

A CROSS-CULTURAL MEDIATED MODEL ANALYSIS OF PARENT
RESPONSIVENESS, CHILD SOCIAL COMPETENCE, AND CHILD EMERGENT
LITERACY

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ABSTRACT

YANNICK ORTHODOXOU: A cross-cultural mediated model analysis of parent responsiveness, child social competence, and child emergent literacy.
(Under the direction of Barbara H. Wasik, Ph.D.)

The current study analyzed data from the Even Start Classroom Literacy Interventions and Outcomes Study (CLIO) to examine the linkages between parent responsiveness, child social competence, and child emergent literacy skills and to determine whether the proposed mediated model is moderated by cultural group membership. The sample of 1140 low-income families included 25% White, 11% Black, 15% English-Speaking Hispanic, and 49% Spanish-Speaking Hispanic parent-child dyads. Path analysis and nested model fit analysis confirmed cross-cultural variation in the proposed mediated model based on ethnicity and home language. With the exception of Spanish-Speaking Hispanic families, there was limited evidence that child social competence mediated the relation between parent responsiveness and child emergent literacy. Support for the predictive role of parent responsiveness on child social competence was found only within the Hispanic groups, regardless of home language status. Study findings did, however, indicate consistent support for the predictive role of parent responsiveness and child social competence on the development of child emergent literacy skills across all cultural groups. Cultural variations were also found in the linkages between study covariates and child outcomes, including child age and gender, maternal education, household income, family mobility, and number of adults in household.

This dissertation is dedicated to
my grandmother, my mother, and my daughter.

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CHAPTER I: INTRODUCTION

As children's first teachers, parents play a unique, direct, and substantial role in shaping their early learning environment (Rimm-Kaufman & Pianta, 2000; Brooks-Gunn & Markman, 2005). Indeed, the relationship between parenting and child development has long been a focus of research and intervention studies (e.g. Bell & Ainsworth, 1972; Bradley, Caldwell, & Rock, 1988; Estrada, Arsenio, Hess, & Holloway, 1987; Hess & Shipman, 1965). For decades, such studies, conducted mainly with middle-income European American families, have informed the models and theories used by educators and politicians to develop important family education and child school readiness policy and program initiatives. Given, however, the growing diversity of the student population in the United States and continued concerns about the persistent and problematic gap in school outcomes along socioeconomic and demographic lines (Aud et al., 2010; National Center for Children in Poverty [NCCP], 2011; Planty et al., 2009; West, Malone, Hulsey, Aikens, & Tarullo, 2010), crucial questions about the generalizability of these traditional theories and models have been raised (Deater-Deckard & Dodge, 1997; Hill, Bush, & Roosa, 2003; Iruka, LaForett, & Odom, 2012; Raver, Gershoff, & Aber, 2007; Whiteside-Mansell, Bradley, & McKelvey, 2009). The current study proposes to examine the cross-cultural validity of a model of parenting and school readiness skills, namely parent responsiveness, child social competence, and child emergent literacy.

Background Information

During the 1960s, President Johnson turned the national spotlight on the plight of Americans living in poverty and the growing need for education and healthcare initiatives aimed at reducing growing poverty rates. His “War on Poverty” introduced several major federal policies and programs, including Project Head Start which continues to provide low-income families with early comprehensive child development services (Office of Head Start, n.d.). Since the 1960s, a wealth of research and intervention studies, as well as program evaluations, have added significantly to the literature on early childhood interventions by examining the early learning experiences that help increase children's chances of success in school. Some of the common threads that have emerged from these studies are outlined below.

First, young children who enter school with delayed social competence and/or delayed emergent literacy skills are at a significantly increased risk for early and persistent school failure (Arnold, 1997; Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Campbell & Ramey, 1994; Downer & Pianta, 2006; Hamre & Pianta, 2000; Hindman, Skibbe, Miller, & Zimmerman, 2010; Ladd, Birch, & Buhs, 1999; Lonigan et al., 1999; Spira, Storch, & Fischel, 2005). Further, these two skill areas of social competence and emergent literacy are shown to be highly correlated (Beckwith & Rodnig, 1996; Kaiser, Hancock, Cai, Foster, & Hester, 2000; Raver & Knitzer, 2002; Sektan, McClelland, Acock, & Morrison, 2010; Steelman, Assel, Swank, Smith, & Landry, 2002). Social competence skills, such as the ability to understand and self-regulate emotions, behavior, and attention, as well as to comply with rules and cooperate with peers, significantly impact young children’s ability to interact with others and to learn within a classroom setting (Denham & Burton, 2003; Hindman et al.,

