AN ECOLOGICAL INVESTIGATION OF CONTEXTUAL FACTORS AND COGNITIONS THAT IMPACT PARENTAL RESPONSIVITY FOR LOW-INCOME MOTHERS OF PRESCHOOL-AGE CHILDREN

by

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DISSERTATION ABSTRACT

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Title: An Ecological Investigation of Contextual Factors and Cognitions That Impact Parental Responsivity for Low-Income Mothers of Preschool-Age Children

Parental responsivity can profoundly influence developmental trajectories and child outcomes. This study aimed to learn more about the contextual risk and protective factors that influence parental self-efficacy (PSE), depression, parenting stress, and subsequent parental responsivity in low-income mothers of preschoolers. Two models predicting responsivity were tested using longitudinal data (N = 307) from the Early Steps Multisite Study. Predictors included: parent ethnic discrimination, SES discrimination, neighborhood danger, satisfaction with social support, overall life satisfaction, neighborhood connectedness, PSE, depression, and parenting stress related to daily hassles.

Structural equation modeling was used to test for overall model fit, as well as direct and indirect relations between the variables over three time points. Model 1 controlled for maternal depression, while Model 2 incorporated maternal depression into the model as a predictor at Time 1. Two post hoc models that included depression at two time points were also tested. Models 1 and 2 adequately fit the data, while the post hoc models fit the data very well. Results indicated that discrimination and perceptions of danger in the neighborhood were related to lower satisfaction with social support, lower overall life

satisfaction, and lower feelings of connectedness with the neighborhood. Adverse factors also predicted maternal responsivity at Time 3. Protective factors were predictive of high PSE and responsivity over time. Earlier experiences of depression were predictive of parenting stress and depression over time. Implications for practice and future research are discussed.

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CHAPTER I

INTRODUCTION

Parenting is a significant responsibility that requires management of multiple stressors, as well as adaptation to various demands on mental, emotional, and physical energy. The manner in which parents interact with their children, as well as their level of responsivity, can profoundly influence developmental trajectories and child outcomes. For example, evidence suggests that parenting that is punitive, harsh, and neglectful may lead to early behavior, social, and emotional problems (Chang, Schwartz, Dodge, & McBride-Chang, 2003; Heidgerken, Hughes, Cavell, & Willson, 2004). Alternatively, responsive parenting that involves warm, attentive parent-child interactions is associated with a reduced risk of behavior problems, increased language development, and school readiness (Dishion et al., 2008; Lunkenheimer et al., 2008). Responsive parenting also serves as a protective factor for families faced with contextual risks, such as financial strain, limited resources, and dangerous living situations (Patterson, Reid, & Dishion, 1992).

Given the importance of parenting practices on family functioning and child outcomes, it is important to understand the factors that guide parenting behavior. Research has begun to focus more heavily on subjective parent experiences and cognitions that mediate behavior. Parental self-efficacy (PSE) and perceived stress have emerged in the literature as two interrelated and powerful cognitions that contribute to parenting practices (Abidin, 1992; Jones & Prinz, 2005; Kwok & Wong, 2000). PSE is defined as the belief and confidence of a caregiver to accomplish specific parent-related

goals and positively influence a child's development (Bandura, 1989; Jones & Prinz, 2005). High levels of PSE have shown to be protective in that it promotes parental responsivity, improved mental health, and lower stress levels due to increased coping abilities (Coleman & Karraker, 1997; Kwok & Wong, 2000; Raver & Leadbeater, 1999; Teti & Gelfand, 1991).

Stress, negatively correlated with PSE, is a central construct in Abidin's (1992) model of parenting. In this model, high levels of stress directly and indirectly lead to dysfunctional parenting and disengagement from the parenting role. Stress is a broad construct that can apply to multiple life domains, and can apply specifically to the domain of parenting. Parenting-related stress refers to perceived stress that can occur as a result of everyday parenting hassles or tasks (e.g., mealtime problems, difficulty finding babysitters, scheduling problems, etc., Crnic & Greenberg, 1990). Parenting stress is a function of both the frequency with which a specific parenting task occurs and the degree to which the task is bothersome to a parent. Stress and problems in other domains of life can make a parent less able to manage stress related specifically to parenting. C*ompounded stress* (i.e., the experience of multiple sources of stress in various domains) is considered unique in that it may have a cumulative effect over time. Through its toll on emotional and physical well-being, compounded stress can reduce the caregiver's ability to parent effectively and increase the risk of child neglect (Abidin, 1992; Mash & Johnston, 1990). Families with multiple risk factors, such as low-income *and* single-parent families, are at an increased risk for experiencing compounded stress and associated negative family outcomes (Ardelt & Eccles, 2001; Natsuaki et al., 2007; Raver & Leadbeater, 1999).

Given the consequences of limited parental responsivity on child development, it is important to explore contextual factors that may serve to shape parent cognitions (i.e., PSE, parenting stress, and depression) and subsequent parenting behaviors. Bronfenbrenner's (1979) ecological model provides a helpful framework for conceptualizing the many external systems (e.g., socio-cultural contexts, economic status, neighborhood settings, community norms, schools, workplaces, public policy, discrimination practices) that can influence the family system. The relationships between the family and these systems are bi-directional and mutually influential. By exploring the environmental and individual contexts that influence parent functioning, it can be better understood how to support parents as they care for their children.

Experiences of discrimination and oppression are unique environmental stressors that are chronic, pervasive, and capable of affecting overall well-being. The harmful effects of discrimination include reports of high stress levels, maladaptive coping, low self-esteem, and health problems (Ong, Fuller-Rowell, & Burrow, 2009; Williams & Williams-Morris, 2000). The literature is sparse, however, with respect to how discrimination experiences due to ethnicity or income might directly and indirectly impact parent cognitions, belief systems, and parenting behavior. It is important to examine how adverse factors such as discrimination and neighborhood settings can influence parenting responsivity, especially during the preschool years. Additionally, it is important to examine the role of protective factors, such as satisfaction with social support, overall life satisfaction, and connection to one's neighborhood, in mediating the relationship between adverse factors and parenting.

The purpose of this study was to explore the relationships between adverse factors (discrimination due to ethnic group membership and socio-economic status (SES); neighborhood danger), protective factors (satisfaction with social support; overall life satisfaction; neighborhood connectedness), depression, PSE, parenting-related stress, and parental responsivity for low-income mothers of preschool age children. A central goal of this study was to learn more about the contextual factors that influence maternal self-efficacy, parenting stress, and parental responsivity. Existing data from the longitudinal Early Steps Multisite Study (Shaw, Dishion, Supplee, Gardner, & Arnds, 2006) was used.

CHAPTER II

LITERATURE REVIEW

This chapter is organized as follows: First, I review literature on responsive parenting and the contribution of proactive parenting on child outcomes. I then highlight the benefits of involved parenting behavior during the preschool years. Next, I review relevant literature on parent cognitions that may serve as mediators between contextual factors and parental responsivity, including PSE, parenting stress, and depression. Lastly, I review literature on contextual factors that may affect parenting, including adverse and protective factors. The adverse factors discussed include ethnic discrimination, discrimination due to SES, and neighborhood danger. Protective factors include satisfaction with social support, overall life satisfaction, and feelings of neighborhood connectedness. Throughout this chapter, I also attend to the role of ethnic group membership and SES in parenting young children.

Parental Responsivity

Given the powerful effects of unhealthy and coercive parenting practices on child and family functioning, it is important that parents learn how to implement proactive parenting strategies (Patterson, 1982). Research indicates that responsive and proactive parenting strategies produce positive outcomes, including decreased conduct problems, language development, school readiness, and academic success (Dishion et al., 2008; Gardner, Shaw, Dishion, Burton, & Supplee, 2007; Landry, Smith, Swank, Assel, & Vallet, 2001; Lunkenheimer et al., 2008).

Proactive parenting refers to many different behaviors such as responsiveness, praise, warmth, monitoring, and positive reinforcement. Additionally, proactive parenting involves actively attending to the child, structuring the environment to foster learning, and a focus on prevention of problem behaviors (Dishion et al., 2008). Rather than punishing a child for problem behavior, strategies include: ignoring, distracting the child, reinforcing appropriate behaviors, teaching new skills and behaviors, and teaching others how to respond to the child appropriately.

Evidence suggests that a lack of maternal responsivity early in development can have negative effects that persist far into childhood. For example, Wakschlag and Hans (1999) found that an absence of maternal interaction and responsiveness during infancy increased the risk of disruptive behavior problems in middle childhood, even after controlling for concurrent parenting and established risk factors. Such findings underscore the importance of early parenting for developmental pathways that lead to problematic behavior later in life. Additionally, such parenting practices may be more likely to occur in a family context in which parental stress, anxiety, and depression are present (Wakschlag & Hans, 1999).

Studies using data from the Early Steps Multisite Study found that parenting behavior is amenable to change through a brief, family-centered intervention called The Family Check-up (FCU) and leads to improved child outcomes (Dishion & Kavanagh, 2003). For example, in a low-income sample of 120 mother-son dyads, Shaw et al. (2006) found that maternal responsivity increased from child ages 2 to 3 for mothers in the FCU intervention. For control families, maternal responsivity decreased from ages 2 to 4. Maternal behaviors included keeping the child in visual range, interacting with the child

during housework, and structuring play environments. With the same sample, Gardner et al. (2007) found that the FCU led to an increase in parenting skills among parents of 3 year-olds. In turn, this change resulted in a reduction of problem behavior in 2 to 3 year-olds. Additionally, Lunkenheimer et al. (2008) examined the longitudinal effects of the FCU on parenting and children's school readiness. Parents randomly assigned to the intervention showed improvements in involved parenting from child ages 2 to 3, which in turn promoted children's inhibitory control and language development from ages 3 to 4. Such findings suggest that interventions that teach and support parenting skills can serve to improve parent-child relations and outcomes, thus setting the stage for a cycle of positive interactions.

It is important to note that there are times when *too much* parental involvement (i.e., over-involved parenting) can lead to negative outcomes (Assel, Landry, Swank, Smith, & Steelman, 2003; Shaw, Keenan, Vondra, Delliquadri, & Giovannello, 1997). For example, Assel et al. (2003) conducted a study on maternal directiveness and found that providing too much direction during a time when a child would benefit from exploration led to negative effects on children's visual-spatial and executive processing skills at 3 years old. It was also found that over-directive interactions at age 2 continued well into childhood and resulted in reduced problem solving and math ability (Assel et al., 2003). Thus, it is important to realize that while parental responsivity that involves appropriate structure and scaffolding is beneficial during certain developmental stages, over-involved parenting can stifle important opportunities for exploration and learning. Parental responsivity as conceptualized in the current study refers to practices that are supportive and appropriate.

Not only can parenting responsivity be impacted by variables such as stress and PSE, but also by the interplay of contextual factors such as SES and ethnicity. In addition to parent characteristics, research has also focused on the ways that differences in ethnic/cultural background and SES (e.g., income, parent education level) impact parenting goals, strategies, and styles (Hill, 2006). Although it is commonly assumed that ethnic group or SES level correlates with a specific parenting approach, research suggests that it is the interplay of these various factors that predict parenting. For example, a longitudinal design was used to study the unique and interactive effects of SES and ethnicity on parenting in an economically diverse group of African Americans and European Americans (Hill, 2006). Results indicated that higher levels of maternal rejection were present when high SES was coupled with high stress levels in the European American group. In contrast, for African Americans, high SES and high stress resulted in lower levels of maternal rejection. Meanwhile, the interaction between low income and high stress for African American groups produced less involved parenting than in the European American group. Such findings suggest that it is important to attend carefully to factors such as ethnicity and SES in research on parenting behaviors. This is especially important for understanding ways that parents can protect their children from contextual risk factors, such as low SES or dangerous neighborhoods. Consequently, culturally sensitive and appropriate interventions and programs can be implemented that can benefit families of different ethnic and SES backgrounds.

The Importance of the Preschool Years

The current study focuses specifically on parenting behavior during the preschool years (i.e., child ages 3, 4, 5). This time period is one in which parenting practices critically influence developmental trajectories and can be used to effectively prevent and treat emerging problems (Barlow & Parsons, 2007; Bayer et al., 2011). Internalizing and externalizing problem behavior are among the most common childhood concerns and impact 15% of children between the ages of 18 months and 5 years (Bayer et al., 2011). Such problems can negatively impact family functioning, as well as child outcomes in the areas of school performance, social competence, peer relations, somatic problems, and social-emotional problems later in life and into adulthood (Bayer et al., 2011; Tervo, 2007).

Parenting practices during this period can either serve to prevent problem behavior, or contribute to the perpetuation of problem behaviors (Bayer, Hiscock, Ukoumunne, Price, & Wake, 2008; Bayer & Sanson, 2003; Rapee, Schniering, & Hudson, 2009; Wakschlag & Hans, 1999). For example, harsh and inconsistent discipline with children with a disinhibited temperamental style can result in externalizing problems, which can then perpetuate coercive parenting cycles. Parents who respond with overprotection or harsh discipline with children with a more inhibited temperamental style can result in internalizing problems (Bayer & Sanson, 2003). Providing parents with parenting support is extremely important given the preponderance of evidence that suggests that children's problem behaviors in early childhood can be improved through positive parenting practices (Gardner et al., 2007; Lunkenheimer et al., 2008).

As discussed by Bayer et al. (2011), the preschool age provides a unique opportunity for implementing cost-effective and wide-scale interventions that can teach parents skills for promoting mental health in their families, especially for at-risk families. Barlow and Parsons (2007) conducted meta-analyses of randomized trials of parenting interventions for early child externalizing difficulties and found substantial effect sizes for parenting interventions on child behavior outcomes. Additionally, early childhood interventions that focused on cognitive and social stimulation (including preschools that provided appropriate care-giving) have been shown to improve school readiness, early academic achievement, and school competence (Reynolds, 1994; Schweinhart, Barnes, & Weikart, 1993). Early childhood interventions have also been related to longer-term effects, such as increased employment over time and reduced school dropout and delinquency (Schweinhart et al., 1993).

Although parenting is not the only risk factor associated with development of problems in children, parenting practices can result in positive outcomes when addressed early. For these reasons, it is important to further study the factors that impact parenting behavior in early childhood. The preschool years present a unique window of opportunity for shaping child behavior and positive long-term outcomes through positive parenting practices, especially under adverse or stressful conditions.

Parental Self-Efficacy

A concept first introduced by Bandura (1977), self-efficacy refers to a feeling of confidence in the ability to successfully carry out a task or achieve a goal. Self-efficacy is closely related to the motivation, cognitive resources, and behaviors needed to produce

wanted outcomes (Ozer & Bandura, 1990). Parental self-efficacy (PSE) is specific to the domain of parenting and influences the likelihood that a parent will persist in the face of parenting-related difficulties (Bandura, 1989; Jones & Prinz, 2005). An emerging body of literature highlights the powerful role of PSE as a protective factor that directly and indirectly influences parenting behavior, emotional well-being, and child outcomes (Coleman & Karraker, 2003; Teti & Gelfand, 1991). A parent who feels confident to adequately care for a child is more likely than a parent with low PSE to respond to stressful experiences with perseverance, proactive parenting, controlled emotional arousal, problem-focused coping mechanisms, and the belief that problems are challenges rather than threats (Ardelt & Eccles, 2001; Chwalisz, Altmaier, & Russell, 1992; Coleman & Karraker, 2000). As a result, parents with high PSE may perceive parent-related tasks as less stressful than parents with low PSE, and may experience more positive parenting outcomes (Bandura, 1989). Parents who feel inefficacious at caring for a child in the face of new problems or contextual challenges may be less likely to attempt to engage in effective problem solving techniques, and more likely to give up when initial efforts are unsuccessful (Bandura, 1977). Low PSE parents are also more likely to experience stress and anxiety, take responsibility for more failures than successes, appraise problems as threats rather than challenges, and engage in passive coping (Kwok & Wong, 2000; Wells-Parker, Miller, & Topping, 1990).

Self-efficacy expectations are derived from four sources of information: performance accomplishments, vicarious learning, verbal persuasion, and physiological arousal (Bandura, 1977, 1997). With respect to PSE, *performance accomplishments* refer to situations in which parenting challenges are successfully managed (e.g., correction

leads to improved child behavior), thereby increasing parent confidence that unforeseen obstacles can be dealt with effectively in the future. Performance accomplishments help parents visualize success in the parenting role and can lead to more attempts at dealing with problems, as well as more successful outcomes (Bandura, 1989). Failures to manage parenting challenges, such as child externalizing behavior (e.g., hitting and lying), may decrease PSE and result in visualization of failures. Performance accomplishments are considered to be the greatest influence on self-efficacy (Bandura, 1997).

Second, *vicarious learning* refers to observation of others modeling parenting skills (Bandura, 1977). Observation of ineffective models may decrease PSE, while effective models may lead a caregiver to feel better prepared to handle similar situations successfully. Third, parents who receive verbal feedback and encouragement (i.e., *verbal persuasion*) from supports like friends, family, or healthcare providers may feel more confident that they have the skills needed to care for their child. Alternatively, criticism and blaming may decrease such confidence. The fourth influence on PSE is *physiological arousal* (e.g., increased anxiety, accelerated heart rate), which gives rise to cognitive appraisals (unsolvable threat versus manageable challenge) of a situation that can serve to increase stress and undermine confidence for dealing with parenting challenges. Alternatively, controlled physiological responses can reduce avoidant behavior and contribute to performance accomplishments that increase PSE (Ardelt & Eccles, 2001; Bandura, 1989, 1997). Parents with higher levels of PSE have been shown to experience lower levels of negative emotional arousal when engaged in a challenging parenting task than parents with low PSE (Jerusalem & Mittag, 1995).

PSE has many benefits for parents' mental health and is correlated with overall emotional well-being. Parents with high levels of PSE are more likely to experience overall personal satisfaction and lower levels of stress (Coleman & Karraker, 2003). They are also more likely to engage in active coping and problem solving when difficulties arise (Chwalisz et al., 1992). Alternatively, parents with low PSE are more likely to experience significant distress. For example, a study found that mothers with low PSE were more likely to experience symptoms of depression and stress, which translated into less effective parenting (Fox & Gelfand, 1994). PSE also has been linked to low levels of parent satisfaction, feelings of helplessness, negative affect, elevated arousal, and the tendency to focus on relationship difficulties (Bugental, Blue, & Cruzcosa, 1989; Kwok & Wong, 2000; Teti & Gelfand, 1991).

Evidence indicates a strong relationship between PSE and adaptive parenting and competence. Parents with low PSE may be less motivated and less likely to implement new parenting techniques. Mothers with high levels of PSE, however, are more likely to engage in promotive strategies. Promotive strategies are techniques that prevent the likelihood of negative events and experiences from occurring, and that provide opportunities for learning and skill-building (Ardelt & Eccles, 2001; Elder, Eccles, Ardelt, & Lord, 1995). For example, promotive strategies include structuring children's environments, designing activities, seeking out extracurricular activities, highlighting the child's strengths, and teaching the child ways to stay safe in an unsafe community. PSE has also been linked to positive interactions, maternal warmth, limit-setting, nonpunitive caretaking, acceptance, monitoring, and overall responsivity (Ardelt & Eccles, 2001; Izzo, Weiss, Shanahan, & Rodriguez-Brown, 2000; Jones & Prinz, 2005; Mash &

Johnston, 1983). In some studies, parents' PSE increased after participating in training interventions that promoted positive parent-child relationships and focused on supporting parents in increasing their self-efficacy (Gross, Fogg, & Tucker, 1995; Tucker, Gross, Fogg, Delaney, & Lapporte, 1998). Interventions that improve PSE have been found to be especially effective for families living in stressful environments and with limited access to resources (Ardelt & Eccles, 2001; Teti & Gelfand, 1991). Interventions that have resulted in increased PSE have also resulted in promotive parenting strategies, reduced child problem behavior, and successful child academic development (Gross et al., 1995; Miller-Heyl, MacPhee, & Fritz, 1998; Tucker et al., 1998; Weaver, Shaw, Dishion, & Wilson, 2008). Practices that improve PSE are an important focus of parenting outcome research.

Further research is needed to help clarify how environmental contexts (e.g., discrimination experiences, SES, satisfaction with social support) and parent characteristics (e.g., ethnicity, PSE, parenting practices, parenting stress) interact. For example, Ardelt and Eccles (2001) found that SES and ethnic group membership moderate the relationship between PSE, parenting responsivity, and child success. In their study, they found that PSE was more predictive of promotive strategies among African American mothers than European American mothers, and that PSE had a stronger effect on children's academic success in African American families than European American families. The present study highlights the importance of examining the ways that contextual factors impact the relationships between belief systems, parenting, and child outcomes.

Parenting Stress

Parenting stress is another key social-cognitive influence on parenting practices and child outcomes. Broadly, stress is defined as a subjective, internal experience that can affect physiological and psychological states, and is a catalyst for utilizing available support resources (Kwok & Wong, 2000). A number of models highlight parenting stress as a significant and influential construct in cognitive processing and behavior (Abidin, 1992; Belsky, 1984; Patterson, 1990). One such model is the transactional model of stress, in which the appraisal of threat within an environment (e.g., unsafe neighborhood, lack of financial resources, difficult child characteristics) is combined with the perceived ability to cope with the threat (i.e., PSE, support resources) to produce the experience of stress (Folkman, Lazarus, Gruen, & DeLongis, 1986). Thus, parents' stress levels are a product of both perceived external factors and parent characteristics that can either serve to reduce or increase stress (Mash & Johnston, 1990).

Stress levels are impacted by the type and number of life stressors. Multiple stressors can have a cumulative effect that intensifies perceived stress and reduces the ability to cope over time (Hammen, Henry, & Daley, 2000). For example, Raver and Leadbeater (1999) studied low-income mothers and found that the number of environmental stressors (e.g., low-quality housing, unsafe neighborhood, child problem behavior) was inversely related to their PSE and sense of competence, despite daily parenting successes. In other words, a higher number of stressors was correlated with lower levels of PSE.

High levels of parenting stress have been linked to negative parenting practices and outcomes including neglect, abuse, negative interactions, and reduced family

functioning (Abidin, 1992; Coleman & Karraker, 1997; Crnic & Greenberg, 1990). Authoritarian parenting styles and coercive forms of discipline have also been found among parents who have difficulty managing life stressors (Belsky, Woodworth, & Crnic, 1996). Such parenting practices may then lead to poorer parenting outcomes and child behavior, which can serve to lower PSE levels and parenting satisfaction.

During the development of a control-of-outcome and self-efficacy measure, researchers found among European American (73%) and ethnic minority mothers (27%) that higher stress levels were significantly and inversely related to PSE and positively related to unhealthy parent coping responses, such as withdrawal and passive parenting (Wells-Parker et al., 1990). Stress levels tend to be higher when parents view their problems as unchangeable, internal, and stable (Burke & Elliott, 1999). Such an orientation may also contribute to hopelessness, depression, and lower levels of PSE (Burke & Elliott, 1999).

A number of intervention studies have demonstrated that stress, PSE, and family functioning are interrelated and amenable to change. Gross et al. (1995) found that a 10-week parent training program (focused on effective parent-child interactions) for 46 mothers and fathers of two year-olds reduced parenting stress, increased parent-child interaction quality, and also resulted in a significant increase in PSE. Participants in this intervention were predominantly European American (80%). Another training program that was part of a randomized study including 118 Australian mothers found that a decrease in parenting stress was associated with an increase in parental satisfaction and PSE, and a reduction in child problem behavior six weeks after treatment (Hayes, Matthews, Copley, & Welsh, 2008). Similar results were found for 33 mothers caring for

children with common childhood sleeping and feeding problems in Sweden (Ostberg, Hagekull, Lindberg, & Dannaeus, 2005). Following the intervention, mothers experienced reduced stress levels and an increase in perceptions of competence, PSE, and satisfaction. These findings suggest that PSE and parental stress are constructs that should be examined further due to their effects on parenting behavior, as well as their possible response to intervention.

