For each item, circle only one code.

	Not true	Somewhat or sometimes true	Very true or often true
1. Acts too young for his or her age	1	2	3
2. Can't concentrate, can't pay attention for long ..	1	2	3
3. Disobeys rules or requests	1	2	3
4. Disrupts ongoing activities	1	2	3
5. Hard to understand what he or she is saying	1	2	3
6. Hits or fights with others	1	2	3
7. Keeps to herself or himself; tends to withdraw	1	2	3
8. Lacks confidence in learning new things or trying new activities	1	2	3
9. Is nervous, high-strung, or tense.....	1	2	3
10. Is very restless, fidgets all the time, can't sit still	1	2	3
11. Often seems sleepy or tired in class	1	2	3
12. Has temper tantrums or hot temper	1	2	3
13. Often seems unhappy, sad, or depressed	1	2	3
14. Worries about things for a long time	1	2	3

APPENDIX F: Indicator Variables

Table F-1. Indicators for Latent Constructs

<u>Latent Constructs</u>	<u>Number of Indicators</u>
Maternal Psychological Functioning	2
<p><i><u>Somatic/Retarded Activity</u></i></p> <p>Bothered by things that usually don't bother you You did not feel like eating; your appetite was poor You had trouble keeping your mind on what you were doing Fearful You talked less than usual Lonely Sad</p> <p><i><u>Depressed Affect</u></i></p> <p>That you could not shake off the blues, even with help from your family and friends Depressed That everything you did was an effort Your sleep was restless You could not get "going"</p>	
Control	5
<p>I control my child by warning (him/her) about the bad things that can happen to (him/her) I teach my child that misbehavior or breaking the rules will always be punished one way or another I have little or no difficulty sticking with my rules for my child even when close relatives (including grandparents) are there I encourage my child to be independent of me Once I decide how to deal with a misbehavior of my child, I follow through on it.</p>	
Warmth	4
<p>My child and I have warm intimate moments together I encourage my child to be curious, to explore, and to question things I am easygoing and relaxed with my child I make sure my child knows that I appreciate what (he/she) tries to accomplish</p>	

Social Skills

Follows the teacher's directions
Makes friends easily
Does not get upset when teased by classmates
Joins an ongoing activity or group without being told to do so
Invites others to join in activities
Waits her or his turn in games or other activities
Helps in putting work materials or center property away
Gives compliments to classmates
Says nice things about herself or himself when appropriate
Follows the rules when playing games with others
Uses free time in acceptable ways
Accepts classmates' ideas for sharing and playing

Withdrawn Behaviors

Hard to understand what he or she is saying
Keeps to herself or himself; tends to withdraw
Lacks confidence in learning new things or trying new activities
Is nervous, high-strung, or tense
Often seems sleepy or tired in class
Often seems unhappy, sad, or depressed
Worries about things for a long time

Aggressive Behaviors

Acts too young for his or her age
Can't concentrate, can't pay attention for long
Is very restless, fidgets all the time, can't sit still

Hyperactive Behaviors

Disobeys rules or requests
Disrupts ongoing activities
Hits or fights with others
Has temper tantrums or hot temper

APPENDIX G: DATA USE

G- 1: Interuniversity Consortium for Political and Social Research (ICPSR)



Head Start Family and Child Experiences Survey (FACES) Data-use Agreement

The Head Start Family and Child Experiences Survey (FACES) is an ongoing series of longitudinal studies of Head Start program characteristics and child outcomes, using nationally representative samples of Head Start programs, children, and families. The following data are currently available:

- Head Start Family and Child Experiences Survey (FACES), 1997 Cohort
- Head Start Family and Child Experiences Survey (FACES), 2000 Cohort

FACES is conducted under a contract with Westat, Inc., with Xtria and CDM Group as their subcontractors, to collect information on Head Start Performance Measures for the Office of Planning Research and Evaluation (OPRE), Administration for Children and Families (ACF), United States Department of Health and Human Services. FACES data are distributed through Child Care and Early Education *Research Connections*.

Access to these datasets is limited to approved researchers who agree to the terms and conditions listed below. A copy of this agreement form must be **signed** and **returned** to *Research Connections* before data will be released. In addition to a completed data-use agreement, applicants are required to submit for review a **letter summarizing research interests**.

If you are a student who wishes to use these data for your dissertation or a class project, in addition to the above items, please submit a photocopy of your student ID, and ask your advisor or professor to co-sign this form in the space provided.