2010; Ladd et al., 1999; Raver & Knitzer, 2002; West et al., 2010). Emergent literacy represents a developmental process that begins very early in a child's life and includes the knowledge, skills, and strategies that lay the foundation for formal reading and writing (Dickinson & McCabe, 2001; Roberts, Jurgens, & Burchinal, 2005; Sénéchal & LeFevre, 2002; Whitehurst & Lonigan, 1998). As a result, these two domains are often emphasized as part of many programs' "school readiness" paradigm (e.g., Head Start Program, High/Scope Perry Preschool Curriculum, Ready Schools, Smart Start, Even Start Family Literacy Program, Carolina Abecedarian Project).

Second, parenting behaviors and characteristics play a key role in the development of these school readiness skills (Bradley, Corwyn, Burchinal, Pipes McAdoo, & Garcia Coll, 2001; Burchinal et al., 2002; Burgess, Hecht, & Lonigan, 2002; Dodici, Draper, & Peterson, 2003; Landry, Smith, Swank, & Miller-Loncar, 2000; Parker, Boak, Griffin, Ripple & Peay, 1999; Sénéchal & LeFevre, 2002; Wasik & Hermann, 2004). Among the numerous parenting dimensions examined, parent responsiveness has garnered much attention as both a promotive and protective factor, especially for higher risk students (Bradley et al., 1988; Gregory & Rimm-Kaufman, 2008; Hill et al., 2003; Hirsh-Pasek & Burchinal, 2006; NICHD ECCRN 2002; Pungello, Iruka, Dotterer, Mills-Koonce, Reznick, 2009; van IJzendoorn, Dijkstra, & Bus, 1995; Whiteside-Mansell et al., 2009). This key parenting dimension defines the quality of the parent-child relationship in terms of warm, sensitive, affectionate, and engaged behavior (Ainsworth, 1979; Brooks-Gunn & Markman, 2005; Downer & Pianta, 2006; NICHD ECCRN, 2006; van den Boom, 1997) that is delivered in a prompt, consistent, and appropriate manner (Roberts et al., 2005; Bornstein, Tamis-LeMonda, Hahn, & Hayes, 2008; Dodici et al., 2003; Landry, Smith, Swank, Assel, & Vellet, 2001). Therefore, it is not

surprising that the aforementioned prevention and early intervention programs also strongly support parental involvement and foster positive parent-child interactions. Other well-known programs with similar parenting goals include the Chicago Child-Parent Centers Program (CPC), Parent-Child Home Program (PCHP), and Parents as Teachers Program (PAT).

Third, socioeconomic status and cultural indicators, such as ethnicity and home language, have been linked to differences in both parenting and child outcomes (Baumrind, 1972; Chang et al., 2007; Farkas & Beron, 2004; Hammer, Davison, Lawrence, & Miccio, 2009; Hammer & Weiss, 1999; Hart & Risley, 1995; Hill et al., 2003; Hindman et al., 2010; NCCP, 2011; McLoyd, 1990; Páez, Tabors, & López, 2007; Quiroz, Snow, & Zhao, 2010; West et al., 2010). This observed variability has had numerous crucial implications for both research and policy. Understandably, it has increased attention on how these variations in parenting and child outcomes contribute to the achievement gap as well as to differences in social-emotional and behavioral outcomes (Brooks-Gunn & Markman, 2005; McLoyd, 1998). This variability has also raised awareness of how these differences are perceived within an education system that is primarily based on mainstream values and expectations (Ogbu, 1981; Halgunseth, Ispa, & Rudy, 2006). Additionally, these variations further underscore the need for culturally relevant theoretical frameworks to inform the intervention programs that aim to effectively serve diverse student and family populations (Garcia Coll et al., 1996; Raver et al., 2007).