Maternal Depression

Maternal depression is a significant concern (Bagner, Pettit, Lewinsohn, & Seeley, 2010; Conger, Patterson, & Ge, 1995; Gartstein, Bridgett, Dishion, & Kaufman, 2009; Gelfand & Teti, 1990; Hammen, 2003). The National Research Council and the Institute of Medicine (2009) reported that 7.5 million U.S. parents struggle with depression in any given year. This pervasive problem is characterized by a variety of symptoms, including: loss of appetite, disrupted sleep, loss of energy, headaches, feelings of sadness, anxiety, and hopelessness. Such symptoms may interfere with a parent's ability to fully provide adequate care to a child. Indeed, research suggests that parental depression is related to negative outcomes in terms of parenting behavior, as well as child development (Bagner et al., 2010; Gelfand & Teti, 1990; Gross, Shaw, Moilanen, Dishion, & Wilson, 2008). Although parental depression is correlated with negative outcomes across a child's development, associations are more robust during early childhood when the relationship between mother and child is most pronounced (Marchand, Hock, & Widaman, 2002).

Depression has been linked to poor parenting practices, including reduced engagement, a lack of response to child behavior, hostility, lower levels of emotional nurturing, neglect, ineffective parenting strategies, over-reporting of child problem behavior, and abuse (Conger et al., 1995; Gartstein et al., 2009; Hammen, 2003). A meta-analysis of 46 studies examined the relationship between depression and parenting behavior (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). The authors found that depression was strongly related to negative maternal behavior and disengagement from the child. They also found that even after symptoms of depression had decreased, residual effects from past depressions were apparent in interaction styles between parents and children. The results were moderated by SES and child age, with the strongest effects present in studies of low-income women and mothers of infants. In another study by Hoffman, Crnic, and Baker (2006), mothers who reported depressive symptoms were less effective at providing emotional, motivational, and technical scaffolding for their preschool-age children. This in turn was related to more child behavior problems and emotional dysregulation as compared to children of mothers who effectively used scaffolding techniques in their parenting practices.

Although the direction of influence is unclear, depression is also negatively correlated with PSE and positively correlated with perceived parenting stress (Fox & Gelfand, 1994; O'Neil, Wilson, Shaw, & Dishion, 2009; Teti & Gelfand, 1991). Women experiencing symptoms of depression and stress reported lower levels of PSE and engaged in parenting that included lower levels of sensitivity, warmth, and monitoring as compared to women who were not depressed (Fox & Gelfand, 1994). Depressed parents who feel inefficacious may be more likely to believe that children's problem behaviors

are due to internal, stable factors that are impervious to change. This may add to feelings of hopelessness if they believe there is no way they can effectively manage their child (Coleman & Karraker, 1997).

It is important to note that the relationship between depression and PSE appears to be moderated by ethnicity. O'Neil and colleagues (2009) examined this relationship in 607 ethnic minority mothers of preschoolers who were part of the Early Steps Multisite Study. Results suggested that African American mothers had significantly more symptoms of depression than European American and Hispanic mothers. However, PSE levels were not significantly different for each group. There was not a significant relationship between PSE and depression for African American mothers (O'Neil et al., 2009). Researchers hypothesized that these results indicate that perhaps African American mothers had adapted to stressors in such a way that prevented their PSE from being affected by their symptoms of depression.

Given the impact of depression and its relation to PSE and stress, it is important to account for this variable when examining parent behavior. The current study explores two competing models. In the first model, the parent's level of depression is controlled for in the testing of the model. In the second model, depression is represented within the model.

Adverse Factors

Discrimination Due to Ethnicity and SES

Examination of the mechanisms through which parenting practices are shaped should attend to contextual stressors and adverse factors that pose unique challenges for

families. The combination of minority ethnic group membership and low SES is oftentimes correlated with multiple risk factors, such as parent stress, poor quality housing, single-parent households, lack of access to community support services, and child behavior problems (Ardelt & Eccles, 2001; Natsuaki et al., 2007; Nyborg & Curry, 2003; Ong et al., 2009). Given the expected rise of families living at or below the poverty level, it is important to understand the experiences of parents who are faced with trying to care for their child while contending with limited resources and strains on emotional, physical, and mental energy.

Discrimination is a distinct, persistent, and life-long stressor that is a common occurrence for ethnic minority parents and/ or for those of low SES (Ong et al., 2009). The general effects of discrimination are well documented. Defined as unfair or differential treatment of specific groups of people with less power relative to other groups, discrimination perpetuates advantages for the majority group and disadvantages for minority groups (Ong et al., 2009). Examples of discrimination include being: insulted, ignored, hassled by police, treated unfairly in the workplace, looked at as threatening or suspicious, and blocked from access to resources such as quality housing and educational opportunities on the basis of group membership. Experiences of discrimination can cause extreme distress and contribute to negative outcomes (Williams & Williams- Morris, 2000).

Discrimination can adversely impact mental health (Ong et al., 2009; Williams, Neighbors, & Jackson, 2003). Chronic exposure to discrimination has been linked to discouragement, self-doubt, isolation, stress, anxiety, anger, sadness, and feelings of powerlessness (Nyborg & Curry, 2003; Ong et al., 2009; Williams et al., 2003). Victims

of chronic discrimination are also more likely to appraise situations as threats versus challenges, and to engage in maladaptive coping behaviors (Williams & Williams-Morris, 2000).

There is growing evidence that the harmful effects of discrimination begin early in life. In a sample of African American boys, Nyborg and Curry (2003) found that experiences of discrimination were related to externalizing symptoms, lower self-concept, and hopelessness. Also, rates of depression have been found to be higher in ethnic minority adolescents and in those from low-income families as compared to European American adolescents or those from high-income families (Garrison, Schluchter, Schoenbach, & Kaplan, 1989). These findings suggest that depression may be associated with adverse events, such as discrimination, that are related to minority group status. Given the long term and persistent nature of discrimination due to ethnicity and/ or SES, it is important to understand how this particular type of stressor may impact parenting.

There is a dearth of literature regarding the effects of discrimination experiences specifically on parenting responsivity during the preschool years, however, research exists regarding the effects of discrimination on parents' socialization practices with children (Hughes et al., 2006; Scottham & Smalls, 2009; Stevenson, 2004). Ethnic minority parents who have experienced discrimination are more likely to discuss discrimination with their children and teach ways of coping with experiences of discrimination (Hughes et al., 2006). This process is referred to as "preparation for bias." They are also more likely to teach children skills and characteristics needed to fit in with the dominant culture, including values such as hard work, self-acceptance, and equality.

The messages about discrimination that parents give to their children are impacted by variables such as child age, parent racial identity, SES, and education level (Hughes et al., 2006; Scottham & Smalls, 2009). For example, there is a lower rate of cultural socialization found among parents of preschoolers, presumably because children at this age are not yet cognitively able to understand and discuss issues such as discrimination. It was also found that cultural socialization and preparation for bias is found more among parents of higher SES and education level, as well as for families living in a negative social climate, including neighborhood danger and low neighborhood support (Hughes et al., 2006; Stevenson, 2004). This is an important line of research as literature suggests that cultural socialization can protect youth from the harmful effects of discrimination (Hughes et al., 2006).

It is possible that discrimination impacts parenting behavior through its effect on parent cognitions (i.e., PSE and depression) and coping resources (stress management). Coleman and Karraker (1997) hypothesized that a parent's ability to successfully care for a child in the face of risk factors like discrimination and low SES is in direct relation to the amount of personal control and efficacy they feel able to exercise. Given the unique experience of those who are victims of discrimination, it is important to understand how these experiences impact parenting and child outcomes.

Neighborhood Danger

Another adverse contextual factor that is important to examine is perceptions of neighborhood danger, including fear of victimization. Unsafe neighborhood conditions are associated with negative mental health outcomes for both parents and children

(Coleman & Karraker, 1997; Natsuaki et al., 2007). Oftentimes, low income families are subject to living conditions in which physical and social disorder is apparent. Physical signs of disorder include visible graffiti depicting negative messages and acts of vandalism (Natsuaki et al., 2007). Social disorder refers to dangerous activities such as public drug use, violence, gang activity, harassment, and prostitution. Such unsafe conditions have been shown to contribute to a sense of powerlessness, increase feelings of stress, increase symptoms of depression, and foster a sense of fear (Ong et al., 2009; Ross, 2000). A study by Caughy, O'Campo, and Muntaner (2004) found that fear of victimization was associated with child depression and anxiety.

When living in conditions that are unsafe, caregivers must parent in a manner that buffers the effects of dangerous neighborhoods. Although it is reasonable to speculate that parents from unsafe neighborhoods are less likely to report high levels of PSE, qualitative research indicates that caring for children in such conditions may *especially* foster a sense of purpose and self-belief (Jarrett, 1994). Ardelt and Eccles (2001) found that the role of PSE was especially salient and a stronger predictor of child outcomes for African American families living in unsafe regions as compared to European American mothers. There is evidence that warm and nurturing parenting can reduce risk in children from disadvantaged living conditions (Ardelt & Eccles, 2001). Further, the positive effects of supportive parenting practices have been found to be especially pronounced among children living in dangerous neighborhoods (Dearing, 2004).

A proactive coping style by parents also has been linked with risk reduction for children. Caughy et al. (2004) examined parenting behavior in African American families in Baltimore neighborhoods in which a fear of victimization existed. They found that

parents whose coping method was to deny experiences of discrimination reported higher rates of behavior problems among their preschool age children. However, parents who actively coped with racism (i.e., confronting the person involved or taking some type of action) reported lower rates of anxiety and depression in their children. Given the high rates of families living in unsafe conditions, parents can benefit from parenting intervention strategies that support parents in providing nurturing homes.

Protective Factors

Satisfaction With Social Support

In addition to examining contextual stressors that may impact parenting, it is also important to examine the role that protective factors might play in buffering the effects of stress. A protective factor worth examining is the satisfaction parents have with their social support resources (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Koeske & Koeske, 1990). Parents who experience various types of support (e.g., family, friends, community resources), and experience high levels of satisfaction with the support they receive, might be more able to cope with parenting stressors as compared to parents without adequate support (Crnic et al., 1983; Koeske & Koeske, 1990).

Social support consistently has been linked to many positive outcomes, including health and psychological benefits. For example, Koeske and Koeske (1990) studied stress and support in 125 women with at least one child at home. They found that social support was associated with lower stress levels related to child development, higher parent satisfaction, and higher PSE. Social support acted as a buffer, whereby the impact of stress was strongest when social supports were not adequate. Social support has also been

correlated with job satisfaction, lower levels of depression, reduced overall stress, maternal sensitivity, nurturance, and overall life satisfaction (Crnic et al., 1983; Feiring, Fox, Jaskir, & Lewis, 1987; Koeske & Koeske, 1990).

Additional research suggests that the *type* and *source* of support are important factors to explore (Feiring et al., 1987). There are various types of support, including emotional and tangible. For example, emotional support from a friend may provide feelings of belonging, acceptance, worth, helpful information, and encouragement. Tangible support can come in different forms, including financial help, transportation assistance, free childcare, household supplies, and other goods. Feiring et al. (1987) studied the relationship between social support and its effects on maternal behavior for 89 low-income Latino mothers. They found that the most frequent type of support considered to be helpful were goods and services (i.e., child care, diapers, gifts) provided by relatives, friends, and significant others. Advice from relatives was also mentioned as helpful. These types of support were related to nurturing maternal behavior. However, some types of support were reported as not helpful. For example, advice from significant others was often perceived by mothers as criticism and related to reduced levels of maternal responsivity. Given that not all types and sources of support are experienced as helpful, it is important to examine how satisfied a caregiver is with the support they receive. Overall, social support is linked to positive outcomes when the type and source are congruent with parents' needs.

Overall Life Satisfaction

Given the impact of psychological well-being on overall parenting behavior and child outcomes, it is important to examine parents' overall life satisfaction. Literature indicates that overall life satisfaction is impacted by factors such as minority group status, experiences of discrimination, social support, and a parents' personality and motivating factors (Allen & Patrick, 2010; Verkuyten, 2008). Life satisfaction is also related to parenting practices and child developmental outcomes (Berger & Spiess, 2011). Overall life satisfaction is a subjective report that captures how satisfied parents feel about their lives in general (Verkuyten, 2008). In comparison with affect (which measures how one feels at a single time point), life satisfaction is a more stable construct that captures how things are going in multiple life domains. Although life satisfaction is correlated with specific life domains (e.g., work, family, finances), the literature suggests that overall life satisfaction is a separate and distinguishable construct (Wu & Yao, 2007). For example, one might feel negatively about work life, but have high levels of life satisfaction in general due to other domains of life that are satisfying. In this study, overall life satisfaction captures parents' satisfaction in the multiple domains of: (a) nonwork activities and hobbies, (b) family life, (c) friendships, (d) health and physical conditions, and (e) overall life situation.

Contextual factors such as ethnic minority group status and experiences of discrimination can impact life satisfaction. A study by Verkuyten (2008) found that ethnic minority group members had lower levels of life satisfaction as compared to majority group members, and that systemic discrimination practices played a key role in this relationship. After controlling for a variety of factors (i.e., income, educational level,

physical health, age, and gender), discrimination and 'feeling like an outsider' were strongly related to lower levels of life satisfaction. It is important to note that researchers also found that lower life satisfaction due to discrimination was simultaneously related to higher levels of ethnic group identification, which, in turn, related to higher life satisfaction. This suggests that the effects of discrimination on life satisfaction can be buffered with proper supports.

A strong social support system is important for parents and can contribute to higher levels of life satisfaction (Rochlen, McKelley, Suizzo, & Scaringi, 2008). For example, a study of stay-at-home fathers found that those reporting a strong support network reported lower levels of parenting stress and higher overall life satisfaction than fathers with low levels of support (Rochlen et al., 2008).

In addition to contextual factors that impact the experience of life satisfaction, parent characteristics contribute to life satisfaction. A study by Allen and Patrick (2000) highlights the important role of parent goals or motives (intrinsically motivated goals desired for their own sake) in impacting life satisfaction, as well as parents' self-esteem. Examples of motives include the need for: (a) independence, (b) acceptance, (c) order, (d) tranquility, (e) family connectedness, and (f) social contact. Results of the study suggested that certain motives can contribute to low or high levels of life satisfaction, based on how the motive is or is not being met due to contextual factors such as child problem behavior or family stresses. For example, having a high need for independence, order, and tranquility in the context of caring for a child with severe oppositional defiance disorder can lower levels of life satisfaction and self-esteem. Researchers hypothesized that individuals have lower self-esteem when their specific motives cannot

be satisfied and that it is important to help parents understand how their intrinsic motives are or are not being met (Rochlen et al., 2008).

Overall life satisfaction is important to explore due to its impact on child outcomes. For example, a study found that parents' life satisfaction was related to 2-3 year olds' developmental functioning and socio-emotional behavior three years later (Berger & Spiess, 2011). Using data from the German Socio-Economic Panel Study (SOEP), mothers' life satisfaction was tracked over time, controlling for maternal personality style and cognitive skills. Results indicated that higher levels of life satisfaction resulted in better verbal skills in children at ages 2 to 3 and lower socio-emotional concerns at ages 5 to 6. Researchers postulated that maternal life satisfaction might positively impact child development through the number and quality of activities engaged in when the mother is satisfied overall (Berger & Spiess, 2011). This might translate to activities like reading, playing, and exploring together. It is also likely that the time spent together is more positive and serves to build relationships. In sum, overall life satisfaction is an important construct to explore given its relation to adverse and protective factors, as well as parent characteristics, parent behavior, and subsequent child outcomes.

Neighborhood Connectedness

Neighborhood connectedness is another variable that is worth exploring as it may serve as a protective factor for families faced with multiple risk factors. Connectedness to a neighborhood or community refers to feeling a sense of belonging, loyalty, and identity with those in the neighborhood. Collective efficacy, trust, and behavioral norms have also

been conceptualized as domains of neighborhood connectedness (Bandura, 1989; Zeldin & Topitzes, 2002).

Neighborhood connectedness has been linked to a number of positive outcomes in terms of mental health, physical health, and social order (e.g., lower rates of violence and homicide; Browning & Cagney, 2002; Hull, Kilbourne, Reece, & Husaini, 2008; Nieuwbeerta, McCall, Elffers, & Wittebrood, 2008; Sampson, Raudenbush, & Earls, 1997). Community identification was associated with lower levels of negative stereotypes, lower levels of fear, feelings of empowerment, and community involvement (Baumeister & Leary, 1995; Ross & Jang, 2000). Parents who felt connected to their neighborhood were more likely to turn to trusted neighbors for support with childcare and supervision of their child (Furstenberg, 1993). A study by Furstenberg (1993) found that efficacious parents living in unsafe neighborhoods were more likely to enroll their children in safe activities within the neighborhood and were more likely to seek out activities in safer neighborhoods to provide their children with opportunities for positive social connectedness.

It is important to note that variation in neighborhood characteristics and risk may impact whether or not connectedness with a neighborhood is a protective factor. Residents of neighborhoods that are characterized by social and physical disorder may feel less connected than residents in safer neighborhoods. Earls, McGuire, and Shay (1994) found that perceptions of danger in the neighborhood were related to lower levels of community attachment. In unsafe neighborhoods, it could be that isolating from the community may be more protective than engaging with the community. Furstenberg (1993) found that parents in high-risk neighborhoods often engaged in strategies to

protect their child, including parental monitoring and strict supervision (i.e., keeping child at home or chaperoning). Additionally, parents instilled in their children a sense that they were different from their community members. It is important to understand the role that neighborhood connectedness might play for high-risk families, and how this relationship might change based on the level of danger perceived in the neighborhood.

Purpose of the Current Study

The purpose of the present study was to test a model of relationships between adverse factors (discrimination experiences based on ethnic discrimination and SES, and neighborhood danger), protective factors (satisfaction with social support, overall life satisfaction, and neighborhood connectedness), depression, PSE, parenting stress due to daily hassles, and parental responsivity over time among low-income mothers of preschool age children. Using an existing longitudinal data set, these risk and protective factors and individual parent characteristics were combined in a model predicting parental responsivity.

Research Questions

The study was organized according to the following research questions:

1. Does the proposed set of relationships between the *Adverse* latent factor, *Protective* latent factor, and parent cognitions of depression, PSE, and stress account for significant variance in parental responsivity?

2. Are the contextual *Adverse* and *Protective* latent factors related to PSE and parenting stress?

3. Does the *Protective* latent factor mediate the relationships between the *Adverse* latent factor and PSE, stress, and/or responsivity?

4. Are the relationships between the *Adverse* latent factor and parental responsivity mediated by PSE and/ or parenting stress?

5. Does the model fit improve when depression is directly accounted for in the model?

6. Are there differences in these relationships based on parent ethnic group membership?

To address these questions, two competing theoretical models were tested using existing data from the longitudinal Early Steps Multisite Study (Shaw et al., 2006). Data from three different time points were used when the target child was age 3 (Time 1), 4 (Time 2), and 5 (Time 3), respectively. The two hypothesized multiple-mediation models tested in this study are depicted in Figures 1 (Model 1) and 2 (Model 2). In Model 1, maternal depression was accounted for at each time point. In Model 2, maternal depression was included as a variable at Time 1, which constituted the only difference between Models 1 and 2. Two latent constructs were included in the models and each comprised of three indicator variables. The *Adverse* latent factor included parent ethnic discrimination experiences, SES discrimination, and perceived neighborhood danger. The *Protective* latent factor included parent satisfaction with social support, overall life satisfaction, and neighborhood connectedness. For both models, structural equation modeling (SEM) was used to test for direct and indirect relations between the variables, as well as overall model fit. A multi-group analysis was used to address the final research question.

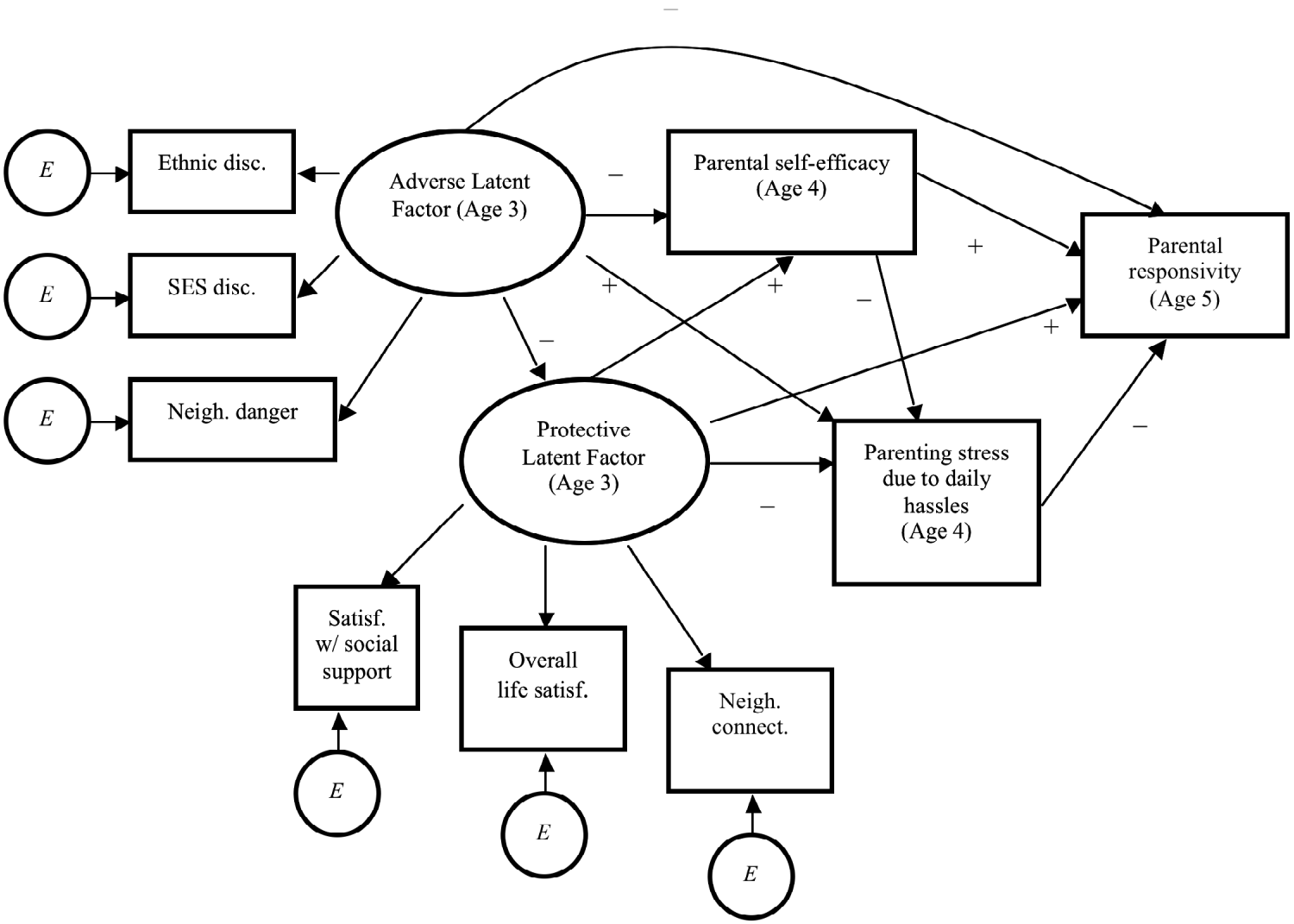

FIGURE 1. Overall Theoretical Mediation Model 1 with hypothesized relationships. Controlled for maternal depression at each time point.