Completed application materials should be mailed to:

Research Connections
ICPSR
Attention: Shawn Marie Pelak
P.O. Box 1248
Ann Arbor, MI 48106-1248

Questions about this application may also be sent to the above address or submitted via email to contact@childcareresearch.org.

I agree to the following terms and conditions:

1. The FACES data will be used solely for the purpose of non-commercial, scientific and public policy research and teaching. Faculty members who desire to share these data with students bear full responsibility for ensuring that all conditions of this agreement are met by the students.
2. No attempt will be made to identify any individual person, family, household, classroom, center, or organization. Any attempt to use these data to identify individuals or institutions is a violation of federal law.

3. To acknowledge in any publication, whether printed, electronic, or broadcast, based wholly or in part on these data, both the original depositors, the funding agency, and *Research Connections*. To declare in any such work that those who carried out the original collection and analysis of the data bear no responsibility for their further analysis or interpretation.
4. To deposit with *Research Connections* two copies of any published work or report based wholly or in part on these data.
5. Not to make any claim to copyright ownership of the materials provided, not to distribute copies of the materials to others, nor to make copies.
6. To store the data securely and to restrict access to registered users who have received written permission from *Research Connections* for the specified purposes. In particular, I will not store the data on a file server or in any other computational domain where it could be accessed by others.
7. To notify *Research Connections* of any errors discovered in the materials.
8. To accept that *Research Connections* and the depositor of the materials supplied bear no legal responsibility for their accuracy or comprehensiveness. To indemnify and hold harmless Westat, Inc., *Research Connections*, U.S. Department of Health and Human Services, and any employees or agents of the same against any and all claims for damages, demands, and all other actions and all expenses and costs arising from such demands whatsoever arising from the release of the materials.

I understand that violation of any of the above-mentioned conditions will be a breach of this Data-use Agreement, will constitute unethical professional practice, and may subject me to legal action under applicable statutes and regulations.

Applicant

Name: T'Pring R. Westbrook
 Signature: T'Pring R. Westbrook
 Date Signed: 9/13/06
 Organization: University of Maryland
 Name of Co-signer (if applicable): Brenda Jones Harden, PhD
 Signature of Co-signer (if applicable): Brenda Jones Harden, Ph.D.

Representative of *Research Connections*

Name: ~~Peter Grant~~ PETER GRANDA
 Signature: Peter Granda
 Date Signed: Sept. 22, 2006

G-2: INSTITUTIONAL REVIEW BOARD (IRB) APPLICATION

UNIVERSITY OF MARYLAND, COLLEGE PARK
Institutional Review Board

Initial Application for Research Involving Human Subjects

Please complete this cover page AND provide all information requested in the attached instructions.

Name of Principal Investigator

(PI) or Project Faculty Advisor Brenda Jones Harden Tel. No 301-405-2580
(NOT a student or fellow; must be UMD employee)

Name of Co-Investigator (Co-PI) _____ Tel. No _____

Department or Unit Administering the Project

E-Mail Address bjharden@umd.edu E-Mail Address of Co- _____

Where should the IRB send the approval letter? 3304 Benjamin Bldg.

Name of Student Investigator T'Pring R Westbrook Tel. 301-405-3860

E-Mail Address of Student Investigator twestb@umd.edu @ _____

Check here if this is a student master's thesis or a dissertation research project XX

Project Duration (mo/yr – mo/yr) 9/06 -- 9/07

Project Mediating Influence of Parenting Styles Between Exposure to Violence, Depression and Child Outcomes: A Multigroup Analysis

Sponsored Project Data Funding **ORAA Proposal** _____

(PLEASE NOTE: Failure to include data above may result in delay of processing sponsored research award at ORAA.)

Vulnerable Populations: The proposed research will involve the following (Check all that apply): pregnant women , human fetuses , neonates , minors/children , prisoners , students , individuals with mental disabilities , individuals with physical disabilities

Exempt or Nonexempt (Optional): You may recommend your research for exemption or nonexemption by completing the appropriate box below. For exempt recommendation, list the numbers for the exempt category(s)
 Exempt---List Exemption Category 4 Or Non-Exempt

If exempt, briefly describe the reason(s) for exemption. Your notation is a suggestion to the IRB Manager and IRB Co-Chairs.
Research involves the study of existing data that are publicly available.

Date _____ Signature of Principal Investigator or Faculty Advisor (PLEASE NOTE: Person signing above accepts responsibility for the research even when data collection is performed by other)

Date _____ Signature of Co-Principal Investigator

Date _____ Signature of Student Investigator

Date _____ REQUIRED Departmental Signature _____ Title _____

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