Study Overview

For over a decade, evaluations of the federal Even Start Family Literacy Program have sought to identify and strengthen the variables and pathways connecting parenting and child outcomes (Judkins et al., 2008). In the most recent of these evaluations, Judkins and

colleagues found that parent responsiveness was statistically significantly related to both child emergent literacy and child social competence. This finding is not surprising, given the wealth of evidence in the literature that illustrate the predictive nature of parent responsiveness for child social competence and for child emergent literacy skills (Bocknek, Brophy-Herb, & Banerjee, 2009; Burchinal et al., 2002; Deater-Deckard, Ivy, & Petrill, 2006; Dodici et al., 2003; Hill et al., 2003; Ispa et al., 2004; McLoyd & Smith, 2002; Pungello et al., 2009; Roberts et al., 2005). Though the aforementioned studies provide useful information about how language/literacy and social skills are separately influenced by parent responsiveness, they ignore the large body of evidence that not only links these two areas of child development to each other but also suggests directions of influence (e.g. Arnold, 1997; Beckwith & Rodning, 1996; Steelman et al., 2002, van IJendoorn et al., 1995, Vygotsky, 1978).

To provide a more complete and accurate picture, it is necessary to model the pathways among these parent and child variables together. Additionally, these models of developmental pathways need to exhibit cross-cultural validity. The few studies that have examined these parent and child variables together tend to have limited sample diversity and/or utilize methodological techniques that restrict the researchers' ability to test causal hypotheses and simultaneously model multiple pathways (e.g. Beckwith & Rodning, 1996; Downer & Pianta, 2006; Hirsh-Pasek & Burchinal, 2006; Parker et al., 1999; Sektnan et al., 2010; Steelman et al., 2002). The current study aims to address the limitations of previous research by examining the equivalence of pathways linking parent responsiveness, child social competence, and child emergent literacy. Specifically, the proposed study will explore child social competence as a potential mediator that links parent responsiveness to child

emergent literacy skills. In addition, the study will examine whether these pathways vary across cultural groups.

CHAPTER II: LITERATURE REVIEW

Child Social Competence and Emergent Literacy

Key school-entry expectations include social-emotional and early literacy skills that have already been developing within the home environment since birth and that have been deemed essential for successfully meeting the demands of the classroom environment. Social-emotional skills such as making friends, taking turns, complying with rules, and regulating behavior, emotions, and attention, are crucial to children's ability to learn and interact appropriately with their peers and teachers (Bocknek et al., 2009; Hindman et al., 2010; Ladd et al., 1999; West et al., 2010). Emergent literacy skills lay the foundation for formal reading and writing and include a range of skills such as phonological awareness, expressive language, receptive vocabulary, print concepts, syntax, and grammar (Dickinson & McCabe, 2001; Judkins et al., 2008; Missal, et al., 2007; Roberts et al., 2005; Sénéchal & LeFevre, 2002; Spira et al., 2005; Whitehurst & Lonigan, 1998).

Research has not only shown a strong link between early social-emotional and emergent literacy skills to later academic success but has also provided strong evidence that these two skill areas are highly correlated (Arnold, 1997; Kaiser et al., 2000; Ladd et al., 1999; Raver & Knitzer, 2002; Sektnan et al., 2010; Spira et al., 2005). Using the Family and Child Experiences Survey data set, Hindman et al. (2010) found that teacher-rated social skills, such as cooperative behaviors and self-control, predicted growth in children's literacy

skills. Steelman et al. (2002) drew similar conclusions in their longitudinal study suggesting that "children with greater language skills are more likely to have strong social skills, which is predictable given that language is a major thoroughfare for social interaction" (p. 136). In their study, West et al. (2010) found that children who were read to more often at home were more likely to be rated by their teachers as having higher social skills. Burchinal et al. (2002) observed that elementary school-aged children who were described as "more outgoing" showed faster growth in both reading and mathematics skills.

A few studies have attempted to further determine the direction of influence between the two skills areas. Steelman et al. (2002) found that child social skills predicted language skills, whereas language skills did not predict social skills. Similarly, Beckwith and Rodning (1996) found that emotional functioning during infancy for preterm children contributed to language skills at age three years and to social competency at age five years. Arnold (1997), on the other hand, found evidence to support a model of attention mediating the causal effects of language/literacy-related academic skills on externalizing behaviors, for boys between the ages of three and six years. They suggest, however, that the direction of influence may continue to shift as children get older and build upon these foundational skills.

Such observations, that language and social skills are closely tied to each other, are not new to the field. Vygotsky's theories about the social origins of language and cognitive skills emphasize the interdependence of language, or any sign system, and human-environmental interactions, (i.e., one cannot develop without the other). Further, the relationship between language and social interactions evolves over time as each exerts influence on the other to drive developmental change (Vygotsky, 1978). After conducting a meta-analysis of studies on language competence, van IJendoorn and colleagues (1995)

recommended that social-emotional and language skills be studied together in order to further understand the direction of influence. They put forth several hypotheses to potentially explain the causal relationship between attachment, which influences children's social-emotional disposition, and language competence. These hypotheses posit that the quality of the parent-child attachment determines the child's motivation to explore language and willingness to engage in extended verbal interactions with parents or respond to parents' verbalizations. In addition to the quantity of verbal exchanges, the attachment style may also affect the quality of verbal communication.