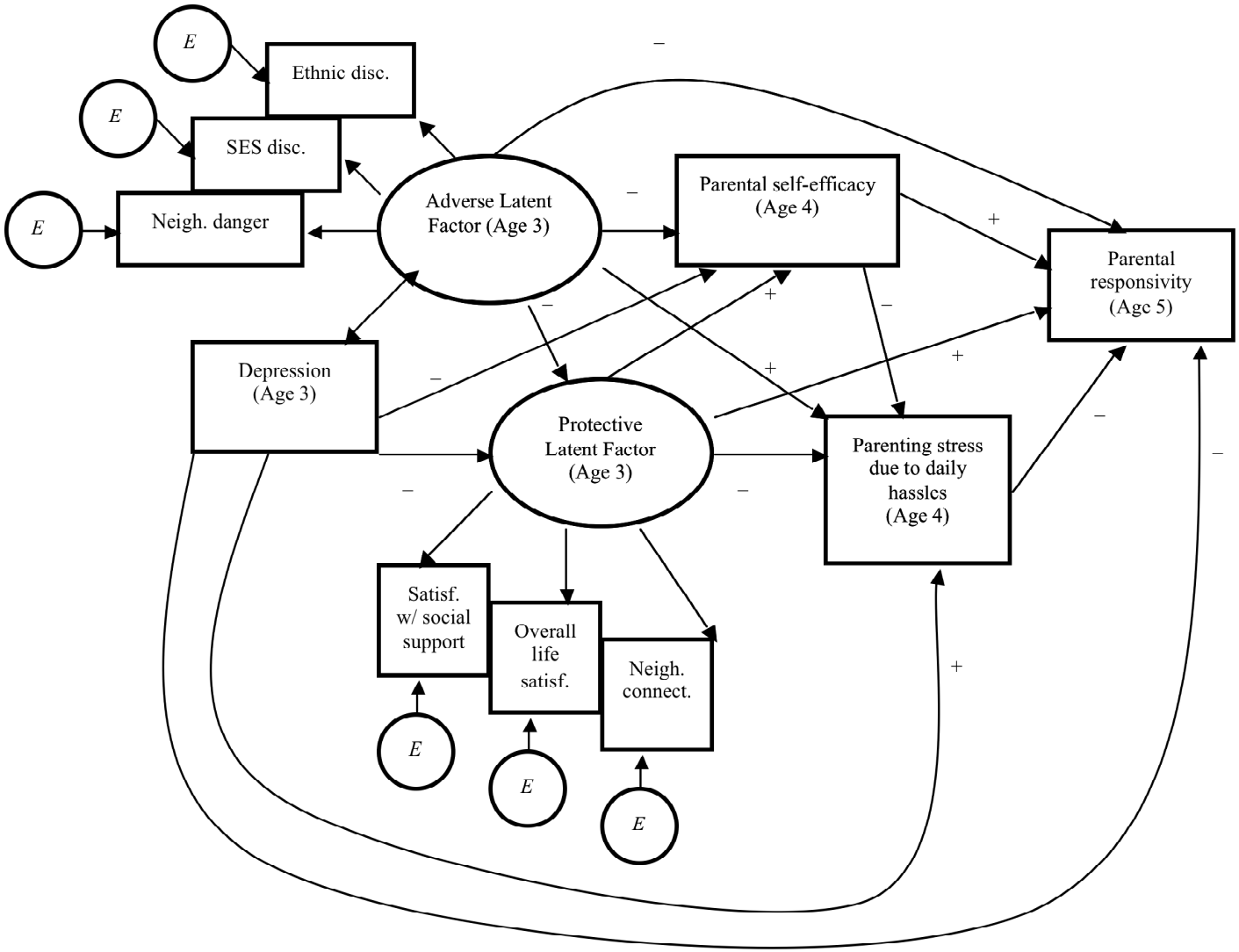

FIGURE 2. Overall Theoretical Mediation Model 2 with hypothesized relationships.

Hypotheses

For Models 1 and 2, I hypothesized that the *Adverse* latent factor would be negatively related to the *Protective* latent factor given the observed variables comprising each factor. Higher levels of neighborhood danger and ethnic/ SES discrimination would be theoretically related to lower levels of life satisfaction and neighborhood connectedness (Furstenberg, 1993; Verkuyten, 2008). It is unclear how adverse factors might relate to satisfaction with social support. It is possible that adverse factors could lead a parent to actively create support networks, however, it is also possible that adverse factors would result in isolation and lower levels of support (Earls et al., 1994; Furstenberg, 1993; Ong et al., 2009). Overall, however, I expected that higher levels of adverse problems would correlate with lower levels of protective factors (Nyborg & Curry, 2003; Ong et al., 2009; Williams et al., 2003). Second, it was expected that the *Adverse* latent factor would be related to low levels of PSE and high parenting stress (Nyborg & Curry, 2003; Ong et al., 2009; Raver & Leadbeater, 1999). Third, adverse factors could either be positively *or* negatively related to parental responsivity (Ardelt & Eccles, 2001; Hill, 2006; Jarrett, 1994). In some situations, adverse factors reduce the ability to interact with a child. These same adverse factors may be *especially* motivating for some parents to stay involved with a child, and may be moderated by ethnic group membership (Ardelt & Eccles, 2001). Thus, although I hypothesized that adverse factors would result in reduced levels of parental responsivity, a relationship in either direction has precedent in the literature. Fourth, I predicted that the *Protective* latent factor would be positively related to PSE and parental responsivity, and negatively related to stress (Berger & Spiess, 2011; Furstenberg, 1993; Koeske & Koeske, 1990). Fifth, I anticipated

that high levels of PSE would result in high levels of parental responsivity, as would lower levels of stress (Coleman & Karraker, 1997; Jones & Prinz, 2005).

I expected the following mediating relationships within the models: (a) The *Protective* latent factor would mediate the relationship between the *Adverse* latent factor and parental responsivity; (b) the *Protective* latent factor would serve as a mediator between adverse factors and PSE, as well as between adverse factors and parenting stress; and (c) PSE would mediate the relationship between the *Adverse* latent factor and parental responsivity, as well as between adverse factors and stress. In Model 2, I hypothesized the same relationships as Model 1, however, I also expected that high levels of maternal depression at child age 3 would relate to high parenting stress, low levels of PSE, and low levels of responsivity at child age 5 (Bagner et al., 2010; Lovejoy et al., 2000). I also anticipated protective factors to serve as a mediator between depression and PSE, stress, and parental responsivity.

In summary, the current study aims to illuminate ecological factors that impact parental responsivity, and to examine possible differences associated with majority/ minority ethnic group membership. Research on adverse and protective factors of parenting can be used to promote family well-being for parents, particularly low-income and ethnic minority parents.

CHAPTER III

METHODOLOGY

Participants

There were 659 families in the longitudinal Early Steps Multisite study between child age 3 (Time 1) and 5 (Time 3). Half of the families in the Early Steps study received a Family Check-Up (FCU; Dishion & Kavanagh, 2003) intervention and the remaining families were assigned to the control group. For the current study, only the families who were part of the control group (n = 325) were included, so as to avoid confounding intervention effects. Additionally, only mother-child dyads in which biological mothers or primary female guardians (i.e., grandmothers or foster mothers) were the primary respondents on all measures at each time point were included (n = 307).

A detailed description of the sample and methodology of the Early Steps Study is provided in Dishion et al. (2008), and Gill, Hyde, Shaw, Dishion, and Wilson (2008). Participants were from the Women, Infants, Children (WIC) programs in Pennsylvania, Oregon, and Virginia. Families lived in urban (38%), suburban (37%), and rural (26%) settings. The majority of female caregivers were either married (39.4%) or single (29.3%). A smaller percentage were living with a partner (19.2%), separated (6.2%), or divorced (5.5%). Across sites, participants were ethnically diverse as parents self-identified as belonging to the following ethnic groups: European American (52%, n = 159), African American (31%, n = 94), Latino (11%, n = 33), Bi-racial (4%, n = 13), Native American (2%, n = 5), and Other (1%, n = 3). The majority of families enrolled

in the study had an annual income of less than $20,000 and lived in single-family homes or apartments (47%), duplexes, or townhouses (44%).

The children in the sample had a mean age of 42 months (*SD* = 3.2) at the time of the age 3 assessment, 54 months (*SD* = 3.2) at the time of the age 4 assessment, and 66 months (*SD* = 3.3) at the time of the age 5 assessment. There were roughly equal numbers of male (52%) and female (48%) children.

Procedures

Families were invited to participate in the Early Steps study between 2002 and 2003 if they had a child 2 years of age and were subject to specified socioeconomic, family, and/or child risk factors. Socioeconomic risk was indicated by low parent-education level and low family income. Family risk was defined as maternal depression, daily parenting challenges (i.e., child nags, whines, or resists bedtime), parental substance-use problems, and/or teen pregnancy (Dishion et al., 2008). Child risk factors were indicated by externalizing conduct problems (i.e., hitting and fighting) and conflictual relationships with adults (i.e., parents and/ or teachers). Two or more of the three risk factor categories were required to participate in the study. Families were randomly assigned to either the control group or the intervention group. Those in the intervention group annually received the FCU (Dishion & Kavanagh, 2003), a brief 3-session intervention based on motivational interviewing.

For all families, participation in the Early Steps Study involved an annual assessment that included parent self-report measures, and observations of child free-play, clean-up tasks, a delay of gratification task, 4 teaching tasks, 2 inhibition-inducing

situations, meal preparation, and a lunch task. Families received monetary compensation for their participation in the study.

The data for this study was obtained from the measures administered as part of the annual assessment. Parents completed questionnaires concerning personal and child functioning. Additionally, trained study interviewers provided observational data regarding parent-child interactions. In order to access the data, I received approval to conduct the study from the Early Steps Study team, as well as the Institutional Review Board at the University of Oregon (see Appendix A).

Measures

The current study used parent self-report when the child was age 3 and 4, and observational data gathered when the child was age 5. For efficiency, these time points are referred to hereafter as child age 3 or Time 1, child age 4 or Time 2, and child age 5 or Time 3. The *Adverse* latent factor was comprised of three parent self-report variables at child age 3: (a) Discrimination due to ethnicity, (b) Discrimination due to SES, and (c) Neighborhood danger. The *Protective* latent factor was also comprised of three parent self-report variables at child age 3: (a) Satisfaction with social support, (b) Overall life satisfaction, and (c) Neighborhood connectedness. Model variables at child age 4 (Time 2) were maternal reports of PSE and parenting stress due to daily hassles. The outcome variable, parental responsivity, was measured at child age 5 (Time 3) and derived from interviewer observation. Model 2 included maternal self-report of depression at Time 1. All measures described in this section are provided in Appendix B.

Demographics Questionnaire

A 38-item demographics questionnaire created for the Early Steps Study (Dishion et al., 2008) was given to parents. A subset of items were used based on relevance for the current study, including questions about parent gender (1 item), parent education (1 item), housing situation (2 items), income (2 items), financial assistance/ access to community resources (12 items), child preschool plans (2 items), and caregiver relationship to target child (3 items). A list of options was provided for each question and participants filled in a bubble to indicate the answer that best matched their situation. The option to endorse "N/A" or fill in the blank (i.e., Other: Describe) was available for the majority of questions. Caregivers indicated their relationship to the target child by referring to a 2-digit key-code (i.e., 3B = Bio Mom, 3O = Grandma).

Discrimination Due to Ethnicity and SES

Discrimination due to ethnicity and SES were two separate constructs measured with the Distressing Experiences- Microaggression Scale (MIC; Child and Family Center, 2004). This self-report measure consisted of 9 questions per subscale (18 total items) related to experiences of discrimination and was adapted for the Early Steps study from a measure originally used to assess experiences of discrimination among Native Americans (Chae & Walters, 2009). Questions included, "Have you ever been made to feel as if you don't matter, ignored, or that your opinions don't count?" and "Have you ever been misunderstood by people from a different background?" For each question, participants responded on a scale from 1 (*almost never*) to 5 (*almost always*) in response to "Because of your ethnicity/race," as well as to "Because of your income/education."

For each subscale, totaled scores ranged from 9 to 45, with higher scores indicating higher levels of discrimination. Internal consistency reliability with these subscales in prior studies ranged from .92 (Wilson, Hurtt, Shaw, Dishion, & Gardner, 2009) to .97 (Chae & Walters, 2009). Chae and Walters (2009) used the MIC to examine established relationships with experiences of discrimination. Their results were consistent with previous studies linking discrimination and physical health outcomes, pain, and impairment, providing evidence of validity (Chae & Walters, 2009). The Cronbach's alpha coefficients in the present sample for discrimination related to ethnicity and discrimination related to SES were .86 and .89, respectively.

Neighborhood Danger

Perceptions of neighborhood danger were measured with the 15-item "Neighborhood Danger" subscale of the Me and My Neighborhood Questionnaire (MMNQ; Ingoldsby & Shaw, 2002). The full MMNQ consisted of 20 self-report items made up of the neighborhood danger subscale, as well as a 5-item neighborhood connectedness subscale. Sample questions that measure neighborhood danger include, "A family member was robbed or mugged," "I saw strangers who were drunk or high near my home," and "Someone threatened to hurt a member of my family." The frequency scale ranged from 0 (*never*) to 3 (*often*). Scores were aggregated, with a possible range of 0 to 45. Higher scores indicated higher levels of perceived danger. A prior Early Steps study using this subscale reported internal consistency of .88. (Wilson et al., 2009). Wilson et al. (2009) also reported that an alternate measure of neighborhood danger provided evidence of validity, however, the correlation between

these measures was not reported. Cronbach's alpha reliability in the present sample was .86.

Satisfaction With Social Support

The level of satisfaction a mother feels with the social support she receives was measured with the General Life Satisfaction (GLS; Crnic et al., 1983) self-report questionnaire. A subset of items was used based on results from an exploratory factor analysis (EFA) I conducted for the current study.

The original GLS measure included 16 items and assessed satisfaction in the areas of social support, as well as other life domains including work and health. During original construction of the measure, Crnic et al. (1983) found 3 separate factors examining life satisfaction in the areas of intimate relationships (α = .69), friendships (α = .65), and community (α = .50). The authors of the measure found that the subscales correlated (r = .29 to .43) with measures of perceived social support and life satisfaction among a sample of mothers of infants (Crnic et al., 1983). Owens, Shaw, and Vondra (1998) used the GLS to measure social support by separately scoring items that referred to *total amount of support* and *satisfaction level with the support being received* (Owens et al., 1998). However, justification for scoring in this manner, specific items used, and reliability coefficients were not reported (Owens et al., 1998).

For the current study, I conducted an EFA with the full GLS to determine which items best measured perceived social support as conceptualized in this study. This decision was made given that the full GLS (Crnic et al., 1983) was intended to measure satisfaction in multiple life domains (i.e., work, health status, overall satisfaction), and

not just in the area of social support. The decision to conduct an EFA with this measure was also made because the GLS had not been used to specifically measure perceived *social support satisfaction* in past Early Steps studies. Additionally, the study that used the GLS to measure social support only did not provide justification for the scoring method used and did not report reliability data (Owens et al., 1998).

Based on the EFA results (see 'Exploratory Factor Analyses' results section for a full description), satisfaction with social support was measured with 6 items. The majority of these 6 items asked participants to indicate their level of satisfaction with different types of support, including number of organized groups, phone visiting, visiting with friends, and number of supportive friends. Sample items include, "If you were to become upset or angry, would you have someone to talk honestly to, who is not involved? How many people?" and "How satisfied are you with this?" Based on the item, participants responded on a scale to indicate how satisfied they were with the type of social support being provided [i.e., 1 (*very dissatisfied*) to 4 (*very satisfied*)] or to indicate the number of people offering support [i.e., 1 (*no people*) to 5 (*more than 4 people*)]. Possible scores ranged from 6 to 25, with higher numbers reflecting higher levels of satisfaction with social support. Cronbach's alpha was .80 for these 6 items in the current study.

Overall Life Satisfaction

The level of perceived overall life satisfaction was measured with a subset of 5 items from the same General Life Satisfaction (GLS; Crnic et al., 1983) measure described in detail in the previous section (Crnic et al., 1983). The original 16-item GLS

was intended to measure satisfaction in various life domains (i.e., non-work activities, family, health, and current life situation), including perceptions of social support. Overall life satisfaction and satisfaction with social support were conceptualized in the current study as two separate and distinguishable constructs that could be captured by the items in the GLS, thus I conducted an EFA to determine the measure's underlying factor structure. Crnic et al. (1983) originally conducted an EFA with the full GLS with a sample of mothers caring for infants, however, detailed EFA results and the associated items for the subscales (intimate relationships, $\alpha = .69$; friendships, $\alpha = .65$; community, $\alpha = .50$) were not reported. I also conducted an EFA because previous studies with Early Steps data had not used the GLS to study overall life satisfaction.

The EFA conducted on the GLS for the current study supported the use of 5 items to assess overall life satisfaction in multiple life domains, including hobbies, family, health, and life overall (see 'Exploratory Factor Analyses' results section for a full description of the EFA). Sample items include, "How much satisfaction do you get from non-working activities, hobbies, and so on?" and "When you take everything into consideration, how would you describe your current life situation?" Participants responded on the following scales based on the item: 1 (*none*) to 7 (*a very great deal*) or 1 (*things are very bad right now*) to 5 (*things are quite good*). The 5 items were summed and possible scores ranged from 5 to 33, with higher scores indicating higher levels of overall life satisfaction. Cronbach's alpha was .75 for these items.

Neighborhood Connectedness

Feelings of connectedness to one's neighborhood were measured with the 5 item "Neighborhood Connectedness" subscale of the Me and My Neighborhood Questionnaire (MMNQ; Ingoldsby & Shaw, 2002). This subscale of the MMNQ was originally developed to measure neighborhood affiliation among urban youth (Perez-Smith, Albus, & Weist, 2001). Perez-Smith et al. (2001) conducted informal focus groups with youth and adults to generate the neighborhood connectedness items (α = .92) and to validate the construct. Specifics of their validity evidence were not reported.

Self-report items given to Early Steps participants included "I feel loyal to the people in my neighborhood" and "The friendships and connections I have with people in my neighborhood mean a lot to me." Participants responded on a scale from 1 (*not at all true*) to 7 (*very true*). Scores were aggregated and ranged from 5 to 35. Higher scores indicated greater feelings of connectedness to one's neighborhood. Cronbach's alpha in the current study was .86.

Parental Responsivity

To assess parenting interaction and responsivity, mother-child interactions were observed in the home by a trained examiner. At the end of the in-home assessment visit, examiners then completed the Early Child Home Observation for Measurement of the Environment Inventory (HOME; Bradley & Caldwell, 1984), which measures the quality of the home environment. Examiners were trained through the use of a detailed coding manual (Bradley, Caldwell, & Corwyn, 2003) and were blind to family treatment group status.

The full 68-item HOME measure was intended to assess multiple domains, including parent characteristics, the home environment, neighborhood safety, and the quality and quantity of support provided in the home environment. For purposes of the current study, only items that specifically related to parental responsivity were used. Previous Early Steps studies have used only the 3-item 'Parental Involvement' subscale (α = .53 to .68) to create a total score ranging from 0 (*none present*) to 3 (*all present*) (Lunkenheimer et al., 2008; Shaw et al., 2006). However, to capitalize on the many items in the HOME that assess parental responsivity and involvement as conceptualized in the current study, I conducted an EFA to explore its underlying structure. Based on the results of the EFA, a total of 13 items were used (see 'Exploratory Factor Analyses' section for a full description of the EFA) to measure parental responsivity and involvement, including items from the 'Responsivity,' 'Involvement,' and 'Acceptance' sections of the HOME. Sample items include, "Parent praises child's qualities twice during visit," "Parent encourages child to talk and takes time to listen," and "Parent structures child's play periods." Interviewers responded either 0 (*no*) or 1 (*yes*) to each item. The Cronbach's alpha for the current study was .81.

Parenting Stress Due to Daily Hassles

Parenting stress was measured with the Parenting Daily Hassles (PDH; Crnic & Greenberg, 1990) measure that consisted of 20 self-report items that assess parenting stress related to everyday parenting tasks and challenging child behavior. For each item, parents indicated how often the behavior occurred (*frequency subscale*) and the degree to which the behavior was bothersome (*intensity subscale*). Frequency ranged from 1

(*rarely*) to 4 (*constantly*). Intensity ranged from 1 (*no hassle*) to 5 (*big hassle*). Sample questions include, "Being nagged, whined at, complained to," "The kids resist or struggle over bedtime with you," and "The kids are hard to manage in public (grocery store, shopping center, restaurants)." Frequency and intensity subscales were aggregated in the current study to create one total score of parenting stress related to daily parenting hassles and challenging behavior (Crnic & Greenberg, 1990). The range of possible scores were from 40 to 180, with higher scores indicating higher levels of parenting stress.

The authors of the scale found the PDH measure to be reliable (α = .86) and valid (Crnic & Greenberg, 1990). The frequency (α = .81) and intensity (α = .90) subscales had good internal consistency and were highly correlated (r = .78; Crnic & Greenberg, 1990), which indicates good convergent validity. The frequency and intensity subscales for the current sample were also highly correlated (r = .78) and Cronbach's alpha for the current sample was α = .92.

Parental Self-Efficacy

A 10-item subscale of the Being a Parent Scale (BEPAR; 19 items; formerly Parenting Sense of Competence Scale, Johnston & Mash, 1989) was used to assess parental self-efficacy. Prior studies using Early Steps data have also only used this established subscale to measure parental self-efficacy (O'Neil et al., 2009; Weaver et al., 2008), as the second 9-item subscale assessed parent satisfaction in the parenting role (i.e., feelings of frustration, motivation, and anxiety, Johnston & Mash, 1989). Items of the self-efficacy subscale addressed parenting topics such as competence, problem-solving ability, and capability in the parenting role. Sample questions include, "I know

what to do when problems arise with my child" and "I honestly believe that I have all the skills necessary to be a good parent to my child." Parents responded on a scale from 1 (*strongly agree*) to 6 (*strongly disagree*). Scores were reverse-coded so that higher scores reflect higher parental self-efficacy.

Johnston and Mash (1989) provided evidence of internal consistent reliability (α = .76) and construct validity among a large sample of Canadian parents of children between ages 4 and 9. Researchers examined the factor structure of the measure and confirmed two separate factors (i.e., *self-efficacy* and *satisfaction).* Consistent with previous studies (Gibaud-Wallston & Wandersman, 1978; Mash & Johnston, 1983), self-efficacy scores were significantly negatively correlated with perceptions of child problem behavior (r = -.10) and mothers' scores were positively correlated with fathers' scores (r = .31) (Johnston & Mash, 1989). Cronbach's alpha for the self-efficacy items for the current study was .81.

Depression

Parent symptoms of depression were assessed with a 20-item self- report questionnaire, the Center for Epidemiological Studies on Depression Scale (CES-D; Radloff, 1977). This is a well-established and widely used measure that assesses depression symptomology within the past week, including difficulty with sleep, concentration, appetite, energy, and mood. Sample questions include, "I felt depressed," "I did not feel like eating; my appetite was poor," and "I had crying spells." Parents responded on a scale from 0 (*rarely or none of the time; 0-1 day*) to 3 (*most or all of the time; 5-7 days*). Four positively phrased items were reverse scored so that scores could

be aggregated. Scores ranged from 0 to 60, with higher scores indicating higher levels of depression.

Validity was established by patterns of correlations with a number of other measures, including Hamilton Clinician's Rating Scale (r = .69), the Raskin Rating Scale (r = .75), and ratings of severity of depression by clinicians (r = .56; Radloff, 1977). The CES-D scores also discriminated well between inpatient and general populations. The CES-D has been reported to have internal consistency reliability across groups with varying levels of depressive symptoms in both a general (α = .85) and clinical sample (α = .90). For the current study, Cronbach's alpha was .91 for Times 1 and 2, and .92 for Time 3.

CHAPTER IV

RESULTS

This chapter describes the study findings. Contents are presented in the following order: data screening and missing data, EFAs for the GLS and HOME measures, descriptive information and statistical assumptions, bivariate correlations, multivariate analysis of variance results, test results of the hypothesized and post hoc models, and results of the multi-group analysis with ethnicity as the grouping variable.

Data Screening and Missing Data

All preliminary analyses to model testing, including data screening and examination of missing data, were conducted using Predictive Analytics Software 18.0 for Windows (PASW; SPSS Inc., 2009). Data ranges were checked for each variable to ensure that all data were within the prescribed ranges. Three data points were outside of the possible range for the General Life Satisfaction Scale. These values appeared to be data entry errors and were rounded down to the nearest in-range value after confirming that these responses were consistent with participants' prior responses. All other data were in range.

Missing data were examined. As expected, there was a non-significant amount of missing data at child age 3 (0.68%) that progressively increased at ages 4 (8.36%) and 5 (15.67%) due to attrition. The amount of data missing for each variable is presented in Table 1. The greatest amounts of missing data are associated with the criterion variables, parental responsivity and depression at child age 5. Parental responsivity and depression

are the only child age 5 variables in the data set, which may explain the greater amounts of missing data. Overall, the amount of missing data was within a reasonable range (Little & Rubin, 2002).