Drawing from a rich body of research on family literacy practices and programs, Pianta (2004) explains:

For as long as literacy has been studied, interactions and relationships between children and adults have been recognized as the primary medium through which literacy is acquired. From birth, children engage in increasingly elaborated and symbolically mediated interactions with caregivers in which emotion, cognition, and communication are intertwined and organized. . . In this sense, literacy, both broadly conceived and narrowly viewed, is only one marker point along a broad and long developmental progression in which children's capacities and skills emerge from child-adult relationships. (p.175)

These adult-child relationships serve to support the development of "basic task-related skills such as attention, conceptual development, communication skills, and reasoning as well as the motivation and interest to approach tasks in an organized, confident manner, to seek help when needed, and to use help appropriately" (p.183). Described in this manner, it is easy to see how social competence and emergent literacy can share mutual spheres of influence that are tied to parenting behaviors and the parent-child relationship. Further examination of the parenting literature reveals the mechanisms through which these can occur.

Parent-Child Interactions and Parenting Styles

Several key theoretical frameworks have historically guided our understanding of how parents influence children's development and learning. Ecological systems theory (Bronfenbrenner, 1979) laid the foundation for consideration of the child's environmental context as having a profound and sustained impact on developmental outcomes.

Bronfenbrenner described his theory as a nested, multilevel system consisting of a microsystem, mesosystem, exosystem, and macrosystem. The microsystem is comprised of elements of the child's most immediate environment, for example, parents, siblings, peers, schools, and neighborhoods. These elements directly and consistently influence the child, as well as interact with each other within the mesosystem. Settings that affect the child indirectly (e.g., parent job) are included in the exosystem. Cultural contexts constitute the macrosystem. These contexts include shared characteristics, behaviors, and values linked to such variables as ethnicity, socioeconomic status, and politics.

Bronfenbrenner's ecological perspective was influenced by developmental psychologist Lev Vygotsky's work regarding social interactions and cultural internalization. Vygotsky's (1978) socio-cultural theory emphasized social interactions with more experienced learners (e.g., parent) as necessary for children's learning and development. He theorized that these social interactions mediate not only language development for the child, but also facilitate the transmission and internalization of cultural values. Both ecological systems and socio-cultural theories recognize the importance of the parent-child dyad, the significant implications that their interactions have on child developmental outcomes, and the influence of culture in shaping these interactions. The crucial and enduring impact of early

relationship experiences on children's development, learning, and emotional regulation has also been supported by more recent neurobiological findings (Blair, 2010; Shore, 1997).

The social-emotional, behavioral, and linguistic contexts of parent-child interactions are complex and involve many interrelated variables. Much of what we understand today about the importance of the parent-child relationship, especially during the early developmental years, grew out of the work of Ainsworth (1979) on attachment theory, as well as Baumrind (1971) on parenting styles. Building upon the ethological-evolutionary work of Bowlby, Ainsworth and colleagues designed the "strange situation" laboratory study to further observe how individual differences in behaviors and experiences lead to the development of different patterns of attachment between infants and their mothers (Ainsworth, 1979; Bell & Ainsworth, 1972). Systematic observations of these mother-infant interactions revealed several distinct behavioral dimensions that were then used to classify these differing patterns. They included security, anxiety, proximity, cooperativeness, and anger. Their work added significantly to a growing body of research that would continue to show that a secure attachment between infant and mother is ideal for optimal development of children's cognitive, linguistic, social-emotional, and behavioral development (Matas, Arend, & Sroufe, 1978; NICHD ECCRN, 2006; van IJendoorn et al., 1995).

Secure attachments describe the quality of the parent-child relationship, which involve behavioral dimensions of both the parent and the child. The specific parenting behaviors that predict the formation of secure attachments include maternal sensitivity, warmth, stimulation, attentiveness (Bell & Ainsworth, 1972, NICHD ECCRN, 2006, van IJendoorn et al., 1995), supportive presence, and quality of assistance (Matas et al., 1978). This constellation of parenting behaviors is often defined collectively in the literature as

parental responsiveness (e.g., Gregory & Rimm-Kaufman, 2008; Hirsh-Pasek & Burchinal, 2006; Judkins et al., 2008; Maccoby & Martin, 1983; Steelman et al., 2002; van IJendoorn et al., 1995). It is sometimes defined by other terms such as parental nurturance (Brooks-Gunn & Markman, 2005) or simply referred to as parental warmth or sensitivity (Deater-Deckard et al., 2006; Downer & Pianta, 2006; Ispa et al., 2004; Hirsh-Pasek & Burchinal, 2006; Pungello et al., 2009; Roberts et al., 2005). These terms all describe the social interaction style of the primary caregiver that is observed across multiple behavioral dimensions and facilitates the parent-child interaction (van den Boom, 1997).

Baumrind (1971) attempted to formally define such constellations of parenting behaviors and thus developed a parenting style typology that continues to significantly influence the field today in various ways. Using groups of children differentiated by social-emotional behavior outcomes, she grouped their parents into three different categories of parental authority defined as 'authoritative, authoritarian, and permissive parenting'. These categories were based on dimensions of responsiveness and demandingness (also referred to as behavioral control or intrusiveness). Children in her sample who were observed as highly autonomous, self-controlled, secure, and happy, had parents who exhibited high levels of warmth, reasoning, sensitivity, and encouragement of independence, with clear boundary setting. Baumrind labeled these parents 'authoritative'. A second group of parents, labeled 'authoritarian', were observed as being detached, controlling, and exhibiting low levels of warmth with their children. These children were seen as unhappy, withdrawn, and distrustful. The third group, known as 'permissive,' exhibited low levels of control and involvement but high levels of warmth. Their children scored low on self-reliance, exploration, and self-control. Maccoby and Martin (1983) expanded Baumrind's typology to

include a fourth group of parents called 'indifferent/uninvolved'. Based on the same dimensions of responsiveness and demandingness, these parents are observed as being low on warmth, control, acceptance, and communication.

Cultural differences in parenting styles. Baumrind (1972) cautioned that her typology, based mostly on European American, middle-class norms, may have differential outcomes for ethnic minority groups, which need to be seriously considered within the larger social context. She found that, though most African American parents in her studies would be classified as authoritarian, their behaviors and their children's outcomes were different when compared to their European American counterparts. Specifically, she found that African American authoritarian parents were more laid back, playful, and encouraged autonomy than European American authoritarian parents. As a result, their female children exhibited more social maturity and beneficial adaptive behaviors than their European American counterparts. Based on these findings, she suggested that, “Social norms and historical factors probably influence the extent to which authoritarian child-rearing practices are accompanied by the authoritarian personality syndrome; black families may be characterized by the practices but not the syndrome” (Baumrind, 1972, p. 265).

Indeed, researchers interested in examining cultural differences in parenting style have found that using Baumrind's typology often leads to inconsistent and sometimes misleading findings (McWayne, Owsianik, Green, & Fantuzzo, 2008; Steinberg, Dornbusch, & Brown, 1992). Authoritative parenting styles have traditionally been considered more socially desirable due to their links to more positive child outcomes, especially with European American middle-class samples (Steinberg et al., 1992; Maccoby & Martin, 1983). To a certain extent, this line of research has contributed to a stigma of culturally deficient

parenting for ethnic minorities and lower income families who are less likely to be classified as authoritative (Gutman & Eccles, 1999; Steinberg et al., 1992; Steelman et al., 2002).

Interestingly, some studies have challenged these stereotypes, finding evidence that some ethnic minorities do exhibit more authoritative parenting behaviors than originally thought (Calzada & Eyberg, 2002; Steinberg et al., 1992), especially with regard to high levels of warmth and sensitivity (Ceballo et al., 2008; Halgunseth et al., 2006). Other studies have challenged the typologies themselves. In particular, the combination of parental warmth and control observed across and within cultural groups appears to be more complex than Baumrind (1971) originally outlined. While some researchers have found inverse relationships between warmth and control for majority (Gutman & Eccles, 1999; Hill et al., 2003; Ispa et al., 2004; Steelman et al., 2002) and minority groups (Brooks-Gunn & Markman, 2005; Calzada & Eyberg, 2002), other studies have found that for some ethnic and linguistic minorities, parental warmth and control can share a positive or even negligible relationship (Brody & Flor, 1998; Gregory et al., 2008; Hill et al., 2003; McLoyd, 1998).