TABLE 1. Percentage of Missing Data per Variable

Variable (age; time point)	Missing data (%)
1. Ethnic discrimination (3; Time 1)	0.80
2. SES discrimination (3; Time 1)	0.98
3. Neighborhood danger (3; Time 1)	0.40
4. Satisfaction with social support (3; Time 1)	1.02
5. Overall life satisfaction (3; Time 1)	1.02
6. Neighborhood connectedness (3; Time 1)	0.39
7. Parental self-efficacy (4; Time 2)	8.34
8. Stress due to parenting hassles (4; Time 2)	8.48
9. Parental responsivity (5; Time 3)	17.09
10. Depression (3; Time 1)	0.50
11. Depression (4; Time 2)	8.13
12. Depression (5; Time 3)	11.07

Little's missing completely at random test (MCAR) indicated that missing items were missing completely at random, X^2 (63722) = 62718.63, p = .998. The missing data were imputed using maximum likelihood estimates under the full information maximum likelihood (FIML) method for missing values in the data set. This method was chosen because FIML estimation provides a best estimate based on all available information in all observations (Olinsky, Chen, & Harlow, 2003).

Exploratory Factor Analyses

Exploratory factor analyses (EFAs) were conducted on two measures, including the GLS (used to measure satisfaction with social support and overall life satisfaction; Crnic et al., 1983) and the HOME (used to measure parental responsivity; Bradley & Caldwell, 1984). EFAs were conducted on both measures to estimate the factor structures that represent the relationships among items in this specific sample. EFAs were conducted specifically with these two questionnaires to identify which items within the full measures related to estimated factors (satisfaction with social support, overall life satisfaction, parental responsivity) for the current sample.

The GLS included items that assessed both satisfaction with social support *and* satisfaction in other life domains. Previous studies that used the GLS either aggregated all the items to create one total score, thereby combining the two constructs or did not report justification for scoring items related to social support only (Crnic et al., 1983; Owens et al., 1998). Thus, I conducted an EFA to explore the measure's factor structure and identify items that best approximated satisfaction with social support and overall life satisfaction, respectively.

The full HOME inventory was intended to assess multiple constructs related to the home environment. Previous Early Steps studies using the HOME have used only 3 items that were labeled parental involvement (α = .53 to .68; Lunkenheimer et al., 2008; Shaw et al., 2006). A number of other items in the measure also appeared to measure parental responsivity as conceptualized in the current study, but no EFAs or construct validity evidence was reported. Therefore, I conducted an EFA to explore the measure's underlying factor structure.

Recommendations by Preacher and MacCallum (2003) were followed related to extraction method, the number of factors to retain, and rotation method. For both measures, I used principal axis factoring with an oblique rotation (direct oblimin) method. An oblique rotation was used as it was expected that resulting factors would be correlated. Using Kaiser's rule, I extracted and retained factors based on eigenvalues greater than 1, visual inspection of the scree plot, and interpretability of the factors (Preacher & MacCallum, 2003). Item communalities (h^2) below .20 were removed from subsequent analyses, as well as pattern coefficients lower than .32 (Kline, 2005).

General Life Satisfaction Measure

Satisfaction with social support and overall life satisfaction were measured using the GLS. In the initial EFA, based on Kaiser's rule, 5 factors were extracted that accounted for 61% of the variance of the original 16 items (Preacher & MacCallum, 2003). A review of the communalities and pattern coefficients revealed several weak items (Kline, 2005). Items 1 (h^2 = .12), 3 (h^2 = .19), and 11e (h^2 = .08) were dropped due to low communalities. Items 5 (.25) and 9 (.29) were dropped due to low pattern coefficients (Kline, 2005). The pattern of factor loadings suggested that only 2 of the 5 factors were uniquely defined. Visual inspection of the scree plot also suggested that a 2-factor solution might be appropriate. After eliminating the weak items, I conducted a follow-up EFA limiting extraction to two factors. The two factors accounted for 41% of the variance in the 11 items. Communalities ranged from .28 to .59. Factor 1 accounted for 29.6% of the variance and pattern coefficients ranged from .39 to .85. Factor 2 accounted for 11.31% of the variance and pattern coefficients ranged from .36 to .72. See

Table 2 for the communalities and pattern coefficient matrix for the GLS. Factor 1 (labeled *Satisfaction with Social Support*) consisted of 6 items assessing mothers' satisfaction with different types of social support received and Factor 2 (labeled *Overall Life Satisfaction*) consisted of 5 items assessing satisfaction in a variety of life domains. The 2 factors were correlated (r = .52). Internal consistency reliability analyses of the 2 factors yielded a Cronbach's alpha of .80 for Factor 1 and .75 for Factor 2. The EFA results make conceptual sense and support including both factors as indicators for the *Protective* latent factor.

TABLE 2. Communalities and Pattern Coefficient Matrix for GLS

GLS item	h^2	Pattern coefficients	
		Satisfaction with social support	Overall life satisfaction
8. How satisfied are you with this (number of people to talk to)?	.59	.85	--
4. How satisfied are you with this amount of phone visiting?	.47	.78	--
10. How satisfied are you with this situation (someone is there to share happiness)?	.55	.76	--
6. How satisfied are you with this amount of friend visiting?	.45	.57	--
2. How satisfied are you with this situation (organized groups that are a source of support for you?)	.31	.52	--
7. If you were to become upset or angry, would you have someone to talk honestly to, who is not involved? How many people?	.35	.39	--
11b. How much satisfaction do you get from family life?	.39	--	.72
11a. How much satisfaction do you get from you non-working activities, hobbies, and so on?	.33	--	.68
11c. How much satisfaction do you get from your friendships?	.42	--	.67
11d. How much satisfaction do you get from your health and physical conditions?	.30	--	.62
12. When you take everything into consideration- your child, your adult life, etc., how would you describe your current life situation?	.28	--	.36

Early Child Home Observation for Measurement of the Environment Inventory

Parental responsivity was measured using the HOME. The full HOME consists of 68 items and participants either responded on an ordinal or dichotomous scale. Eight demographic and study-maintenance items were excluded from the analyses. For accuracy of interpretation, separate EFAs were conducted for all items with response options on an ordinal versus dichotomous scale (Kline, 2005).

First, an EFA was conducted with 29 total items (items 29 to 54) in which response options were on an ordinal scale. Six factors were extracted that accounted for 63% of the variance of the items (Preacher & MacCallum, 2003). All items had communalities above .20 and pattern coefficients above .32 (Kline, 2005). Communalities ranged from .22 to .81, and pattern coefficients ranged from .35 to .98. The factors were labeled as (a) *Parent Mood Characteristics* (items 37-39, 41-42, 44a-46a, 48-50); (b) *Safety in the Home* (items 32-36); (c) *Depression of an Alternate Caregiver* (items 44b-46b); (d) *Discipline Style* (items 40, 47, 53, 54); (e) *Neighborhood Characteristics* (items 29-31); and (f) *Antisocial Characteristics of the Parent* (items 43, 51-52). These factors did not correspond to parental responsivity as conceptualized in this study, therefore none of these factors were used to measure parental responsivity.

A second EFA was conducted with all items with dichotomous response options. Based on Kaiser's rule, 9 factors were extracted that accounted for 60% of the variance of the 31 items (Preacher & MacCallum, 2003). Communalities and pattern coefficients were examined and six items (i.e., 2, 11, 12, 13, 21, 27b) were dropped due to communalities below .20 (Kline, 2005). I conducted a follow-up EFA without these

items, which resulted in a 7-factor solution. Communalities ranged from .27 to .68. The pattern of the factor loadings suggested that only 6 of the 7 factors were uniquely defined that accounted for 58% of the variance.

Factors 2, 3 and 4 did not correspond to parental responsivity as conceptualized in this study. Factor 2 was made up of items that reflected the manner in which the interviewer acquired information (i.e., through direct observation or by interview questions) related to *Stimulating Materials in the Home* (items 25b-26b, 28b). This factor appeared to capture methodology, rather than item content. Factor 3 appeared to assess *Parent Discipline Style* (items 15-17) and Factor 4 assessed the *Types of Stimulating Materials in the Home* (e.g., art work and magazines; items 3, 14, 25a-28a). None of these items were appropriate for measuring parental responsivity and were not used.

Three factors were retained to measure parental responsivity and were labeled as *Warmth to the Child* (Factor 1), *Verbal Interaction* (Factor 5), and *Overall Child Stimulation* (Factor 6). The retained factors accounted for 29.79% of the variance. For Factor 1 (20%; 7 items), pattern coefficients ranged from .35 to .74. For Factor 5 (5.1%; 2 items), pattern coefficients ranged from .77 to .83. For Factor 6 (5%; 4 items), coefficients ranged from .67 to .79. Internal consistency reliability for the three factors were: Factor 1 (α = .74), Factor 5 (α = .75), and Factor 6 (α = .69). See Table 3 for communalities and the pattern coefficient matrix for non-retained and retained factors.

Based on factor correlations (ranging from .48 to .62) and the face validity of the items on each factor, I combined factors 1, 5, and 6 to measure the construct of parental responsivity for the current study. In summary, parental responsivity was measured using 13 items representing three factors. Previous studies using Early Steps data measured

TABLE 3. Communalities and Pattern Coefficient Matrix for HOME Factors 1 to 6

HOME item	h^2	Pattern coefficients 1	2	3	4	5	6
10. Parent helps child demonstrate some achievement during visit.	.45	.74	--	--	--	--	--
20. Parent converses with child at least twice during visit.	.48	.73	--	--	--	--	--
8. Parent praises child's qualities twice during visit (e.g. skill, strength or accomplishment).	.44	.72	--	--	--	--	--
9. Parent caresses, kisses, or cuddles child during visit.	.52	.70	--	--	--	--	--
6. Parent shows some positive emotional response to praise of child by visitor.	.37	.68	--	--	--	--	--
7. Parent's voice conveys positive feelings about the child.	.42	.56	--	--	--	--	--
4. Parent uses complex sentence structure and vocabulary.	.30	.35	--	--	--	--	--
26b. The family possesses at least one periodical? (Observed or interview?)	.68	--	.88	--	--	--	--
28b. The family listens to a variety of music. (Observed or interview?)	.67	--	.87	--	--	--	--
25b. Three children's books are present. (Observed or interview?)	.57	--	.78	--	--	--	--
17. Parent neither slaps nor spanks child during visit.	.41	--	--	.77	--	--	--
16. Parent does not use physical restraint during visit.	.42	--	--	.75	--	--	--
15. Parent does not scold or yell at or derogate child mzzore than once.	.37	--	--	.62	--	--	--
25a. Three children's books are present.	.55	--	--	--	.75	--	--
26a. The family possesses at least one periodical.	.39	--	--	--	.68	--	--
28a. The family listens to a variety of music.	.38	--	--	--	.63	--	--
14. Children's artwork is displayed some place in the house.	.27	--	--	--	.50	--	--
27a. There is artwork in the home.	.30	--	--	--	.43	--	--
3. Parent uses correct grammar and pronunciation.	.30	--	--	--	.37	--	--
5. Parent responds verbally to child's speech.	.43	--	--	--	--	.83	--
19. Parent answers child's questions or requests verbally.	.42	--	--	--	--	.77	--
22. Parent keeps child in visual range, looks often.	.43	--	--	--	--	--	.79
23. Parent talks to child while doing household work.	.49	--	--	--	--	--	.73
18. Parent encourages child to talk and takes time to listen.	.56	--	--	--	--	--	.70
24. Parent structures child's play periods.	.44	--	--	--	--	--	.67

Note. Coefficients smaller than .30 are omitted.

parental responsivity and involvement using only 3 of the 13 items, with alphas ranging from .53 to .68 (Lunkenheimer et al., 2008; Shaw et al., 2006). The combined alpha for all 13 items is .81 in the present sample.

Descriptive Statistics and Statistical Assumptions

The mean, standard deviation, alpha coefficients, range, and normality coefficients for each variable are presented in Table 4. Alpha reliability coefficients for each measure ranged from .75 to .92.

TABLE 4. Descriptive Statistics, Reliability, and Normality for Measured Variables

Variable	*M*	*SD*	α	Range	Skew	Kurtosis
1. Ethnic discrimination	12.95	5.16	.86	9 – 36	1.56	2.15
2. SES discrimination	13.62	5.86	.89	9 – 37	1.57	2.39
3. Neighborhood danger	7.01	6.99	.86	0 – 37	1.38	1.71
4. Satisf. w/ social support	18.90	4.16	.80	6 – 25	-0.85	0.28
5. Overall life satisfaction	23.90	4.85	.75	8 – 33	-0.50	-0.39
6. Neighborhood connect.	15.04	7.80	.86	5 – 35	0.59	-0.54
7. Parental self-efficacy	47.25	6.55	.81	12 – 60	-1.07	1.63
8. Parenting stress/ hassles	90.93	21.02	.92	51 – 168	0.59	0.26
9. Parental responsivity	10.00	2.76	.81	0 – 13	-1.11	1.10
12. Depression (Time 1)	16.36	10.84	.91	0 – 51	0.87	0.26
13. Depression (Time 2)	15.42	10.70	.91	0 – 55	1.06	0.90
14. Depression (Time 3)	15.07	11.03	.92	0 – 53	0.99	0.67

Note. Ethnic discrimination, SES discrimination, Neighborhood danger, and Depression (Times 1, 2, and 3) were positively skewed. Satisfaction with social support, Parental self-efficacy, and Parental responsivity were negatively skewed.

Multivariate normality and linearity are the primary statistical assumptions that underlie SEM and are important for making accurate statistical inferences when using maximum likelihood estimation (Kline, 2005). Skewness and kurtosis statistics were examined using the following cutoffs: -0.8 to .8 (skew) and -3 to 3 (kurtosis) (Olinsky et al., 2003). Examination of skew and kurtosis, as well as visual inspection of histograms, indicated that data distributions were not normal for the following variables: discrimination due to ethnicity and SES, neighborhood danger, satisfaction with social support, parental self-efficacy, parental responsivity, and depression (Times 1 to 3). Skewness was out of range for these variables, however kurtosis appeared normal for each variable (Olinsky et al., 2003). The violation of normality was addressed with the recommended approach of using maximum likelihood with robust standard errors during structural equation modeling (Muthen & Muthen, 2010a).

Bivariate Correlations

A zero order correlation matrix of study variables is presented in Table 5. Correlations were all in the expected direction, though some were of small magnitude or non-significant. Indicator variables for the *Adverse* and *Protective* latent factors were significantly correlated with one another in the expected directions. As expected, high levels of discrimination due to SES were significantly related to low levels of PSE, high stress, and depression (at each time point). Unexpectedly, discrimination due to ethnicity was not significantly correlated with PSE or stress. It was, however, significantly related to depression (Times 1 and 3) and to lower levels of life satisfaction and neighborhood connectedness. Levels of PSE significantly and inversely correlated with parenting stress

TABLE 5. Bivariate Correlations Among Measured Variables for Whole Sample

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Ethn disc.	---										
2. SES disc.	.66**	---									
3. N. danger	.26**	.27**	---								
4. S. support	-.07	-.17**	-.04	---							
5. Life satis.	-.12*	-.22**	-.13*	.58**	---						
6. N. connect	-.13*	-.14*	-.28**	.13*	.30**	---					
7. PSE	-.06	-.11*	-.01	.22**	.30**	.15**	---				
8. Stress	.09	.13*	.12*	-.26**	-.25**	-.02	-.32**	---			
9. Responsiv.	.09	.10	.05	.03	.14*	.03	-.01	-.01	---		
10. Depress 3	.11*	.22**	.22**	-.40**	-.47**	-.14*	-.26**	.33**	-.02	---	
11. Depress 4	.04	.17**	.17**	-.30**	-.37**	-.07	-.29**	.40**	-.10	.57**	---
12. Depress 5	.14*	.18**	.15**	-.28**	-.34**	-.09	-.20**	.31**	-.09	.51**	.55**

Note. Ethn disc. = ethnic discrimination; SES disc. = SES discrimination; N. danger = neighborhood danger; S. support = satisfaction with social support; Life satis. = overall life satisfaction; N. connect = neighborhood connectedness; PSE = parental self-efficacy; Stress = parenting stress; Responsiv. = parental responsivity; Depress 3 = Depression at child age 3; Depress 4 = Depression at child age 4; Depress 5 = depression at child age 5.

*$p \leq .05$ (2-tailed). **$p \leq .01$ (2-tailed).

and depression, and PSE significantly positively correlated with satisfaction with social support, overall life satisfaction, and neighborhood connectedness. As expected, parenting stress and depression at all time points were positively correlated. Stress level was significantly and inversely correlated with levels of satisfaction with social support and overall life satisfaction, but was not correlated with neighborhood connectedness. Unexpectedly, parental responsivity was not significantly correlated with the majority of variables, including ethnic discrimination, SES discrimination, neighborhood danger, PSE, stress, and depression. It was, however, positively correlated with overall life satisfaction.

Multivariate Analysis of Variance

A multivariate analysis of variance (MANOVA) was conducted to test for significant mean differences in the variables in the model based on ethnic group membership. The dependent variables included: ethnic discrimination, SES discrimination, neighborhood danger, satisfaction with social support, overall life satisfaction, depression, PSE, stress, and parental responsivity. The data in the current study did not meet the statistical assumption of multivariate normality that is recommended for conducting a MANOVA, however, it did meet the assumption that there are no extreme outliers. I continued with the analysis because MANOVAs are robust to moderate violations of normality in situations when the violation is due to skewness (and not outliers) (Tabachnick & Fidell, 2001). Box's *M* Test [$F(198, 6295) = 364.89$, $p < .01$] indicated that the data did not meet the assumption of multivariate

normality, thus a more robust multivariate test statistic (i.e., Pillai's Trace) was chosen to interpret the results (Tabachnick & Fidell, 2001).

MANOVA results revealed significant differences on the dependent variables as a function of ethnic group, Pillai's Trace = .438, $F(55, 1475) = 2.58$, $p < .01$. An analysis of variance (ANOVA) was conducted on the dependent variables as a follow-up test to the MANOVA. To counteract the potential of an inflated Type I error rate, a Bonferroni adjustment was applied (i.e., $p \leq .005$). Ethnic group differences were significant for ethnic discrimination [$F(5, 301) = 6.593$, $p < .005$, partial $\eta^2 = .099$] and neighborhood danger [$F(5, 301) = 4.433$, $p < .005$, partial $\eta^2 = .069$]. See Table 6 for a summary of ANOVA statistics.

The Scheffé post hoc test was conducted to determine which ethnic group categories were significantly different. Results revealed that the European American group significantly differed in ethnic discrimination from the African American (*Mean Difference* = -3.16; *SE* = .643; $p = .000$) and Latino groups (*Mean Difference* = -3.54; *SE* = .946; $p = .017$). Additionally, the African American group significantly differed in neighborhood danger scores from the European American (*Mean Difference* = -3.15; *SE* = .885; $p = .029$) and Latino (*Mean Difference* = 5.45; *SE* = 1.376; $p = .009$) mothers. See Table 7 for means and standard deviations for ethnic discrimination and neighborhood danger scores for the European American, African American, and Latino groups.

Overall, the analyses indicated that African American and Latino mothers in the current sample experienced significantly higher levels of ethnic discrimination than European American mothers. Also, African American mothers rated their neighborhoods as significantly more dangerous than European American and Latino mothers.

TABLE 6. ANOVA Summary Table

Variable	*SS*	*df*	*MS*	*F*	*P*	η^2
Ethnic discrimination	805.49	5	161.10	6.59	.000*	.099
SES discrimination	61.75	5	12.35	.36	.879	.006
Neighborhood danger	1,025.43	5	205.09	4.43	.001*	.069
Neighborhood connectedness	590.94	5	118.19	1.97	.083	.032
Parental self-efficacy	299.58	5	59.92		.22	.023
Parenting stress	1,835.67	5	367.13	.83	.53	.014
Depression (age 3)	591.43	5	118.29	1.01	.41	.016
Depression (age 5)	413.02	5	82.60	.68	.64	.011
Satisfaction with social support	33.67	5	6.73	.39	.86	.006
Overall life satisfaction	104.03	5	20.81	.88	.49	.014
Parental responsivity	112.47	5	22.49	3.05	.01	.048

*$p \leq .005$ with Bonferroni adjustment.

TABLE 7. Means and Standard Deviations for Ethnic Discrimination and Neighborhood Danger by Ethnicity

	Ethnic discrimination		Neighborhood danger	
Ethnicity	*M*	*SD*	*M*	*SD*
European American	11.43	3.65	6.33	5.93
African American	14.59	5.96	9.48	8.64
Latino	14.97	5.96	4.03	5.58

Model Testing

Structural equation modeling (SEM) was conducted using Mplus 6.0 software (Muthen & Muthen, 2010b). Two multiple-mediator models were tested. The difference between Model 1 and Model 2 was that maternal depression was included as a variable in Model 2. Based on the results, reduced post hoc models were then tested for each model

(Model 1 Post Hoc and Model 2 Post Hoc A). A second post hoc test of Model 2 (Model 2 Post Hoc B) was conducted that included maternal depression in the model at Time 3. Next, I conducted a multi-group analysis examining group differences based on ethnicity. Based on findings from the multi-group analysis, I conducted a third post hoc test of Model 2 (Model 2 Post Hoc C) that dropped neighborhood connectedness from the *Protective* latent factor. For the sake of clarity, I present the third post hoc test of Model 2 prior to presenting the multi-group analysis.

To maximize on one of the strengths of SEM, I chose to construct two latent factors supported by theory (Schreiber, Nora, Stage, Barlow, & King, 2006). The latent constructs were estimated from three indicator variables each and labeled "*Adverse* latent factor" and "*Protective* latent factor". The *Adverse* latent factor included ethnic discrimination, SES discrimination, and neighborhood danger. The *Protective* latent factor included satisfaction with social support, overall life satisfaction, and neighborhood connectedness. Correlations among the indicator variables were significant and supported construction of the latent factors (see Table 5). The use of latent factors allowed for a more parsimonious model, as well as increased interpretability (Kline, 2005). Rather than create a composite of the indicators and use them as a single variable in the model (i.e., by averaging or summing them), I chose a more conservative approach and tested the constructs directly in the context of the model (Kline, 2005). Thus, in one modeling step, the latent constructs (*Adverse* and *Protective*) were specified as being made up of the observed indicator variables and the hypothesized relationships between the variables in the model were tested. As indicated by model fit indices, the indicators appeared to load onto the expected *Adverse* and *Protective* latent factors.

Each model that I tested included both the *Adverse* and *Protective* latent factors at Time 1 (child age 3). The exogenous *Adverse* latent factor consisted of the following indicator variables and factor loadings: ethnic discrimination (.73 to .74), SES discrimination (.89 to .91), and neighborhood danger experiences (.32). The endogenous *Protective* latent factor consisted of the following indicator variables: satisfaction with social support (.65 to .66), overall life satisfaction (.88 to .89), and neighborhood connectedness (.32). Only the final model (Model 2 Post Hoc C) excluded neighborhood connectedness from the *Protective* latent factor, and a composite of satisfaction with social support and overall life satisfaction was used for this model.

Model-fit was assessed for all models with a joint consideration of the chi-square statistic (χ^2), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) (Hu & Bentler, 1999). Good model fit is evidenced by a nonsignificant chi-square, which suggests that the hypothesized model is not different from a perfect model. A CFI of at least .95 represents very good model fit, and a CFI of .90 to < .95 represents adequate model fit (Hu & Bentler, 1999). An RMSEA of .05 or less represents a very good fit, while .08 to > .05 suggests adequate fit (Hu & Bentler, 1999).