Researchers have found intragroup differences in parenting as well, based on sociocultural indicators such as socioeconomic status, immigration status, acculturation level, home language, and country of origin. For example, some studies have found qualitative and quantitative differences in parents' communication styles with their young children based on income (Baumrind, 1972; Hammer & Weiss, 1999; Hart & Risley, 1995, Farkas & Beron, 2004) and caregiver education level (Huttenlocher, Vasileya, Waterfall, Vevea, & Hedges, 2007). These findings suggest that parents from higher income households tend to engage in more language-rich behaviors that support their children's own language acquisition and that

such parenting behaviors can potentially mediate negative poverty effects, regardless of ethnic group membership.

Halgunseth et al. (2006) suggest that the cultural values of Hispanic families (*familisimo, respeto, educacion*), as well as the immediate social context (e.g., immigration status, socioeconomic status, home language) influence parental behaviors. Calzada and Eyberg (2002) looked at parenting within groups of Hispanic families and found that Dominican parents exhibited higher levels of warmth and involvement, and were less punitive than Puerto Rican parents. Interestingly, the Puerto Rican parents who scored higher on a measure of acculturation in this study had significantly higher levels of warmth and involvement than their less acculturated Puerto Rican counterparts. In another study, using English Language preference as a measure of acculturation level, Hill et al. (2003) found that the less acculturated (i.e., Spanish-speaking) low-income Mexican American parents exhibited higher hostile control and inconsistent discipline than the English-speaking Mexican American parents. In addition, there was no significant correlation between levels of parental acceptance and hostile control for the English-speaking Mexican American parents, whereas a positive relationship (i.e., higher acceptance linked to higher control) was observed for the Spanish-speaking Mexican American parents.

The ethnographic study of Latino immigrant families conducted by Reese and Gallimore (2000) helps to illuminate some of the ways in which acculturation leads to within-group variability in parenting styles. They observed that though immigrant parents' upbringing in their native countries influence the way they raise their own children, changes in their child-rearing beliefs, values, and behaviors begin to occur when they encounter and must subsequently reconcile some of the similarities and differences between their and the

U.S. mainstream culture, particularly within the public school system. As such, factors like length of time spent in the U.S. as well as home language preference have often been used as indicators of acculturation level for immigrant families. Project FLAME and Madres Para Niños represent a growing group of parent intervention programs for immigrant families that recognize these home-school discontinuities and aim to bridge the gap by understanding and incorporating native parental beliefs and values, maximizing parental resources, strengthening the parent-child relationship, and educating parents on school expectations and activities.

Parent Responsiveness, Child Development, and Cultural Context

As previously mentioned, parental responsiveness represents a major contributor to the quality of the parent-child relationship. Highly responsive parents are defined as those who demonstrate awareness of their child's individual linguistic and social-emotional signals and needs, who are themselves emotionally accessible, and who willingly respond in a timely, warm, nurturing, supportive, and developmentally appropriate way (Ainsworth, 1979; Bornstein et al., 2008; Landry et al., 2001; van den Boom, 1997). This parenting dimension remains at the forefront of parenting and child outcome studies for several reasons.

First, numerous studies have found that responsive parenting behaviors like taking turns, facilitating joint attention, maintaining positive affect, exhibiting warmth and support, providing clear expectations, and modeling socialization skills, provide children with an enriched, collaborative, and interactive learning environment that promotes language and literacy growth (Belsky et al., 2007; Cabrera et al., 2006; Gregory & Rimm-Kaufman, 2008; Hill, 2001; Hirsh-Pasek & Burchinal, 2006; NICHD ECCRN 2002; Pungello et al., 2009; Roberts et al., 2005). In their longitudinal study of mother-child interactions and child

outcomes from kindergarten through high school, Gregory and Rimm-Kaufman (2008) found that maternal sensitivity was linked to higher grades for students deemed "at-risk" based on ethnic minority status and low maternal education. Roberts et al. (2005) conducted a longitudinal study of low-income African American families and found that maternal sensitivity significantly correlated with children's receptive language scores at age three years and at kindergarten entry. In addition, overall home responsiveness, which includes maternal emotional and verbal responsiveness, acceptance, environmental organization, stimulation, and involvement, significantly predicted receptive vocabulary, receptive language, expressive language, and early literacy skills above and beyond book reading strategies. Pungello et al. (2009) in a longitudinal study of children's language development found that maternal sensitivity, in addition to socioeconomic status and race, was a significant predictor of both receptive and expressive language skills.