Model 1

The first hypothesized model is presented in Figure 3 with standardized parameter estimates included for each path. The exogenous variable was the *Adverse* latent factor

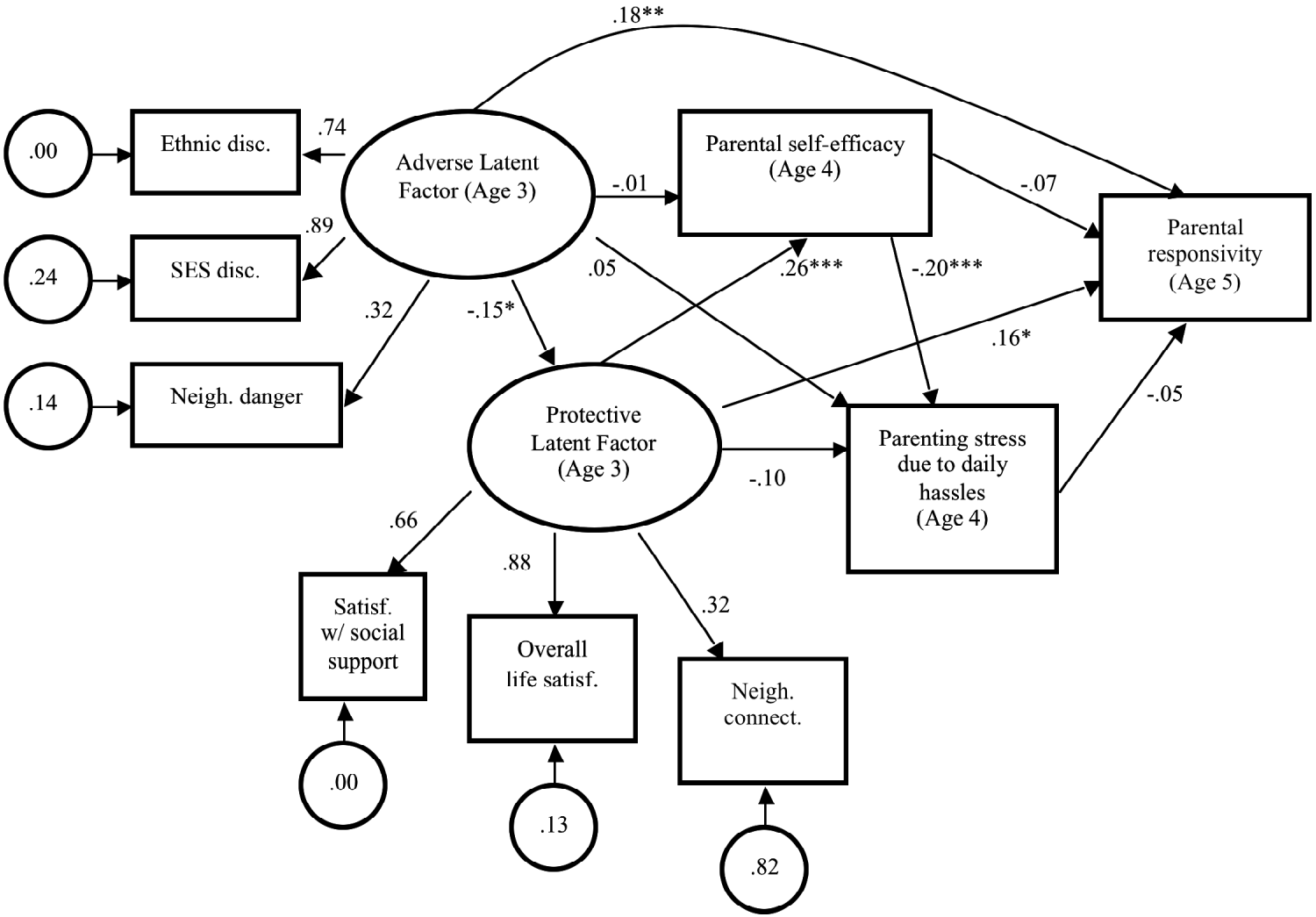

FIGURE 3. Model 1 with standardized parameter estimates. Controlled for maternal depression at each time point. *$p < .05$. **$p < .01$. ***$p < .001$.

at Time 1. The endogenous variables were: the *Protective* latent factor (Time 1), PSE (Time 2), parenting stress due to daily hassles (Time 2), and parental responsivity (Time 3). Depression was controlled for at each time point by including it as a covariate in the regression when running the model.

The chi-square statistic value was statistically significant, (χ^2 [40, N = 307] = 76.63, p = < .01). However, this statistic is sensitive to large sample sizes (Hu & Bentler, 1999). Examination of both the CFI (.933) and RMSEA (.055) suggested that the model adequately fit the data. Overall, the goodness-of-fit indices for the model indicated adequate model fit.

It was hypothesized that adverse conditions would relate to low levels of protective factors, low PSE, high stress, and low parental responsivity. It was also hypothesized that the existence of protective conditions would relate to high PSE, low stress, and high parental responsivity. Lastly, it was hypothesized that PSE and stress would have direct effects on parental responsivity.

Five paths were significant in the hypothesized model (see Figure 3). Table 8 provides parameter estimates (unstandardized and standardized), *z*-values, and *p*-values for Model 1 and Model 1 Post Hoc. As expected, the *Adverse* latent factor significantly predicted the *Protective* latent factor (β = -.15, p = .025) and parental responsivity (β = .18, p = .006). Protective factors predicted PSE (β = .26, p < .0001) and parental responsivity (β =.16, p = .031), but not stress (β = -.10, p = .151). Lastly, PSE predicted stress in the expected direction (β = -.20, p < .0001).

TABLE 8. Path Statistics for Model 1 and Model 1 Post Hoc

Path	Unstandardized parameter estimate	Standardized parameter estimate (β)	*Z*	*p*
Model 1				
Adverse to Protective	-0.02	-0.15	-2.25	.025*
Adverse to Stress	0.29	0.05	0.99	.323
Adverse to PSE	-0.02	-0.01	-0.15	.879
Adverse to Responsivity	0.13	0.18	2.74	.006**
Protective to PSE	2.88	0.26	4.10	<.0001***
Protective to Stress	-3.49	-0.10	-1.44	.151
Protective to Responsivity	0.72	0.16	2.16	.031*
PSE to Stress	-0.64	-0.20	-3.96	<.0001***
PSE to Responsivity	-0.03	-0.07	-1.20	.232
Stress to Responsivity	-0.01	-0.05	-0.61	.541
Model 1 Post Hoc (Reduced)				
Adverse to Protective	-0.02	-0.15	-2.23	.026*
Adverse to Stress	0.29	0.05	0.99	.324
Adverse to Responsivity	0.13	0.18	2.74	.006**
Protective to PSE	2.92	0.27	4.37	<.001***
Protective to Stress	-3.49	-0.10	-1.44	.151
Protective to Responsivity	0.72	0.16	2.16	.031*
PSE to Stress	-0.64	-0.20	-3.96	<.0001***
PSE to Responsivity	-0.03	-0.07	-1.21	.227
Stress to Responsivity	-0.01	-0.05	-0.61	.541

*$p < .05$. **$p < .01$. ***$p < .001$.

Contrary to expectation, the following paths were not significant: The *Adverse* latent factor did not predict maternal stress (β = .05, p = .323) or PSE (β = -.01, p = .879). Paths from stress (β = -.05, p = .541) and PSE (β = -.07, p = .232) to parental responsivity also were not significant. The path from the *Protective* latent factor to stress was not significant (β = -.10, p = .151).

The squared multiple correlation coefficients (R^2) indicated that the *Adverse* latent factor explained 54.8% of the variance in ethnic discrimination, 79.2% of the variance in SES discrimination, and 10.2% of the variance in neighborhood danger. The *Protective* latent factor explained 42.8% of the variance in satisfaction with social support, 77.8% of the variance in overall life satisfaction, and 9.9% of the variance in neighborhood connectedness. The *Adverse* latent factor explained 32% of the variance in the *Protective* latent factor. The model accounted for 13.6% of the variance in PSE, 21% of the variance in stress, and 4.9% of the variance in parental responsivity. See Table 9 for the squared multiple correlation coefficients for Model 1.

TABLE 9. Squared Multiple Correlation Coefficients (R^2) for Model 1

Variable	R^2 (%)
Ethnic discrimination	54.8
SES discrimination	79.2
Neighborhood danger	10.2
Satisfaction with social support	42.8
Overall life satisfaction	77.8
Neighborhood connectedness	9.9
Protective latent factor	32.0
PSE	13.6
Stress	21.0
Parental responsivity	4.9

Unexpectedly, there were no significant indirect effects (i.e., mediation effects) in this model. A number of indirect effects were expected. First, I hypothesized that the *Protective* latent factor would mediate the relationship between the *Adverse* latent factor and parental responsivity (β = -.02, p = .129). Second, I expected that *Protective* factors would also mediate the relationship between *Adverse* factors and parent cognitions of

PSE (β = .00, p = .303) and stress (β = -.00, p = .595). Last, I expected that PSE would mediate the relationships between *Adverse* factors and parental responsivity (β = .00, p = .878), as well as between *Adverse* factors and stress (β = .00, p = .882). Findings were not consistent with any of these hypothesized indirect effects.

Model 1 Post Hoc (Reduced)

In order to explore a more parsimonious model, a reduced model was tested in which the non-significant path between the *Adverse* latent factor and PSE was dropped (see Figure 4). This decision was made based on theoretical justification (Ardelt & Eccles, 2001; Jarrett, 1994; O'Neil et al., 2009) and evaluation of the parameter estimates (Kline, 2005).

Overall, the slight improvement in model-fit indices was not significant. The chi-square statistic remained significant (χ^2 [41, N = 307] = 76.20, p = < .01). The CFI (.935) and RMSEA (.053) indices were still consistent with an adequate fit. The parameter estimates and significance values were similar to values from the hypothesized model (except for the excluded path from the *Adverse* latent factor to PSE; see Table 8).

Model 2

The second hypothesized model is shown in Figure 5. This model differs from Model 1 in that maternal depression is represented directly in the model as an exogenous variable at Time 1. Instead of controlling for depression at each time point as in Model 1, this competing model was tested given that maternal depression is such a prominent

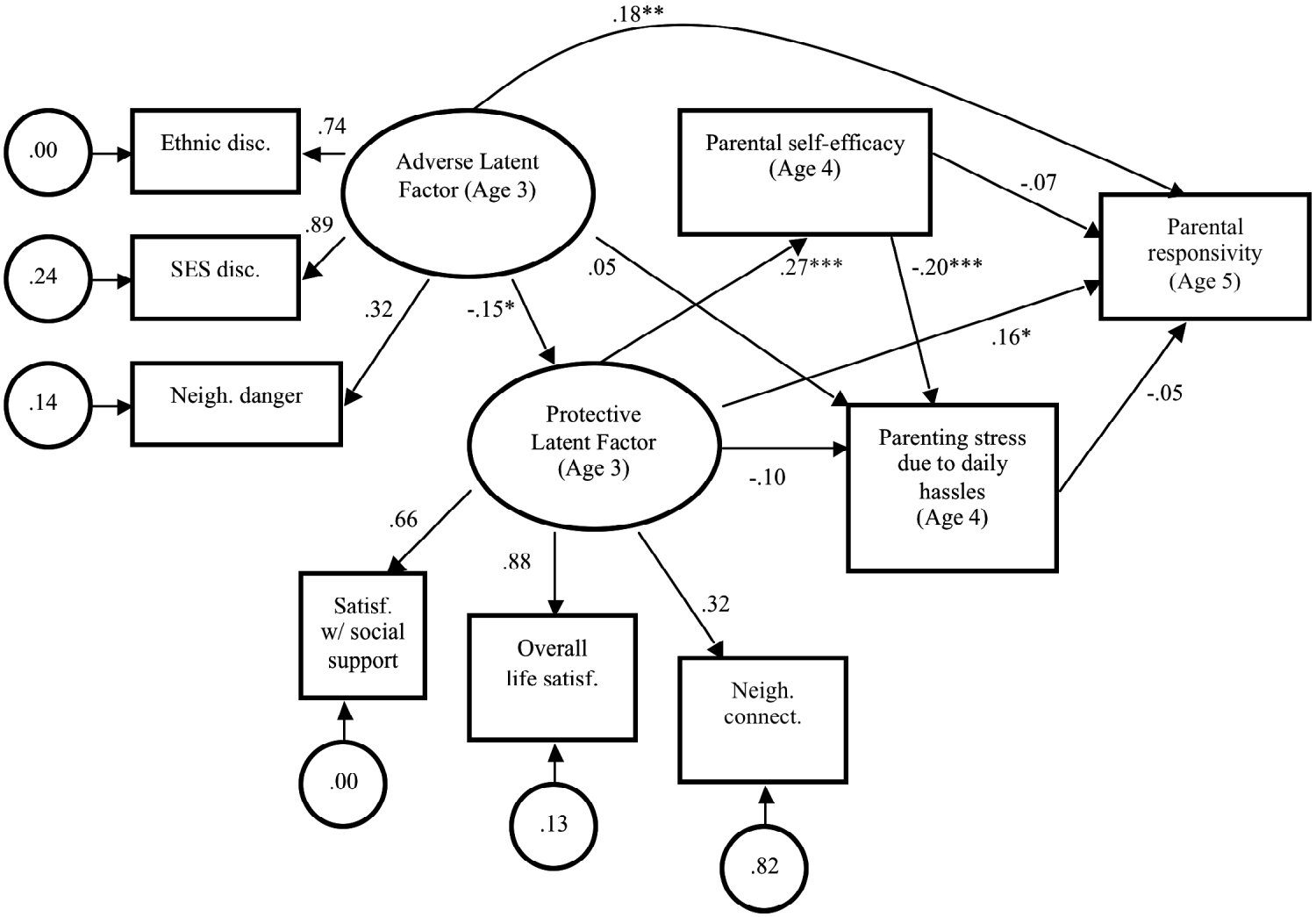

FIGURE 4. Model 1 post hoc (reduced) with standardized parameter estimates. Controlled for maternal depression at each time point. *$p < .05$. **$p < .01$. ***$p < .001$

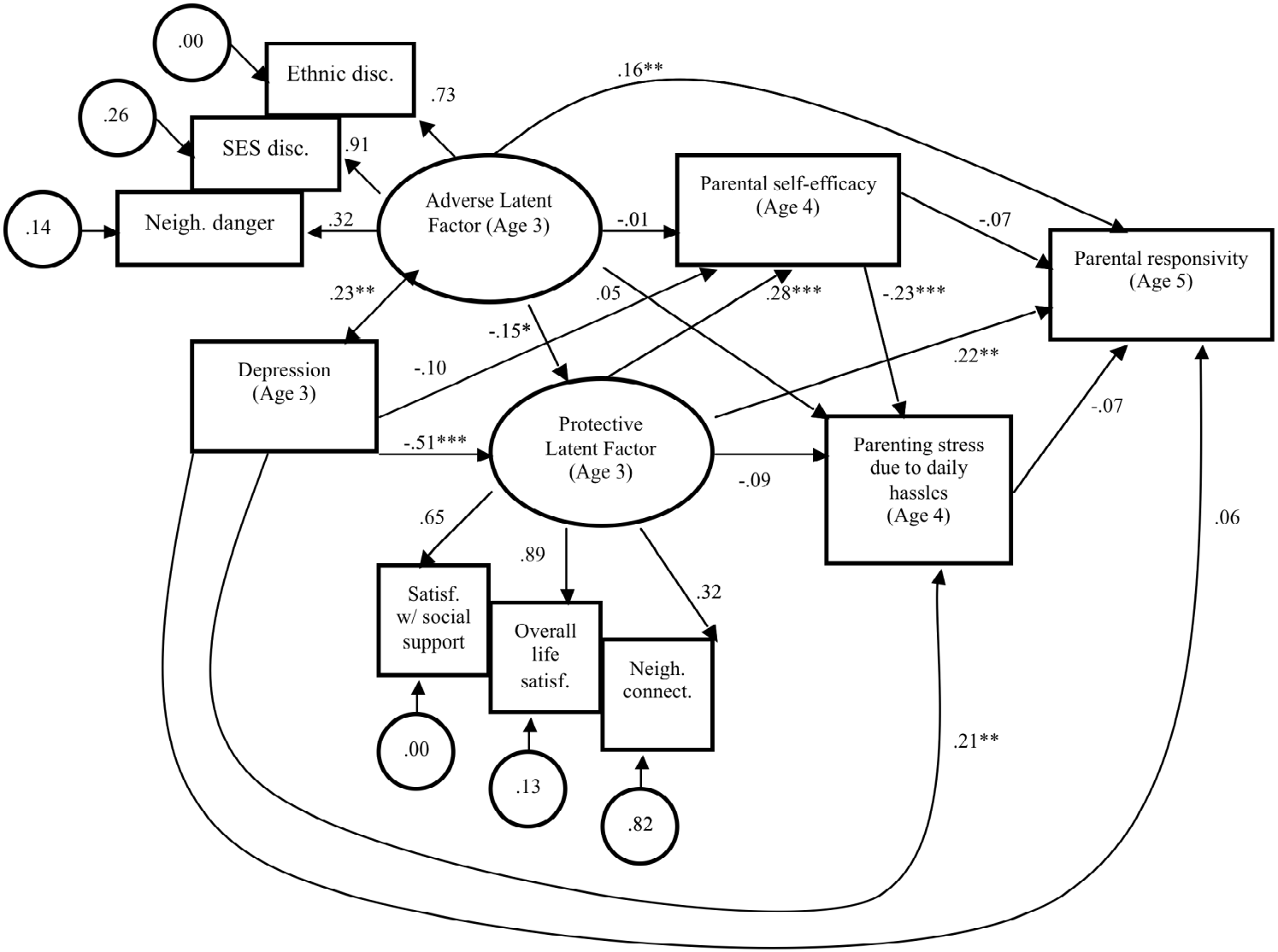

FIGURE 5. Model 2 with standardized parameter estimates. *$p < .05$. **$p < .01$. ***$p < .001$.

concern among families and reduces maternal responsivity and the implementation of effective parenting practices (Lovejoy et al., 2000). Maternal depression has also been shown to impact PSE and stress (Fox & Gelfand, 1994; O'Neil et al., 2009). The *Adverse* latent factor was allowed to correlate with depression. The same relationships were hypothesized as with Model 1. Additionally, it was expected that depression at Time 1 would predict low levels of protective factors, low PSE, high stress, and low maternal responsivity at Time 3.

Similar to Model 1, results suggested that the data adequately fit the model: (χ^2 [24, N = 307] = 54.47, p = < .01), CFI = .939, and RMSEA = .064. Both hypothesized Models 1 and 2 appear to fit the data equally well.

Overall, there were more significant direct paths and two mediation effects found in this model, as compared to Model 1. There were a total of 7 significant paths. See Table 10 for parameter estimates, *z*-values, and *p*-values for Model 2. Additionally, maternal depression at age 3 was associated with lower protective factors (β = -.51, p < .0001), as well as higher stress (β = .21, p = .004) at age 4. Surprisingly, depression did not significantly predict mother's PSE or responsivity.

The squared multiple correlations for Model 2 are presented in Table 11. The *Adverse* latent factor explained 53% of the variance in ethnic discrimination, 82.2% in SES discrimination, 9.8% in neighborhood danger, and 32% in the *Protective* latent factor. The *Protective* latent factor explained 42.3% of the variance in satisfaction with social support, 78.8% in overall life satisfaction, and 9.8% in neighborhood connectedness. The model accounted for 12.4% of the variance in PSE, 18% in stress, and 5.2% in parental responsivity.

TABLE 10. Path Statistics for Model 2 and Model 2 Post Hoc A (Reduced)

Path	Unstandardized parameter estimate	Standardized parameter estimate (β)	*z*	*P*
Model 2				
Adverse to Protective	-0.02	-0.15	-2.27	.024*
Adverse to Stress	0.26	0.05	0.89	.372
Adverse to PSE	-0.02	-0.01	-0.19	.848
Adverse to Responsivity	0.12	0.16	2.61	.009**
Depression to Protective	-0.03	-0.51	-6.24	<.0001***
Depression to PSE	-0.06	-0.10	-1.32	.186
Depression to Stress	0.40	0.21	2.91	.004**
Depression to Responsivity	0.02	0.06	0.91	.361
Protective to PSE	3.14	0.28	3.30	<.001***
Protective to Stress	-3.18	-0.09	-1.05	.296
Protective to Responsivity	1.01	0.22	2.60	.009**
PSE to Stress	-0.74	-0.23	-4.44	<.0001***
PSE to Responsivity	-0.03	-0.07	-1.17	.244
Stress to Responsivity	-0.01	-0.07	-0.88	.377
Model 2 Post Hoc A (Reduced)				
Adverse to Protective	-0.02	-0.15	-2.25	.024*
Adverse to Stress	0.26	0.05	0.89	.372
Adverse to Responsivity	0.12	0.16	2.62	.009**
Depression to Protective	-0.03	-0.51	-6.25	<.0001***
Depression to PSE	-0.06	-0.10	-1.34	.181
Depression to Stress	0.40	0.21	2.91	.004**
Depression to Responsivity	0.02	0.06	0.91	.361
Protective to PSE	3.18	0.29	3.41	<.001***
Protective to Stress	-3.18	-0.09	-1.05	.296
Protective to Responsivity	1.01	0.22	2.59	<.010**
PSE to Stress	-0.74	-0.23	-4.44	<.001***
PSE to Responsivity	-0.03	-0.07	-1.18	.240
Stress to Responsivity	-0.01	-0.07	-0.88	.377

Note. *$p < .05$, ** $p < .01$, ***$p < .001$

TABLE 11. Squared Multiple Correlation Coefficients (R^2) for Model 2

Variable	R^2 (%)
Ethnic discrimination	53.0
SES discrimination	82.2
Neighborhood danger	9.8
Satisfaction with social support	42.3
Overall life satisfaction	78.8
Neighborhood connectedness	9.8
Protective latent factor	32.0
PSE	12.4
Stress	18.0
Parental responsivity	5.2

It was hypothesized that protective factors would serve as a mediator between depression and PSE, stress, and parental responsivity, respectively. Unlike Model 1, there were significant indirect effects of interest in Model 2 due to the addition of depression in the model. First, the *Protective* latent factor served as a mediator between depression and PSE (β = -.14, p = .003). Second, protective factors mediated the relationship between depression and parental responsivity (β = -.11, p = .009). However, the *Protective* latent factor did not mediate the relationship between depression and stress (β = .05, p = .304).

Model 2 Post Hoc A (Reduced)

In order to explore a more parsimonious model, a reduced model was tested in which the non-significant path between the *Adverse* latent factor and PSE was dropped. The reduced model is represented in Figure 6. Similar to the Model 1 post hoc test,

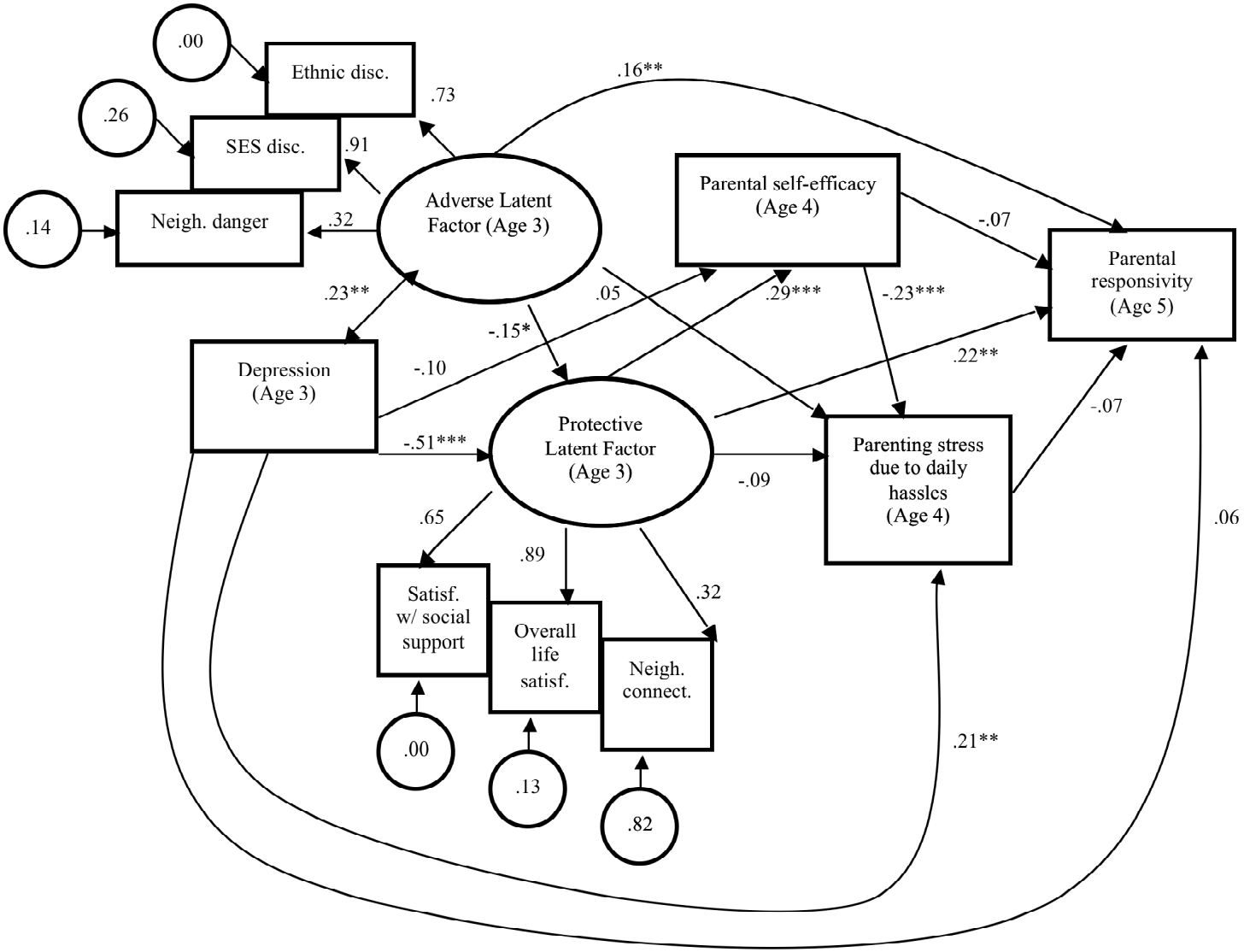

FIGURE 6. Model 2 post hoc A (reduced) with standardized parameter estimates. *$p < .05$. **$p < .01$. ***$p < .001$.

dropping the path from the *Adverse* latent factor to PSE did not improve fit-indices. The data remained an adequate fit to the model (χ^2 [25, N = 307] = 54.03, p = < .01). The CFI changed from .939 to .942. The RMSEA changed from .064 to .062. However, these cutoffs still represent adequate fit. The parameter estimates and significance values were similar to values from the hypothesized model (see Table 10).

Model 2 Post Hoc B (Depression at Time 3)

A second post hoc test of Model 2 was conducted (Model 2 Post Hoc B). This model included maternal depression as a variable at Time 3 (see Figure 7). Given the prevalence of maternal depression and its lasting effects, I incorporated depression in the model at child age 5 to test its effects on parental responsivity at the same time point. In addition to the relationships hypothesized in Models 1 and 2, the following relationships were hypothesized: (a) Depression at child age 3 (Time 1) would predict depression at child age 5 (Time 3), (b) parenting stress at Time 2 would predict depression at Time 3, (c) the *Protective* latent factor would be inversely related to depression at child age 5, and (d) depression at child age 5 would be related to low parental responsivity at the same time point.

The addition of maternal depression in the model at child age 5 improved model fit from adequate to very good as compared to the other tested models (see Table 12 for summary of model fit statistics). Model-fit indices were as follows: (χ^2 [31, N = 307] = 56.93, p = < .01), CFI = .956, and RMSEA = .052.

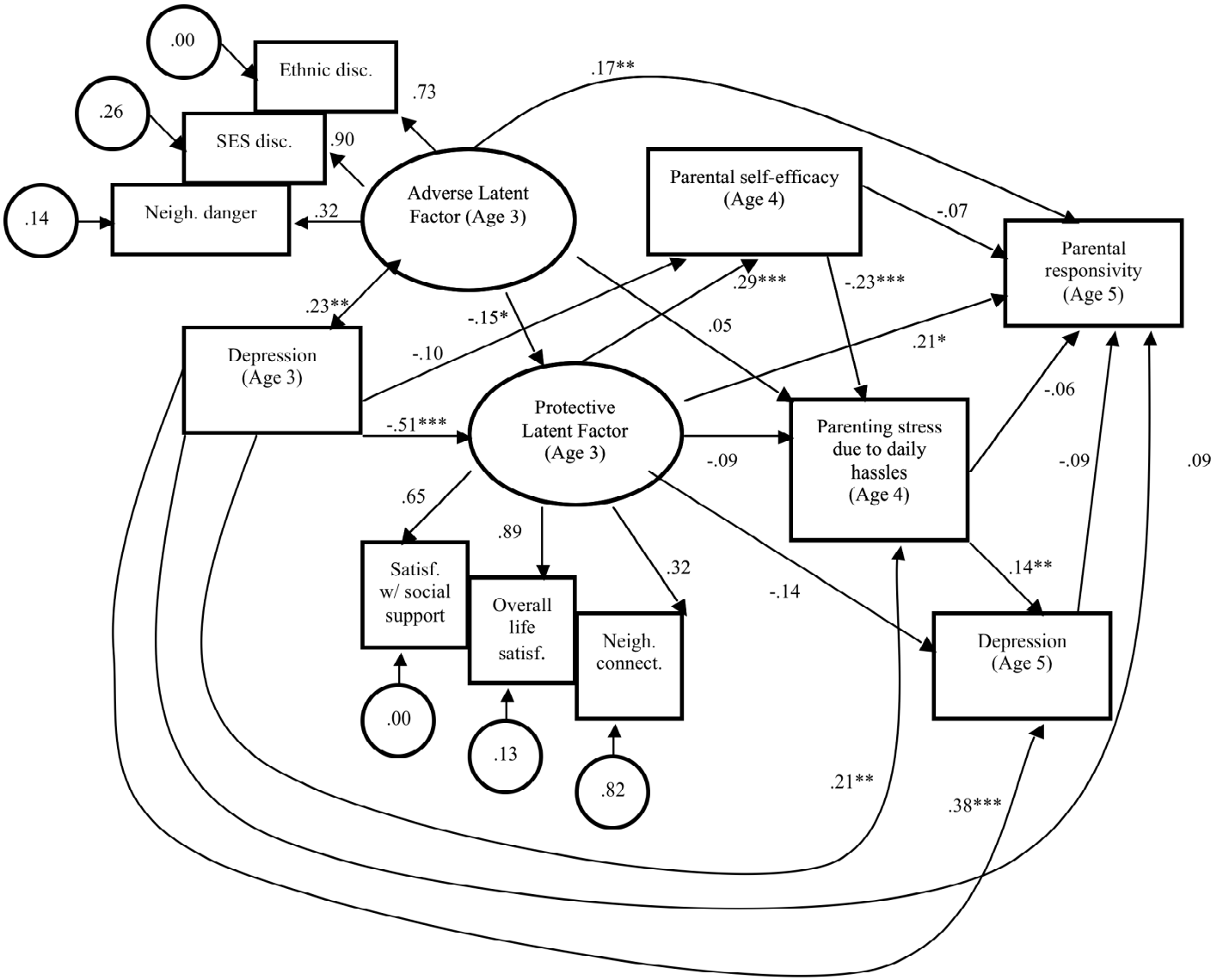

FIGURE 7. Model 2 post hoc B with standardized parameter estimates. *$p < .05$, **$p < .01$, ***$p < .001$

TABLE 12. Summary of Model Fit Statistics

Model	$\chi 2$	*df*	*P*	CFI	RMSEA
Model 1 (hypothesized)	76.63	40	.00	.933	.055
Model 1 post hoc (reduced)	76.20	41	.00	.935	.053
Model 2 (hypothesized)	54.47	24	.00	.939	.064
Model 2 post hoc A (reduced)	54.03	25	.00	.942	.062
Model 2 post hoc B (w/ depression)	56.93	31	.00	.956	.052
Model 2 post hoc C (w/o neighborhood connectedness)	19.70	15	.99	.989	.032

Note. CFI = Comparative fit index; RMSEA = Root-mean-square error of approximation.

There were a total of 9 significant paths, including the same paths that were significant in Model 2 Post Hoc A. See Table 13 for parameter estimates, *z*-values, and *p*-values for Model 2 Post Hoc B. The significant direct and indirect paths were comparable to Model 2 Post Hoc A. Additionally, maternal depression at child age 3 predicted depression at age 5 (β = .38, p = < .001), and level of parenting stress significantly predicted depression at age 5 (β = .14, p = .004). Unexpectedly, the *Protective* latent factor did not significantly predict depression at age 5 (β = -.14, p = .101), and depression at age 5 was not associated with parental responsivity at the same time point (β = -.09, p = .116). The model accounted for 6% of the variance in parental responsivity. (The squared multiple correlations for Model 2 Post Hoc B are compared with Model 2 Post Hoc C in Table 14.)

Model 2 Post Hoc C (Without Neighborhood Connectedness)

Based on EFA results from the multi-group analysis (see Multi-group Analysis section below), a third post hoc test of Model 2 was conducted (Model 2 Post Hoc C;

TABLE 13. Path Statistics for Model 2 Post Hoc B (Depression at Time 3) and C

Path	Unstandardized parameter estimate	Standardized parameter estimate (β)	*Z*	*P*
Model 2 Post Hoc B				
Adverse to Protective	-0.02	-0.15	-2.29	.022*
Adverse to Stress	0.26	0.05	0.89	.375
Adverse to Responsivity	0.13	0.17	2.74	.006**
Depression 3 to Protective	-0.03	-0.51	-6.32	<.0001***
Depression 3 to PSE	-0.06	-0.10	-1.33	.185
Depression 3 to Stress	0.40	0.21	2.91	.004**
Depression 3 to Responsivity	-0.02	-0.09	-1.57	.116
Depression 3 to Depression 5	0.39	0.38	5.61	<.0001***
Protective to PSE	3.19	0.29	3.41	<.001***
Protective to Stress	-3.19	-0.09	-1.04	.297
Protective to Responsivity	0.96	0.21	2.45	.014*
Protective to Depression 5	-2.67	-0.14	-1.64	.101
PSE to Stress	-0.74	-0.23	-4.44	<.001***
PSE to Responsivity	-0.03	-0.07	-1.21	.226
Stress to Responsivity	-0.01	-0.06	-0.70	.481
Stress to Depression 5	0.07	0.14	2.85	.004*
Depression 5 to Responsivity	-0.02	-0.09	-1.57	.116
Model 2 Post Hoc C				
Adverse to Protective	-0.02	-0.12	-1.97	.049*
Adverse to Stress	.267	.05	0.93	.353
Adverse to Responsivity	0.11	0.15	2.52	.012*
Depression 3 to Protective	-0.03	-0.46	-7.37	.0001***
Depression 3 to PSE	-0.09	-0.15	-1.92	.055
Depression 3 to Stress	0.39	0.20	3.18	.0015**
Depression 3 to Responsivity	0.01	0.06	0.81	.418
Depression 3 to Depression 5	0.41	0.41	6.58	.0001***
Protective to PSE	1.82	0.22	3.15	.0016**
Protective to Stress	-2.99	-0.11	-1.65	.1000
Protective to Responsivity	0.41	0.17	2.01	.044*
Protective to Depression 5	-1.51	-0.11	-1.46	.1451
PSE to Stress	-0.75	-0.23	-4.53	.0001***
PSE to Responsivity	-0.02	-0.05	-0.84	.4009
Stress to Responsivity	-0.01	-0.06	-0.71	.4765
Stress to Depression 5	0.08	0.15	2.92	.0035**
Depression 5 to Responsivity	-0.03	-0.10	-1.81	.0703

Note. *$p < .05$, ** $p < .01$, ***$p < .001$

TABLE 14. Squared Multiple Correlation Coefficients (R^2) for Model 2 Post Hoc B and C

Variable	Model 2 post hoc B R^2 (%)	Model 2 post hoc C R^2 (%)
Ethnic discrimination	53.3	53.0
SES discrimination	81.7	82.2
Neighborhood danger	9.9	9.7
Satisfaction with social support	42.4	---
Overall life satisfaction	78.5	---
Neighborhood connectedness	9.8	---
Protective latent factor	31.9	25.2
PSE	12.4	10.1
Stress	17.6	17.9
Depression 5	29.4	28.8
Parental responsivity	6.0	4.3

see Figure 8). This final model excluded neighborhood connectedness from the *Protective* Latent Factor because this variable failed to load onto either the *Adverse* or *Protective* factor when an EFA of the measurement model was conducted with participants who were members of an ethnic minority group. Also, bivariate correlations indicated that the relationships between neighborhood connectedness and a number of other variables differed for the European American and ethnic minority groups. The *Protective* factor for the current model was created by making a composite of the *overall life satisfaction* and *satisfaction with social support* scores. It was expected that dropping neighborhood connectedness from the latent factor would improve model fit.

Excluding neighborhood connectedness improved model fit to very good fit across all indices (see Table 12 for summary of model fit statistics). Model-fit indices were as follows: (χ^2 [15, N = 307] = 19.70, p = .99), CFI = .989, and RMSEA = .032.

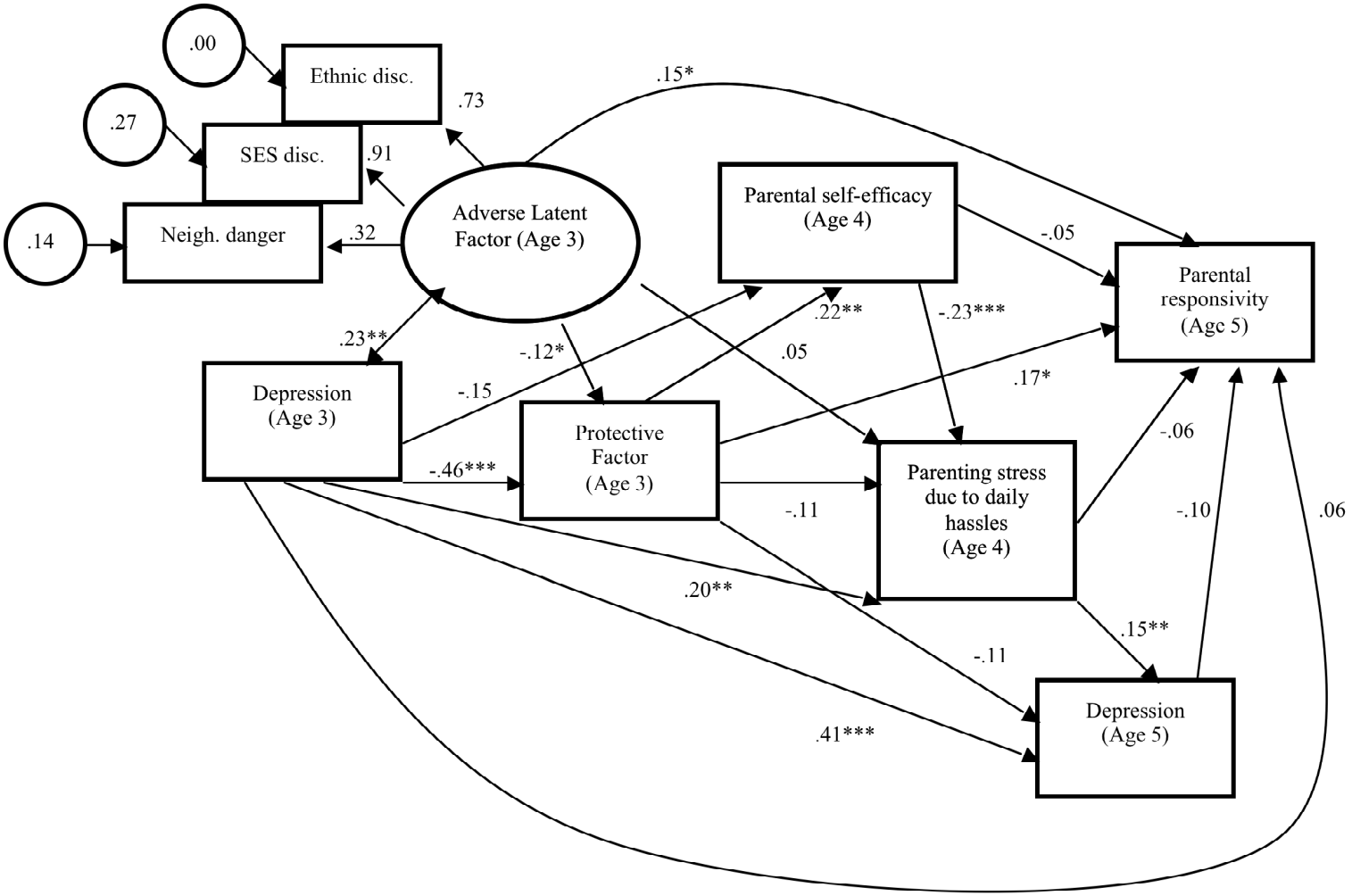

FIGURE 8. Model 2 post hoc C with standardized parameter estimates. *$p < .05$. **$p < .01$. ***$p < .001$.

There were a total of 9 significant paths and two significant indirect paths that were comparable to the significant paths in Model 2 Post Hoc B. See Table 13 for parameter estimates, *z*-values, and *p*-values for Model 2 Post Hoc C. The model accounted for 4% of the variance in parental responsivity. The squared multiple correlations for Model 2 Post Hoc C are presented in Table 14.

Multi-Group Analysis

A multiple group analysis was conducted to test for model invariance across ethnic groups. The multiple group analysis was tested with Model 2 Post Hoc B, given that this model fit the data better than prior models and was derived from the previous models. (Model 2 Post Hoc C was conducted in response to results from the multiple group analysis). Due to the predominance of European American mothers in the sample, there were not enough ethnic minority participants to conduct a multiple group analysis comparing each ethnic group. Instead, all mothers who identified as belonging to any ethnic minority group were grouped together (African American $n = 94$; Hispanic $n = 33$; Bi-racial $n = 13$; Native American $n = 5$; and Other $n = 3$). Thus, the analysis was conducted with 159 European American mothers and 148 ethnic-minority mothers.

Unexpectedly, the multi-group analysis did not converge on a defensible solution. When running both of the groups simultaneously, the measurement model (i.e., latent factors) produced parameter estimates with standardized effects greater than 1, as well as negative residual variances in some cases (i.e., Heywood case; Kline, 2005). This occurred when the groups were not constrained (i.e., parameter estimates were not specified in the model and were allowed to vary across groups to produce the best

parameter estimates possible), as well as when the groups were constrained to be equal (Kline, 2005). It is possible that the latent constructs were not stable in the sub-groups due to smaller sample sizes, as sample sizes below 200 can often produce erratic results (Kline, 2005). A number of analyses were conducted to explore why the multi-group analysis did not converge properly.

First, EFAs were conducted on the indicators (i.e., ethnic discrimination, SES discrimination, neighborhood danger, satisfaction with social support, overall life satisfaction, neighborhood connectedness) for the *Adverse* and *Protective* latent constructs. For the European American group (n = 159), two factors (*Adverse* and *Protective*) were extracted accounting for 63% of the variance. The *Protective* factor consisted of satisfaction with social support, overall life satisfaction, and neighborhood connectedness.

The *Adverse* factor consisted of ethnic discrimination, SES discrimination, and neighborhood danger. However, neighborhood danger had pattern coefficients less than .32 on both the *Protective* (.18) and *Adverse* (.30) factors. With oblique rotation, the correlation between factors was .34. The internal consistency reliability for the adverse factor was .65 and the mean inter-item correlation was .38 (range of .15 to .68). For the protective factor, the alpha was .67, with a mean inter-item correlation of .41 (range of .21 to .60).

The EFA with the ethnic minority group (n = 148) also extracted two factors (*Adverse* and *Protective*) accounting for 59% of the variance. However, neighborhood connectedness had pattern coefficients less than .32 on both the *Protective* (.16) and *Adverse* (-.15) factors. With oblique rotation, the correlation between factors was .23.

The alpha for the adverse factor was .69, and the mean inter-item correlation was .43 (range of .24 to .75). The alpha was .53 for the protective factor, with a mean inter-item correlation of .27 (range of .07 to .56). See Table 15 for communalities and the pattern correlation matrix for the EFAs for each group. Although the models ran well with the whole sample, it could be that the latent constructs became unstable with the reduced sample size.

TABLE 15. Communalities and Pattern Coefficient Matrix for Indicator Variables by Group

		Pattern coefficients	
Indicators	h^2	*Adverse*	*Protective*
European American Group (*n* = 159)			
Ethnic discrimination	.49	.73	--
SES discrimination	.54	.94	--
Neighborhood danger	.20	.30	--
Satisfaction with social support	.39	--	-.60
Overall life satisfaction	.49	--	-.98
Neighborhood connectedness	.21	--	-.44
Ethnic Group (*n* = 148)			
Ethnic discrimination	.57	.92	--
SES discrimination	.57	.80	--
Neighborhood danger	.13	.34	--
Satisfaction with social support	.31	--	.62
Overall life satisfaction	.34	--	.91
Neighborhood connectedness	.10	--	--

Note. Pattern coefficients smaller than .20 are omitted.

Next, three multi-group models were conducted with the latent constructs only. In the first model, no constraints were placed between the European American and ethnic

groups, and parameter estimates were allowed to vary across groups to produce the best estimates possible. Negative residual variances were found with the European American group only. In the second multi-group model, indicator intercepts were constrained to be equal. Negative residual variances were found in both groups, suggesting that the model may be improperly specified and that the intercepts should not be constrained. In the third model, intercepts and factors loadings were both constrained to be equal. Again, negative residual variances were found in both groups.

Confirmatory factor analyses (CFAs) were run with the European American and ethnic minority group separately, using the theoretical latent variables. For the European American group, negative residual variances emerged, indicating an improper model (Schreiber et al., 2006). However, the model converged normally with the ethnic minority group. Thus, data from the European American group appears to be presenting a problem and the two groups cannot be compared. Overall, when running the models in each group separately or without constraints in the multi-group context, it appears that data from the European American group is causing misspecification in the model. When constraining the indicator intercepts and/ or the factor loadings, the models in both groups showed signs of misspecification.