Second, child social, emotional, and behavioral self-regulation skills development has also been linked to these same responsive parenting behaviors (Bocknek et al., 2009; Bradley et al., 2001; Brody et al, 2005; Brooks-Gunn & Markman, 2005; Estrada et al., 1987; NICHD ECCRN, 2006; Whiteside-Mansell et al., 2009). Bocknek and colleagues (2009) examined a group of low-income African American families and found that parents' level of supportiveness significantly predicted the growth rates of their young children's emotional regulation skills beyond initial child emotionality and parent risk status (based on variables such as parent education, welfare, unemployment, and single and teenage parenthood status). The researchers propose that "parental supportiveness may represent a subtle form of emotion socialization by providing a context in which toddlers may be better able to utilize their mothers as effective resources in managing emotions" (p. 452) and that these emotion

regulation skills are necessary to help children successfully navigate the social and academic demands of the school environment. The NICHD ECCRN (2006) longitudinal study examined the effects of sensitive and stimulating maternal parenting on young children's behavior and social skills. Results indicated that the overall quality of maternal parenting, measured at age 15, 24, 36, and 54 months, significantly predicted both parent- and teacher-rated child social skills and externalizing problems in kindergarten and first grade. In addition, decreases in levels of parent responsiveness were significantly associated with higher levels of externalizing problems as rated by both teacher and parent.

Third, parental responsiveness has been shown to buffer the potentially negative effects of other parenting behaviors. McLoyd and Smith (2002) conducted a longitudinal analysis of mother-child dyads in African American, Hispanic, and European American families. They found that while high and increased levels of spanking over the six-year study period were linked to increased child behavioral problems, maternal support moderated this link. The authors suggest that this link may be due to the child's interpretation of physical discipline within the context of high emotional support. They explain that children "may be less likely to view spanking as harsh, unjust, and indicative of parental rejection when relations with the parent are generally warm and supportive" (p. 51). Berlin and associates (2009) drew similar conclusions when examining verbal punishment in their low-income sample of African American, Mexican American, and European American children. They found that maternal responsiveness moderated the negative effects of verbal punishment on child cognition and aggression at age two years. They suggest that within "the context of mothers' emotional responsiveness, verbal punishment may be less likely to be perceived by the child as negative or rejecting and may, in fact, be experienced as an indication of

investment and support. Maternal emotional supportiveness may also increase the effectiveness of verbal punishment" (p. 1418).

Similar moderation effects have been noted by Deater-Deckard et al. (2006) for maternal warmth on the correlation between harsh discipline and child externalizing problems and for maternal warmth between maternal intrusiveness and child negativity for African American toddlers (Ispa et al., 2004). Hill et al. (2003) observed consistent connections between maternal acceptance and child conduct problems across ethnicities but found differences based on language preference for Mexican American families. Thus, parents who use physical or verbal punishment but are not emotionally supportive are likely to exhibit more negative parenting behaviors. In addition, the harmful effects of negative and intrusive parenting practices are more pronounced in the absence of an emotionally supportive parent-child relationship.

The aforementioned studies highlight the potential promotive significance of parent responsiveness for all children as well as the potential protective significance for children deemed at-risk based on biological and social factors. In addition, cultural differences in the meaning, expression, and effects of parent responsiveness add a layer of complexity that requires further examination of this crucial parenting behavior.

Models of parent responsiveness, child social competence, and child emergent literacy. Given the overwhelming evidence outlined within the previous sections that parent responsiveness, child social competence, and child emergent literacy are closely related, it is surprising that only a few studies have attempted to model this relationship and that even fewer have done so with diverse samples and advanced statistical methodologies.

Several studies used the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD) longitudinal database to explore the relationship among all three variables. Downer and Pianta (2006) tested social and language-based academic competence as mediators between early home and child care experiences on later cognitive and achievement outcomes. Their study found that early and concurrent maternal sensitivity (among several early home experiences as well as ethnicity) predicted children's first grade academic and cognitive outcomes. They also found support for children's social competence as a significant predictor of growth in academic skills from kindergarten to the first grade and as a mediator between children's early experiences and achievement level at school entry. Based on their findings, they proposed that sensitive parents tend to teach pre-academic skills, like reading, and have children who are better able to benefit from instruction in the classroom due to stronger social skills. Hirsh-Pasek and Burchinal (2006) observed optimal skill development for children whose mothers were consistently sensitive over time. Specifically, they found that changes in maternal sensitivity predicted language and other pre-academic skills beyond demographic variables such as socioeconomic status, maternal education, and single-parent household status. Sektnan et al. (2010) found that children's behavior regulation skills at 54 months and at kindergarten mediated the link between family risk factors (ethnicity, education level, socioeconomic status, and maternal depressive symptoms) and child achievement in first grade.