Last, I examined bivariate correlations among model variables and used the Fisher *r*-to-*z* transformation to assess for significant differences in correlation coefficient magnitude between the European American and ethnic minority groups (Hu & Bentler, 1999). Of the total 66 correlations, eight correlation coefficients differed significantly between the two groups (see Table 16). First, the correlations between neighborhood connectedness and four other model variables (i.e., overall life satisfaction, PSE, parenting

TABLE 16. Comparing Bivariate Correlations Among Measured Variables for European American and Ethnic Minority Participants

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Ethnic Disc.	---										
2. SES Disc.	*.68*/*.75*	---									
3. N. Danger	.15/*.29*	*.31*/*.24*	---								
4. S. Support	-.05/-.10	-*.22*/-.12	-.12/.02	---							
5. Life Satis.	-*.19*/-.12	-*.29*/-.15	-*.30*/-.00**	*.60*/*.56*	---						
6. N. Connect	-.05/-.13	-*.16*/-.12	-*.31*/-*.24*	*.21*/.07	*.41*/*.19**	---					
7. PSE	-.08/-.12	-.09/-.14	-.11/.05	.13/*.30*	*.27*/*.32*	*.27*/.05*	---				
8. Stress	.10/.11	*.18*/.10	*.25*/.04	-*.25*/-*.27*	-*.26*/-*.24*	-*.16*/.11*	-*.31*/-*.33*	---			
9. Resp.	.08/*.19*	.09/.13	-.05/.15	.13/-.04	*.19*/.12	.01/.00	.09/-.05	-.09/-.07	---		
10. Depress (Age 3)	*.17*/.10	*.31*/.11	*.23*/*.21*	-*.34*/-*.46*	-*.53*/-*.41*	-*.17*/-.12	-*.26*/-*.26*	*.38*/*.28*	-.09/.03	---	
11. Depress (Age 4)	.12/-.02	*.21*/.13	*.23*/.11	-*.24*/-*.35*	-*.44*/-*.30*	-.14/.01	-*.32*/-*.26*	*.44*/*.36*	-*.22*/-.00*	*.56*/*.58*	---
12. Depress (Age 5)	*.17*/*.18*	.15/*.23*	.14/*.17*	-*.31*/-*.25*	-*.47*/-*.17***	-*.20*/.05*	-*.29*/-.07*	*.31*/*.31*	-*.20*/-.02	*.55*/*.46*	*.55*/*.56*

Note. European American (EA) group (n = 159)/ Ethnic Minority (EM) group (n = 148). Italics represent significant correlation among variables ($p \leq .05$) for the EA and EM groups. * and ** indicate that the magnitude of the correlation coefficients for model variables differed significantly between the EA and EM groups at $p \leq .05$ (2-tailed) and $p \leq .01$ (2-tailed), respectively.

stress, and depression at child age 5) differed for each group. Specifically, the positive significant relationship between neighborhood connectedness and life satisfaction was stronger for European American ($r = .41$, $p \leq .05$) mothers than for ethnic minority mothers ($r = .19$, $p \leq .05$). The correlation between neighborhood connectedness and PSE was significant for European American ($r = .27$, $p \leq .05$) mothers, but not for ethnic minority ($r = .05$, $p > .05$) mothers. Next, neighborhood connectedness was significantly negatively correlated with parenting stress for European American ($r = -.16$, $p \leq .05$) mothers. This relationship was positively correlated for ethnic minority mothers and not statistically significant ($r = .11$, $p > .05$). Neighborhood connectedness was also significantly negatively correlated with depression at child age 5 for European American ($r = -.20$, $p \leq .05$) mothers, but was positively correlated with depression for ethnic minority ($r = .05$, $p > .05$) mothers and not significant. Overall life satisfaction at child age 3 was negatively correlated with depression at child age 5 for both groups, however, this relationship was stronger for European American ($r = -.47$, $p \leq .05$) mothers than for ethnic minority ($r = -.17$, $p \leq .05$) mothers. PSE and depression at child age 5 were negatively correlated for both groups, but this relationship was significant only for European American ($r = -.29$, $p \leq .05$) mothers. Next, neighborhood danger was significantly negatively correlated with life satisfaction for the European American ($r = -.30$, $p \leq .05$) group. However, this relationship was not significant for the ethnic minority ($r = -.00$, $p > .05$) group. Lastly, depression at child age 4 was significantly negatively correlated with parental responsivity for European American ($r = -.22$, $p \leq .05$) mothers, but this relationship was not significant for ethnic minority ($r = -.00$, $p > .05$) mothers.

Comparing correlations between both groups also indicated that several relationships that were significant for one group were not significant for the other group (although significant difference in magnitude was not found). See Table 16 to directly compare correlations. Relationships that were statistically significant for either the European American or ethnic minority group are represented with italics, while non-italicized coefficients indicate non-significant correlations. Overall, examination of bivariate correlations indicates that many of the relationships between model variables differ for European American and ethnic minority mothers. Such differences (i.e., significant correlation for one group and not the other, correlations in opposite directions) could have contributed to difficulty running the multi-group analyses.

CHAPTER V

DISCUSSION

Parenting is a demanding responsibility that can be impacted by the contexts in which parents raise their children. Disadvantaged families may be more likely to experience discrimination, neighborhood concerns, and higher levels of stress related to parenting and other life domains (Ardelt & Eccles, 2001). Given the rise of families living at poverty level, as well as the importance of parenting practices on child and family outcomes, this study aimed to understand how contextual factors might influence parent cognitions and subsequent parental responsivity. The mothers in the current longitudinal study identified as struggling with multiple risk factors such as socio-economic concerns, family challenges, and child-related problems.

The relationships between adverse and protective contextual factors, PSE, stress, depression, and parental responsivity for low-income mothers of preschool age children were examined. Two competing theoretical models were tested, along with post hoc tests to examine the fit of more parsimonious models. Lastly, a multi-group analysis was attempted, but failed to converge.

The first model examined the relationships between the *Adverse* and *Protective* latent factors at child age 3, parental self-efficacy and parenting-related stress at age 4, and parental responsivity (the outcome variable) at age 5. Depression was controlled for at each time point. The results suggested that the theoretical model provided an adequate fit to the data.

First, as expected, high levels of discrimination and perceptions of danger in the neighborhood were related to significantly lower levels of protective factors, including satisfaction with social support, overall life satisfaction, and feelings of connectedness with the neighborhood. These relationships are consistent with existing literature (Earls et al., 1994; Verkuyten, 2008).

Given that chronic exposure to discrimination has been linked to discouragement, self-doubt, stress, and anxiety, it was hypothesized that adverse factors would be related to low levels of PSE and high perceptions of parenting stress (Ong et al., 2009). Unexpectedly, these relationships were not found. One possibility is that parental self-efficacy is too domain specific. Although discrimination experiences can increase feelings of self-doubt and hopelessness, perhaps these feelings do not transfer to feelings related specifically to parenting a particular child. More research is needed to examine this relationship further. Alternatively, correlations among these variables may help to explain why a significant relationship was not found between these variables in the current study. First, discrimination due to SES *was* significantly correlated with PSE and stress in the expected directions. The majority of mothers enrolled in the study had an annual income of less than $20,000. This indicates that SES was a significant contextual factor that may be a source of discrimination. However, ethnic discrimination was not significantly correlated with stress or PSE. This may be because less than half of the mothers in the sample belonged to an ethnic group other than European American. On average, mothers experienced more discrimination due to SES than ethnicity among this group. Thus, it may be that the mothers in the study were less likely to experience stress and reduced sense of self-efficacy due to the effects of ethnic discrimination.

Additionally, neighborhood danger was positively correlated with levels of parenting stress, given that contending with a dangerous environment may make everyday parenting tasks seem more taxing and demanding. However, neighborhood danger was not related to self-efficacy for caring for a child. As found in a study by Jarrett (1994), caring for a child in a dangerous neighborhood may especially foster a sense of purpose and belief in oneself. Repeated exposure to the challenges of raising a child in a dangerous neighborhood may actually serve to increase a mother's sense of PSE through performance accomplishments, making her PSE similar to mothers who do not have to contend with neighborhood danger. It could be that combining the observed adverse variables into a latent construct obfuscated their effects on PSE, given their unique pattern of correlations.

Mothers who experienced more adverse factors when the child was age 3 engaged in higher levels of responsivity at age 5. The literature suggests that adverse factors can either serve to reduce the parent's interaction with a child or can be *especially* motivating for some parents to stay involved with a child (Hill, 2006). The current findings are consistent with the latter hypothesis. It is important to continue to examine the moderating factors that contribute to parental disengagement versus engagement when adverse factors are present.

A fourth hypothesis was predicted that the *Protective* latent factor would be positively related to PSE and parental responsivity, and negatively related to stress. These hypotheses were partially supported. Mothers who scored highly on the *Protective* latent factor were more likely to have higher levels of PSE than mothers with fewer protective factors. Given that self-efficacy is impacted by verbal encouragement and vicarious

learning, it is reasonable that mothers who experienced more satisfaction with the social support they received and connectedness with the neighborhood would have higher levels of PSE (Bandura, 1977). It could be that from these support sources, parents are being provided with encouragement, modeling, and help. Higher protective factors at child age 3 also predicted higher parental responsivity at age 5, as predicted by the literature (Berger & Spiess, 2011; Feiring et al., 1987; Koeske & Koeske, 1990). However, unexpectedly, the *Protective* latent factor at age 3 did not significantly predict perceived parenting stress at age 4. The literature suggests that such protective factors and sources of support would contribute to parents' ability to cope with the demands of parenting (Koeske & Koeske, 1990; Rochlen et al., 2008). The results may be due to the difference in relationships found between the protective factors and parenting stress due to daily hassles. Although satisfaction with social support and overall life satisfaction were significantly and inversely related to levels of parenting stress, this relationship was not found with neighborhood connectedness. The combination of indicators may have made the relationship non-significant in the model.

Lastly, it was expected that parent cognitions of PSE and stress would significantly predict parental responsivity. Although higher PSE was associated with lower stress, neither predicted parental responsivity in the model. Prior research findings suggest that low levels of PSE and high levels of stress contribute to negative parenting practices, such as neglect and negative interactions through reduced ability to cope and pervasive patterns of interactions (Abidin, 1992; Coleman & Karraker, 1997). There are a number of reasons why these relationships may not have emerged in the current study. First, as suggested in the literature, it may be that some parents respond to high levels of

stress and low PSE with *more* interaction with their child, rather than disengagement. Parents who respond to their child under these conditions are more likely to interact in a manner that is harsh and impatient (Coleman & Karraker, 1997). The measure of parental responsivity used in the current study does not fully assess the type of engagement occurring between the mother and child. For example, items such as "Parent responds verbally to child's speech" does not assess whether the interaction was positive or not. Although such a statement contributes to the parental responsivity score, it does not capture whether the quality and style of interaction were positive. Thus, parents with high PSE and low stress levels may be receiving similar scores to mothers with low PSE and high stress levels because their levels of interaction are similar, but differ in quality. It could be that the responsivity measure did not capture the qualitatively different ways that PSE and stress may influence parenting responsivity.

Second, the nature of the data collection process may have impacted parent responsivity scores given that parents knew they were being observed (M = 10; SD = 2.76; Range from 0 to 13). Thus, even extremely stressed or low PSE parents might engage more with their child given the artificial context (especially when they knew they were being observed on their interactions and relationship with the child). After addressing such measurement concerns, it is important that future studies examine the relationship between PSE, stress due to daily hassles, and parenting responsivity. The present findings do not indicate the hypothesized mediations.

To explore a more parsimonious model, a reduced model was tested by eliminating the non-significant path between the *Adverse* latent factor and PSE. This path had the lowest parameter estimate (Kline, 2005) and theory supported dropping this path,

given that adverse factors *may* serve to increase PSE in a manner that might not yield a significant relationship between these two variables (Ardelt & Eccles, 2001; Jarrett, 1994). This modification did not significantly improve the fit of the model to the data.

A second competing model was tested that differed from the first hypothesized model in that it included depression as a predictor variable at child age 3. Given the role of depression in reducing maternal responsivity and impacting PSE and stress (Fox & Gelfand, 1994; Lovejoy et al., 2000), this variable was added directly into the model. Similar to the first hypothesized model, the results suggested that the model adequately fit the data. In addition to the same significant paths found in Model 1, results of the test of Model 2 also indicated a significant inverse relationship between maternal depression and the *Protective* latent variable. As expected, depression at child age 3 also predicted higher levels of stress due to daily parenting tasks at age 4. Depression reduces a parent's ability to cope with stressors, and depressed mothers have been found to over-report child problem behavior similar to those assessed by the parenting stress measure (Hammen, 2003).

In spite of literature suggesting that experiences of depression would predict low PSE and reduced maternal responsivity over time (Fox & Gelfand, 1994; Lovejoy et al., 2000), these relationships were not found in the model in the current study. Although depression *was* significantly inversely correlated with PSE for the whole sample, depression did not significantly predict PSE over time in the model. The non-significant paths in the model from depression to PSE and responsivity may be due to differences based on ethnicity. O'Neil et al. (2009) studied participants in the Early Steps study at a different time point (child age 2) than the current sample and also found that PSE and

total maternal depressive symptoms across the total sample were significantly correlated. However, they also found that ethnicity moderated results, such that PSE was significantly associated with depressive symptoms for European American mothers, but *not* for African American and Hispanic mothers. O'Neil et al. (2009) hypothesized that it is possible that African American mothers had adapted to stressors in such a way that prevented their PSE from being affected by their symptoms of depression. Thus, it is possible that depression was not predictive of PSE in the model in the current study due to the use of the total sample, and highlights the importance of studying the relationships based on ethnic group membership. Depression at child age 3 also did not predict parental responsivity at child age 5. Given this result, a second post hoc test that builds on the current model was conducted to explore the relationship between depression and parental responsivity at the same time point (Model 2 Post Hoc B).

Unlike Model 1, two significant mediation effects were found in Model 2. As expected, there was an indirect effect of depression on PSE transmitted through protective factors. Protective factors also mediated the relationship between depression and maternal responsivity. These relationships highlight the impact of depression and its effect on protective factors that then relate to PSE and responsivity. In order to explore a more parsimonious model, the non-significant path between the *Adverse* latent factor and PSE was dropped. This did not improve the fit of the model.

The next model (Model 2 Post Hoc B) was tested to explore the effects of depression at child age 5, at the same time point as parental responsivity. The results suggested that the model was a very good fit to the data, and fit the data best compared to the prior models. In addition to the pattern of significant relationships yielded by Model

2, the test of Model 2 Post Hoc B also showed a significant path from depression at age 3 to depression at age 5, as expected. That is, mothers who were depressed when the child was age 3 were more likely to be depressed when the child was age 5. Also, parenting stress at Time 2 was predictive of higher levels of depression at Time 3.

Unexpectedly, protective factors at age 3 did not significantly predict depression at age 5. Higher levels of satisfaction with social support, neighborhood connectedness, and overall life satisfaction would theoretically result in significantly lower levels of subsequent depression (Browning & Cagney, 2002; Koeske & Koeske, 1990). Satisfaction with social support and overall life satisfaction were significantly inversely correlated with depression, however neighborhood connectedness was not related to depression at child age 5. The combination of indicators in the *Protective* latent factor may have made the relationship with depression non-significant in the model. This result highlights the importance of exploring various types of supports and protective factors that may influence depression, as well as the effect of protective factors at the same time point as depression. Depression at age 5 was not significantly related to parental responsivity at the same time point. This finding also is unexpected, given the literature on the effects of depression on parenting behavior (Bagner et al., 2010; Conger et al., 1995; Gelfand & Teti, 1990). Again, it is possible that the parental responsivity measure did not capture a wide enough range of behaviors, and that the data collection process itself may have influenced parent responsivity scores.

A final model was tested (Model 2 Post Hoc C) that excluded neighborhood connectedness from the *Protective* latent factor because this variable failed to load when conducting an EFA with the measurement model with the ethnic minority group member

participants. Also, bivariate correlations indicated that the relationships between neighborhood connectedness and other model variables differed for European American and ethnic minority groups. Dropping neighborhood connectedness improved model fit from Model 2 Post Hoc B. All significant direct and indirect paths were comparable.

Overall, the final model (Model 2 Post Hoc C) provided the best fit to the data. However, including neighborhood connectedness as an indicator for the *Protective* latent factor in Model 2 Post Hoc B resulted in more variance accounted for in parental responsivity (6%), as compared to Model 2 Post Hoc C (4%). The addition of maternal depression at child ages 3 and 5 (as compared to Model 1) significantly improved model fit. Early depression significantly predicted depression and stress years later. The models suggest that ethnic discrimination, SES discrimination, and neighborhood danger predict an increase in parental responsivity. Satisfaction with social support, overall life satisfaction, and neighborhood connectedness also predict an increase in parental responsivity. Although depression did not predict parental responsivity, depression at Time 1 did predict lower levels of protective factors, which could in turn predict lower levels of parental responsivity over time.

Limitations of the Study

Limitations of the current study must be considered when interpreting study results. First, the literature suggests that ethnicity may moderate the relationships between the studied variables (Ardelt & Eccles, 2001; Hill, 2006; O'Neil et al., 2009), thus a multi-group analysis was intended to test the model with different ethnic groups. However, the analysis failed to converge on a solution. It is possible that the reduction in

sample size made the factor structure of the latent constructs unstable. When testing the factor structure by group, neighborhood danger had a pattern coefficient less than .32 on the *Adverse* factor for the European American group. Neighborhood connectedness had a pattern coefficient less than .32 on both factors for the ethnic minority group. Further study should be conducted to help tease these explanations apart. Although the multi-group analysis failed to converge on a defensible solution, interpretation of the total sample model results are still recommended as the EFAs supported the use of the theoretical latent constructs overall and the model fit indices indicated adequate to good model fit.

A second limitation is that the measures in the study relied predominantly on maternal self-report. Observer report was used only to measure parental responsivity at child age 5. Although measuring parent cognitions (e.g., depression, PSE, stress) through self-report is consistent with existing literature, future studies could be improved by assessing variables with extended measures that utilize multiple methods (Coleman & Karraker, 2003; Kwok & Wong, 2000; Teti & Gelfand, 1991).

Third, validity and internal reliability concerns exist with the measurement used for *satisfaction with social support* and *overall life satisfaction*. During construction of the GLS, the original author found 3 separate factors examining life satisfaction in the areas of intimate relationships, friendships, and community among a sample of mothers of infants (Crnic et al., 1983). Internal reliability ranged from .50 to .69. Another study used the GLS differently by separately totaling items related to *total amount of social support* and *satisfaction with social support*. EFA results and reliability were not reported in the study and no distinction was made between the items related specifically to social

support versus other life domains such as work and health (Owens et al., 1998). The EFA with the current sample identified a 2-factor structure that distinguished items based on *satisfaction with social support* (α = .80) and *overall life satisfaction* (α = .75). It is possible that the GLS questionnaire may be limited in its measure of social support given that the social support subscale included items assessing only "satisfaction" with a limited range of supports. It would be beneficial for future studies to utilize a measure that includes a wider range of items that assess satisfaction with social support, as well as the types of supports utilized by parents. Similarly, the overall life satisfaction scale of the GLS had an alpha below .80. Future studies could be improved by utilizing social support and life satisfaction measures with higher internal reliability and that include a wider range of items assessing the construct.

Fourth, most of the variables were not correlated, or were only minimally correlated with the outcome variable of parental responsivity. The absence of direct correlations reduced the likelihood of producing a good fit of the model to the data or accounting for variance in parental responsivity. The final models accounted for 4-6% of the variance in parental responsivity. Limitations may exist related to operationalization of the parental responsivity construct. Items from the 'Responsivity,' 'Acceptance,' and 'Involvement' sections of the HOME measure were used to capture a wide range of responsive behaviors. However, it is possible that these items did not adequately capture the quality of the mother's response and whether the mother's responsivity was positive or not. The items may not have adequately distinguished between proactive/ involved parenting versus overbearing parenting, resulting in an inadequate measure of parental

responsivity. In addition, the bivariate correlations and model testing results suggest that variables important in accounting for parental responsivity were missing from the model.

Lastly, in order to attain an adequate sample size to conduct the multi-group analysis, all minority groups were combined into one group. This approach should be avoided in future studies. Despite the limitations, the study offers insight into various factors that contribute to parental self-efficacy, stress, and responsivity.

Strengths and Implications for Practice

The current study has a number of strengths and implications for practice. First, a longitudinal design was utilized using data from multiple waves of the Early Steps Multi-site Study (Shaw et al., 2006). The relationships among variables were examined over three years using an ethnically diverse sample of mothers of preschoolers from three different U.S. cities. Second, the study contributes to the literature by incorporating relevant contextual factors and parent cognitions in one model of parental responsivity. Experiences of discrimination are pervasive and common for ethnic minority and low-income mothers (Ong et al., 2009; Williams & Williams-Morris, 2000). The literature is sparse, however, in examination of how discrimination experiences may impact parent cognitions and parenting behavior, specifically during the preschool years. The current study tested two models that may help shed light on the ways that adverse and protective factors influence parents.

Many families are raising children in disadvantaged conditions (e.g., poverty and unsafe neighborhoods) that may contribute to parenting stress and may impact parenting practices (Ong et al., 2009). The current study found that experiences of discrimination

(specifically due to SES in the current sample) were inversely related to satisfaction with social support, overall life satisfaction, neighborhood connectedness, and parental self-efficacy. Discrimination was also positively associated with depression and parenting stress. These findings have important implications for mental health care providers and educators that work with parents. It is important to assess for contextual factors such as discrimination that may be impacting overall parent well-being. Parenting interventions may be enhanced by attending to parents' experiences of discrimination, stress, and depression.

Next, satisfaction with social support, overall life satisfaction, and neighborhood connectedness were positively related to and predictive of PSE in the tested models. High PSE scores were also associated with low levels of parenting stress. These findings suggest that direct service providers should help parents increase protective factors. Counselors can help parents foster social support networks, learn self-care techniques, and practice coping mechanisms. Providing parents with encouragement, skill-modeling, and opportunities to practice skills remains a promising avenue for improving PSE that can help parents cope with parent-related stress. Additionally, as supported by the current study, increasing protective factors can have important implications for parental responsivity.

Consistent with existing literature, the current study found that depression is positively associated with perceptions of parenting stress (Fox & Gelfand, 1994; Lovejoy et al., 2000). With the current sample, depression at child age 3 was also associated with low levels of protective factors, and was predictive of depression two years later. Thus, it

is important that care providers attend to parents' experiences of depression and stress, as well as work to implement protective factors that can help parents cope.

Lastly, ethnicity may moderate the relationships between discrimination, depression, PSE, stress, and parental responsivity (Ardelt & Eccles, 2001; O'Neil et al., 2009). Future intervention and prevention efforts should focus on providing parents with services that are culturally appropriate and that attend to aspects of diversity that can influence parents' experiences.

Recommendations for Future Research

Results from this study have several implications for future research. First, the current study failed to examine ethnic group differences through a multi-group analysis. It is recommended that future studies specifically focus on understanding the role of ethnicity in shaping parenting experiences. In the current study, the small sub-sample sizes may have contributed to problems with the multi-group analysis, thus future research should attempt to have adequate sample sizes for examining ethnic group differences.

An important avenue for future research includes investigating additional factors that may influence parent responsivity. The parenting literature suggests that gender, acculturation level, SES, level of education, number of life stressors, coping mechanisms, and child characteristics are all factors that could be included in models of parenting responsivity (Abidin, 1992; Coleman & Karraker, 1997; Gross et al., 2008; Raver & Leadbeater, 1999; Verkuyten, 2008). Also, stress related to parenting is just one domain of perceived stress. Given that parents can be greatly impacted by different types of stress

(i.e., work, relationship, financial), it is important to examine how various types of stress contribute to a parent's overall experience and their responsivity with their children.

Next, the majority of variables in the current study were based on self-report. It is recommended that future studies improve measurement by including information provided by alternate informants, such as by trained research interviewers and clinicians. Observer report will help improve study power and validity. The current study measured parental responsivity, satisfaction with social support, and overall life satisfaction with measures that have limited reliability and validity evidence. Although EFA results provide some validity evidence for the current sample, it is recommended that future studies use well-validated measures that adequately assess social support, life satisfaction, and parental responsivity.

Conclusion

The results highlight the interrelationships between adverse factors, protective factors, PSE, parenting stress, depression, and parental responsivity. Given that the manner in which parents interact with their children can profoundly influence developmental trajectories and child outcomes, it is important to further study how these variables can be influenced in ways that yield positive outcomes.

In the current study, adverse factors were associated with higher parental responsivity, as well as lower levels of satisfaction (overall and with social support) and connectedness with one's neighborhood. The current study also highlighted that earlier experiences of depression can predict stress and depression over time. Protective factors, however, can contribute to high levels of PSE and parenting responsivity. The

combination of results suggests that future studies should explore the role of protective factors as they contribute to parent cognitions and parenting behavior. Lastly, given the powerful role of ethnicity and SES in shaping experiences, it is important that future studies examine the relationships between adverse factors, protective factors, PSE, stress, and responsivity further with ethnic minority groups. By further studying the variables presented in this study, we may continue to identify points of intervention for contributing to parents' mental health and positive parenting behavior.

APPENDIX A

UO INSTITUTIONAL REVIEW BOARD APROVAL

UNIVERSITY OF OREGON

Date: February 25, 2011

To: Christina Aranda
Counseling Psychology and Human Services

From: University of Oregon Institutional Review Board

RE: Protocol #11222010.047 entitled "An Investigation of Discrimination Experiences, Neighborhood Conditions, Social Supports, Stress, Parental Self-Efficacy and Parental Involvement for Low-Income Mothers with Preschool-age Children"

The above protocol has been reviewed by the University of Oregon Institutional Review Board and the Office for Protection of Human Subjects (OPHS). Your research protocol states that you will provide an ecological examination of the factors that impact parenting cognitions and behavior. This is a minimal risk research protocol that qualifies for an exemption from IRB review under 45 CFR 46. 101(b)(1) for research conducted in established or commonly accepted educational settings, involving normal educational practices, such as research on regular or special education instructional strategies.

Please note that you will not be required to submit continuing reviews for this protocol, however, you must submit **any changes to the protocol to OPHS** for assessment to verify that the protocol continues to qualify for exemption.

If you have any questions regarding your protocol or the review process, please contact OPHS at human_subjects@orc.uoregon.edu or (541)346-2510.

Sincerely,

Christina Booth, MS, CIPP
IRB Designee
Administrative Co-Chair/Alternate Chair

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APPENDIX B

EARLY STEPS MEASURES

Family ID: ☐☐☐☐☐☐ Resp: ○ PC ○ AC Int ID: ☐☐

Date: ☐☐ / ☐☐ / ☐☐☐☐ Child's Age: ○ 2 ● 3 ○ 4 ○ 5 ○ 6

1a. Primary Caregiver's first name: _____ Middle name: _____

Last name: _____ Maiden/other name: _____

b. Primary Caregiver's gender: ○ Male ○ Female

c. Is bio parent? ○ Yes ○ No

7a. What is the last level of formal education you completed?

- ○ No formal schooling
- ○ 7th grade or less
- ○ Junior high completed
- ○ Partial high school (at least one year)
- ○ High school graduate/GED certificate
- ○ Partial college (at least one year) or specialized training
- ○ Junior college/Associates degree (2 years)
- ○ Standard college or university graduation (4 years)
- ○ Graduate professional training, graduate degree

13. What is your current type of housing *(mark only one)*?

- ○ Apartment/duplex/townhouse
- ○ Single family home
- ○ Mobile home
- ○ Motel/hotel
- ○ Mission, emergency housing, group shelter, camping
- ○ Homeless (skip to question #15)
- ○ Other (describe): _____

14. Do you. . .

- ○ Own your home?
- ○ Rent your home?
- ○ Live with a friend?
- ○ Live with a relative?
- ○ Other (describe): _____

15. What is the gross (before taxes) **monthly** income including child support and any other financial aid for your household

- ○ $415 or less
- ○ $416 to $832
- ○ $833 to $1,249
- ○ $1,250 to $1,665
- ○ $1,666 to $2,082
- ○ $2,083 to $2,499
- ○ $2,500 to $3,332
- ○ $3,333 to $4,166
- ○ $4,166 to $4,999
- ○ $5,000 to $5,832
- ○ $5,833 to $6,666
- ○ $6,667 to $7,499
- ○ $7,500 or more
- ○ N/A

What is the gross (before taxes) **annual** income including child support and any other financial aid for your household?

- ○ $4,999 or less
- ○ $5,000 to $9,999
- ○ $10,000 to $14,999
- ○ $15,000 to $19,999
- ○ $20,000 to $24,999
- ○ $25,000 to $29,999
- ○ $30,000 to $39,999
- ○ $40,000 to $49,999
- ○ $50,000 to $59,999
- ○ $60,000 to $69,999
- ○ $70,000 to $79,999
- ○ $80,000 to $89,999
- ○ $90,000 or more
- ○ N/A

16a. Do you receive any of the following *(check all that apply)*?

	How much?
☐ Food Stamps	$ _____ mo / yr
☐ Temporary Assistance for Needy Families (TANF)	$ _____ mo / yr
☐ Heating & Electric bill assistance	$ _____ mo / yr
☐ Medical assistance	$ _____ mo / yr
☐ Social Security Income (disability or death benefits)	$ _____ mo / yr
☐ Unemployment Insurance	$ _____ mo / yr
☐ Child support	$ _____ mo / yr
☐ Spousal support/alimony	$ _____ mo / yr
☐ Employment related daycare	$ _____ mo / yr
☐ Other (describe): _____	$ _____ mo / yr
☐ None	

b. Were the contributions included in household income per month? ○ Yes ○ No

Note: If some but not all aid was included in the monthly income estimate, make a note which aid was not included.

36. Is your child currently enrolled in Head Start? ○ Yes ○ No

If **'No'**, are they : ○ Enrolled in another pre-school
○ Enrolled in a day care center
○ Cared for by family
○ Not cared for by anyone but Primary Caregiver
○ Other: _____

If 'No', do you plan on enrolling him/her in Head Start in the next year? ○ Yes ○ No

37. **PC** relationship to TC : ☐☐

38. **AC** relationship to TC : ☐☐
if no AC, put (XX)

2A Adoptive Dad	3A Adoptive Mom
2B Bio Dad	3B Bio Mom
2O Grandpa	3O Grandma
2U Uncle	3U Aunt
2G Gay Partner	3G Lesbian Partner
2F Parent's male/boyfriend	3F Parent's female/girlfriend
2S Step Dad	3S Step Mom

** Please refer to separate reference sheet for more codes.

Family ID: E S E | Resp: ⊜ PC ○ AC | Int ID:

Date: / / | Child's Age: ○ 2 ● 3 ○ 4 ○ 5 ○ 6

Directions: We are interested in your experiences of being treated differently than others in the same situation. As you read each statement, fill in the circle that best describes how much that experience or situation distressed or bothered you over your entire life. Please make sure to fill in the circle next to both the ethnicity and income parts for each question.

1. Have you ever felt as if you have been unfairly treated or singled out at work, the community, or by social institutions such as the police, schools, or social services?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

2. Have you ever overheard negative comments about you or had others call you names?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

3. Have you ever had physical or verbal arguments because someone from a different background said something negative about you?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

4. Have you ever had to take drastic steps, such as quitting your job, or moving away, to deal with something that was done to you?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

5. Have you ever been made to feel as if you don't matter, ignored, or that your opinions do not count?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

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Family ID: E S E | Resp: ◉ PC ○ AC

6. Have you ever been misunderstood by people from a different background?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

7. Have you ever been expected to act in a stereotypical manner?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

8. Have you ever had someone from a background different than yours identify with you, or tell you that they feel a connection to a group with which you identify?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

9. Have you ever been made to feel as if you are not like everyone else by someone from a different background?

	Almost never	Infrequently	Sometimes	Often	Almost always
Because of your ethnicity/race:	○	○	○	○	○
Because of your income/education:	○	○	○	○	○

52858

Family ID: | | | | | | | Resp: ○ PC ○ AC Int ID: | |

Date: | | / | | / | | | | Child's Age: ○ 2 ● 3 ○ 4 ○ 5 ○ 6

Directions: We would like to know how you feel about the neighborhood where you lived the longest during the past year. Please read each statement below and decide how much each statement is true for you. Fill in the box next to the number that corresponds to how true the statement is for you.

	Not at all true			Somewhat true			Very true
	1	2	3	4	5	6	7
1. The friendships and connections I have with people in my neighborhood mean a lot to me.	○	○	○	○	○	○	○
2. The neighborhood I live in is a big part of who I am.	○	○	○	○	○	○	○
3. I feel loyal to the people in my neighborhood.	○	○	○	○	○	○	○
4. I think of myself as the same as people who live in my neighborhood.	○	○	○	○	○	○	○
5. Living in this neighborhood gives me a feeling of belonging.	○	○	○	○	○	○	○

Directions: Listed below are stressful things people have experienced in their neighborhood. For each event listed, please indicate if this event, or something like it, happened in the neighborhood where you lived the most during the **PAST YEAR**. Indicate if the event ever happened, and how often, by filling in the box next to the answer to the right of each event on the list.

	Never	Once	A few times	Often
6. A family member was robbed or mugged	○	○	○	○
7. I heard neighbors complaining about crime in our neighborhood	○	○	○	○
8. I carried a knife or gun for protection	○	○	○	○
9. I saw or heard about a "shooting gallery" near my home	○	○	○	○
10. A family member was stabbed or shot	○	○	○	○
11. A family member carried a gun or knife for protection	○	○	○	○
12. I saw strangers who were drunk or high near my home	○	○	○	○
13. There was a gang fight near my home	○	○	○	○
14. People in the neighborhood complained about being harrassed by the police	○	○	○	○
15. I saw cars speeding or driving dangerously on my street	○	○	○	○
16. I saw people dealing drugs near my home	○	○	○	○
17. A family member was attacked or beaten	○	○	○	○
18. A family member was stopped and questioned by the police	○	○	○	○
19. I heard adults arguing loudly on my street	○	○	○	○
20. Someone threatened to hurt a member of my family	○	○	○	○

19188

Family ID: E S E | Resp: ⊜ PC ○ AC | Int ID:

Date: / / | Child's Age: ○ 2 ● 3 ○ 4 ○ 5 ○ 6

Directions: Read each question and then fill in the circle next to the choice that best describes your general feelings or situation in the **past 6 months.**

1. Are there any organized groups that are a source of support for you?
   - ○ None
   - ○ Some
   - ○ Many
   - ○ Other (please explain) _____

2. How satisfied are you with this situation?
   - ○ Very dissatisfied (I wish things were very different)
   - ○ Somewhat dissatisfied (I would like some changes)
   - ○ Somewhat satisfied (OK for now; pretty good)
   - ○ Very satisfied (I'm really pleased)
   - ○ Other (please explain) _____

3. Think of a typical week. About how many times did you talk on the phone with your friends or family?
   - ○ No talks
   - ○ 1 talk
   - ○ 2-3 talks
   - ○ 4-7 talks
   - ○ More than 7 talks
   - ○ Other (please explain) _____

4. How satisfied are you with this amount of phone visiting?
   - ○ Very dissatisfied (I wish things were very different)
   - ○ Somewhat dissatisfied (I would like some changes)
   - ○ Somewhat satisfied (OK for now; pretty good)
   - ○ Very satisfied (I'm really pleased)
   - ○ Other (please explain) _____

5. In the last week, how many times have you visited your friends?
   - ○ Never
   - ○ 1 or 2 times
   - ○ 3 to 4 times
   - ○ 5 or 6 times
   - ○ 7 or more times

Family ID: E S E | | | | Resp: ⊛ PC ○ AC

6. How satisfied are you with this amount of visiting?
   - ○ Very dissatisfied (I wish things were very different)
   - ○ Somewhat dissatisfied (I would like some changes)
   - ○ Somewhat satisfied (OK for now; pretty good)
   - ○ Very satisfied (I'm really pleased)
   - ○ Other (please explain) _____

7. If you were to become upset or angry, would you have someone to talk honestly to, who is not involved? How many people?
   - ○ No people
   - ○ 1 person
   - ○ 2 people
   - ○ 3-4 people
   - ○ More than 4 people
   - ○ Other (please explain) _____

8. How satisfied are you with this?
   - ○ Very dissatisfied (I wish things were very different)
   - ○ Somewhat dissatisfied (I would like some changes)
   - ○ Somewhat satisfied (OK for now; pretty good)
   - ○ Very satisfied (I'm really pleased)
   - ○ Other (please explain) _____

9. When you are happy, is there someone you can share it with - someone who will be happy just because you are?
   - ○ No
   - ○ Yes
   - ○ Other (please explain) _____

10. How satisfied are you with this situation?
   - ○ Very dissatisfied (I wish things were very different)
   - ○ Somewhat dissatisfied (I would like some changes)
   - ○ Somewhat satisfied (OK for now; pretty good)
   - ○ Very satisfied (I'm really pleased)
   - ○ Other (please explain) _____

11a. How much satisfaction do you get from your non-working activities, hobbies, and so on?
   - ○ A very great deal
   - ○ A great deal
   - ○ Quite a bit
   - ○ A fair amount
   - ○ Some
   - ○ A little
   - ○ None

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Family ID: E S E | | | | Resp: ⊛ PC ○ AC

11b. How much satisfaction do you get from family life?
- ○ A very great deal
- ○ A great deal
- ○ Quite a bit
- ○ A fair amount
- ○ Some
- ○ A little
- ○ None

11c. How much satisfaction do you get from your friendships?
- ○ A very great deal
- ○ A great deal
- ○ Quite a bit
- ○ A fair amount
- ○ Some
- ○ A little
- ○ None

11d. How much satisfaction do you get from your health and physical condition?
- ○ A very great deal
- ○ A great deal
- ○ Quite a bit
- ○ A fair amount
- ○ Some
- ○ A little
- ○ None

11e. How much satisfaction do you get from work?
- ○ N/A: "I don't work"
- ○ A very great deal
- ○ A great deal
- ○ Quite a bit
- ○ A fair amount
- ○ Some
- ○ A little
- ○ None

12. When you take everything into consideration - your child, your adult life, etc., how would you describe your current life situation?
- ○ Things are very bad right now
- ○ Things are fairly bad right now
- ○ Things are OK - not bad and not good
- ○ Things are fairly good
- ○ Things are quite good
- ○ Other (please explain) _____

58487

Family ID: ☐☐☐☐☐☐ Int ID: ☐☐

Date: ☐☐ / ☐☐ / ☐☐☐☐ Child's Age: ● 5

1. People present in the house: ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 or more

Responsivity	Yes	No	
2. Parent introduces visitor to child.	○	○	
3. Parent uses correct grammar and pronunciation.	○	○	
4. Parent uses complex sentence structure and vocabulary.	○	○	
5. Parent responds verbally to child's speech.	○	○	
6. Parent shows some positive emotional response to praise of child by visitor.	○	○	
7. Parent's voice conveys positive feelings about the child.	○	○	
8. Parent praises child's qualities twice during visit (e.g. skill, strength or accomplishment).	○	○	
9. Parent caresses, kisses, or cuddles child during visit.	○	○	
10. Parent helps child demonstrate some achievement during visit.	○	○	
11. Child can express negative feelings without harsh reprisal.	○	○	○ Not observed
12. Child is permitted choice in breakfast or lunch menu.	○	○	
13. Child can hit parent without harsh reprisal.	○	○	○ Not observed
14. Children's artwork is displayed some place in the house.	○	○	

Family ID: | | | | | | | Int ID: | | |

Acceptance	Yes	No
15. Parent does not scold or yell at or derogate child more than once.	○	○
16. Parent does not use physical restraint during visit.	○	○
17. Parent neither slaps nor spanks child during visit.	○	○
18. Parent encourages child to talk and takes time to listen.	○	○
19. Parent answers child's questions or requests verbally.	○	○
20. Parent converses with child at least twice during visit.	○	○
21. Parent uses some term of endearment or some diminutive for child's name when talking about child at least twice during visit.	○	○

Involvement	Yes	No
22. Parent keeps child in visual range, looks often.	○	○
23. Parent talks to child while doing household work.	○	○
24. Parent structures child's play periods.	○	○

Opportunities for Variety in Daily Stimulation	Yes	No	Obs	Int
25. Three children's books are present.	○	○	○	○
26. The family possesses at least one periodical.	○	○	○	○
27. There is artwork in home	○	○	○	○
28. The family listens to a variety of music	○	○	○	○

Family ID: | | | | | | | Int ID: | |

Neighborhood

29. Neighborhood looks like a safe place to raise children.

Extremely Safe	Somewhat Safe	Okay	Not Too Safe	Extremely Unsafe	N/A Office Visit
○	○	○	○	○	○

30. Were there signs of gang activity or gang members?

None at All	Hardly Any	Not Sure	Some Signs	Many Visible Signs	N/A Office Visit
○	○	○	○	○	○

31. Were there any visible indicators that that this neighborhood/community where adults look out for each other's children?

Many Visible Signs	Some Signs	Not Sure	Hardly Any	None at All	N/A Office Visit
○	○	○	○	○	○

General Home Environment	Not at all true	Hardly true	Somewhat true	Very true	N/A
32. Home environment appears to be safe and free of obvious hazards.	○	○	○	○	○
33. Physical environment allows free movement (is not too cramped/restricted).	○	○	○	○	○
34. Basic hygiene appears to be observed.	○	○	○	○	○
35. Home is somewhat tidy (some effort to pick things up).	○	○	○	○	○
36. House is uncomfortably dirty (filth, dirt, trash, etc).	○	○	○	○	○

Parent Social Skills	Never or almost never	Hardly ever	Sometimes	Often	Always or almost always
37. Did parents ask questions or show curiosity about study or visitors?	○	○	○	○	○
38. Did parent at least attempt to be warm and friendly?	○	○	○	○	○
39. Did parent appear to answer questions truthfully?	○	○	○	○	○

43692

Family ID: | | | | | | | Int ID: | |

Ratings and General Impressions	Never or almost never	Hardly ever	Sometimes	Often	Always or almost always
40. Did the parent seem in good control of target child?	○	○	○	○	○

	Not at all	Hardly or a little	Some-what	Mostly or quite a bit	Very much
41. How prepared was the family for the visit (time set aside, accommodations, all present)?	○	○	○	○	○
42. How open and receptive were family members to the visitor?	○	○	○	○	○
43. Did target child seem neglected?	○	○	○	○	○
44. Was the family member sad, down or depressed?					
a. Primary Caregiver	○	○	○	○	○
b. Alt. Caregiver ○ N/A	○	○	○	○	○
45. Was the family member irritable or angry?					
a. Primary Caregiver	○	○	○	○	○
b. Alt. Caregiver ○ N/A	○	○	○	○	○
46. How much did you like this person as an individual?					
a. Primary Caregiver	○	○	○	○	○
b. Alt. Caregiver ○ N/A	○	○	○	○	○

	Very inaccurate	Somewhat inaccurate	Neither	Somewhat accurate	Very accurate
47. This person seems to have an inappropriate relationship with the target child (e.g. parent dependent on child, ignored or condoned major behavior problems with child)?	○	○	○	○	○
48. This parent seemed to enjoy parenting.	○	○	○	○	○
49. This parent seemed generally accepting of target child.	○	○	○	○	○

Family ID: ☐☐☐☐☐☐ Int ID: ☐☐

	Very inaccurate	Somewhat inaccurate	Neither	Somewhat accurate	Very accurate
50. This parent seemed socially skilled (e.g., able to relate to people, to sustain support networks (friends), and to generally get along with others).	○	○	○	○	○
51. This parent seemed to have a conforming rather then deviant social attitude.	○	○	○	○	○
52. This parent seemed antisocial (involved in behavior that may lead to arrest).	○	○	○	○	○
53. This parent disciplines the child appropriately.	○	○	○	○	○
54. This parent has good family problem solving skills.	○	○	○	○	○

55. Did anything unusual occur *(please explain on back)*? ○ Yes ○ No

56. Is the TC allowed to wander throughout the house unattended? ○ Yes ○ No

57. Does the TC get to do what s/he wants? ○ Yes ○ No

	PC	Mostly PC	Both	Mostly Child	Child
58. Who is in charge?	○	○	○	○	○

59. Delay of Gratification #2: ○ Child did not wait ○ Child chose to wait ○ Not administered

60. Is there any reason to believe testing on the WJIIIB or the Bateria III W-M may not be a fair representation of the subjects abilities? ○ Yes ○ No ○ N/A

61. Is there any reason to believe testing on the FLU may not be a fair representation of the subjects abilities? ○ Yes ○ No ○ N/A

Family ID: E S E Resp: ⊛ PC ○ AC Int ID:

Date: / / Child's Age: ○ 2 ● 3 ○ 4 ○ 5 ○ 6

Directions: The statements below describe lots of events that routinely occur in families with young children. These events sometimes make life difficult. Please read each item and fill in how often it happens to you (rarely, sometimes, a lot, or constantly), and then fill in how much of a "hassle" you feel that it is for you. If you have more than one child, these events can include any or all of your children.

	HOW OFTEN DOES IT HAPPEN?								
	Rarely	Sometimes	A Lot	Constantly	No Hassle				Big Hassle
1. Always cleaning up messes of toys or food.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
2. Being nagged, whined at, complained to.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
3. Mealtime problems (picky eaters, complaining, etc.).	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
4. The kids don't listen--won't do what they are asked without being nagged.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
5. Babysitters are hard to find.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
6. The kids' schedules interfere with meeting your own household needs (like preschool, naps, other activities).	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
7. Sibling arguments or fights that need a "referee".	○ ○ N/A: "No siblings"		○	○	○ 1	○ 2	○ 3	○ 4	○ 5
8. The kids demand that you entertain or play with them.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
9. The kids resist or struggle over bedtime with you.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5
10. The kids are constantly under foot, interfering with other chores.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5

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Family ID: E S E | | | | Resp: ◉ PC ○ AC

	HOW OFTEN DOES IT HAPPEN?									
	Rarely	Sometimes	A Lot	Constantly	No Hassle					Big Hassle
11. The need to keep a constant eye on where the kids are and what they're doing.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
12. The kids interrupt adult conversations or activities.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
13. Having to change your plans because of an unexpected child need.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
14. The kids get dirty several times a day, needing a change of clothes.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
15. Trouble getting privacy (like in the bathroom).	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
16. The kids are hard to manage in public (grocery store, shopping center, restaurant).	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
17. Trouble getting the kids ready for outings and leaving on time.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
18. Trouble in leaving the kids for a night out, or leaving them at school or daycare.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
19. The kids have trouble with friends (like fighting, not getting along, or having no friends around).	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	
20. Having to run extra errands to meet the kids' needs.	○	○	○	○	○ 1	○ 2	○ 3	○ 4	○ 5	

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Family ID: ☐☐☐☐☐☐ Resp: ○ PC ○ AC Int ID: ☐☐

Date: ☐☐ / ☐☐ / ☐☐☐☐ Child's Age: ○ 2 ● 3 ○ 4 ○ 5 ○ 6

Directions: Please fill in the circle under the response that best describes your relationship with your child.	Strongly Agree	Agree	Mildly Agree	Mildly Disagree	Disagree	Strongly Disagree
1. Even though being a parent could be rewarding, I am frustrated while my child is at his/her present age.	○	○	○	○	○	○
2. I go to bed and wake up feeling that I have not achieved very much.	○	○	○	○	○	○
3. Sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	○	○	○	○	○	○
4. My own mother was better prepared to be a good parent than I am.	○	○	○	○	○	○
5. I would make a good role model for new parents who needed to learn what it takes to be a good parent.	○	○	○	○	○	○
6. Being a parent is manageable and any problems are easily solved.	○	○	○	○	○	○
7. A difficult thing about being a parent is not knowing whether you are doing a good job or a bad one.	○	○	○	○	○	○
8. I know what to do when problems arise with my child.	○	○	○	○	○	○
9. I am able to get information to help me better understand my child.	○	○	○	○	○	○
10. Sometimes I feel like I'm not getting anything done.	○	○	○	○	○	○
11. I am satisfied with the way I care for my child.	○	○	○	○	○	○
12. When I need help with problems in my family, I am able to ask for help from others.	○	○	○	○	○	○
13. If anyone can find the answer to what is troubling my child, I can.	○	○	○	○	○	○
14. My talents and interests are in other areas, not in being a parent.	○	○	○	○	○	○
15. Considering how long I've been a parent, I feel completely at home with this role.	○	○	○	○	○	○
16. If being a parent to a child were more interesting, then I would be motivated to do a better job as a parent.	○	○	○	○	○	○
17. I honestly believe that I have all the skills necessary to be a good parent to my child.	○	○	○	○	○	○
18. Being a parent makes me tense and anxious.	○	○	○	○	○	○
19. I now realize the problems of taking care of a child are easy to solve once you know how your actions affect your child.	○	○	○	○	○	○

Family ID: E S E Resp: ⊛ PC ○ AC Int ID:

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Directions: Fill in the circle for each statement that best describes how often you felt this way **during the past week**.

During the past week. . .	Rarely or none of the time (0-1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	○	○	○	○
2. I did not feel like eating; my appetite was poor.	○	○	○	○
3. I felt that I could not shake off the blues, even with help from my family or friends.	○	○	○	○
4. I felt that I was just as good as other people.	○	○	○	○
5. I had trouble keeping my mind on what I was doing.	○	○	○	○
6. I felt depressed.	○	○	○	○
7. I felt that everything I did was an effort.	○	○	○	○
8. I felt hopeful about the future.	○	○	○	○
9. I thought my life had been a failure.	○	○	○	○
10. I felt fearful.	○	○	○	○
11. My sleep was restless.	○	○	○	○
12. I was happy.	○	○	○	○
13. I talked less than usual.	○	○	○	○
14. I felt lonely.	○	○	○	○
15. People were unfriendly.	○	○	○	○
16. I enjoyed life.	○	○	○	○
17. I had crying spells.	○	○	○	○
18. I felt sad.	○	○	○	○
19. I felt that people disliked me.	○	○	○	○
20. I could not "get going."	○	○	○	○

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