Beckwith and Rodning (1996) studied maternal responsiveness and child developmental outcomes with a sample of low-income, preterm children and their mothers. The two dimensions of the maternal responsiveness construct measured were maternal

sensitivity and dyadic verbal reciprocity (defined as maternal verbalizations in response to infant vocalization). The researchers found that sensitivity during infancy predicted later social competence but not language skills. On the other hand, dyadic verbal reciprocity predicted both language (at age three) and social competence (at age five). They also found that emotional functioning during infancy was related to maternal responsiveness.

Steelman et al.'s (2002) longitudinal study of preterm and full-term children tested the hypothesis that child language and parental discipline mediate the relation between maternal responsiveness and social skills. Observations of parent-child interactions during daily activities and play were made during home visits when the children were 12, 24, 40, and 54 months old. Results confirmed that maternal warm responsiveness was significantly related to child social skills at age 12 months and again at age 54 months. Child language at age 40 months did not significantly predict social skills at age 54 months, however, child social skills at age 12 months significantly predicted child language at age 24 months. These findings suggest that early social skills lay the foundation for later language skills. Their study was one of a few to use structural equation modeling (SEM) techniques to model the complex link between maternal responsiveness and child social and linguistic skills. SEM offers researchers the advantage of a more comprehensive design and analysis approach due to its ability to test complex relationships with both observed and latent variables. In addition, it allows researchers the flexibility to model multiple pathways simultaneously, as well as evaluate causal hypotheses by isolating and accounting for source variance (Hoyle, 1995). Despite its strengths in research design, the Steelman et al. (2002) study sample lacked sufficient diversity in terms of socioeconomic status, ethnicity, and home language.

Cultural variations within models. Garcia Coll and colleagues (1996) developed an integrative conceptual model of child development for ethnic minority populations that shed much needed light onto the social mechanisms that researchers like Bronfenbrenner, Vygotsky, and Baumrind merely hinted at within their child development theories. Their integrative model incorporated the multiple and interrelated sociocultural constructs that are universally encountered as well as those that appear uniquely salient to ethnic minority groups. Their work served to challenge the previous culturally and genetically deficient models by demonstrating how intrinsic developmental processes differentially interact with diverse ecologies for minority families. Due to socialization influences such as ethnicity, acculturation, socioeconomic status, discrimination, cultural adaptation, and their multiple pathways of influence on parents and children, a clearer picture of the normative developmental processes that occur within minority cultures begins to emerge.

Current research continues to show the need to consider culture and context when examining parenting and child outcomes within diverse families (e.g., Murry, Brody, Simons, Cutrona, & Gibbons, 2008; Raver et al., 2007; Yosso, 2005). Critical race theory (CRT) in education is one area of study that warrants additional attention as it allows researchers a framework from which to "theorize, examine and challenge the ways race and racism implicitly and explicitly impact on social structures, practices and discourse" (Yosso, 2005, p. 70). CRT in education has further challenged the deficit view of minority communities and has produced alternative theories such as "community cultural wealth" which incorporates the range of "knowledge, skills, abilities, and contacts" that minority communities possess and must use in order to survive and thrive within a larger majority

culture and context. These cultural strengths include aspirational, familial, social, navigational, linguistic, and resistant sources of cultural capital (Yosso, 2005).

The literature outlined below highlights the shortcomings of traditional models of parenting and child language and social-behavioral outcomes that have been used to explain ethnic/racial differences. While these models may be most salient for middle-income European American children and their families, studies show differences in the strength of model pathways based on ethnic group membership (Raver et al., 2007; Whiteside-Mansell et al., 2009), as well as differences in the patterns of connections among ethnic groups (Bradley et al., 2001, Whiteside-Mansell et al., 2009) and even within ethnic groups (Hill et al., 2003; Iruka et al., 2012). These findings underscore the importance of examining the cross-cultural validity of such models.

In their extensive review of studies involving parenting behaviors and children's school readiness skills, Brooks-Gunn and Markman (2005) noted that ethnic differences in parenting behaviors, including parental nurturance, mirror ethnic gaps in children's school readiness skills. These differences have also been observed by Hammer, Farkas, and Maczuga (2010), Pungello et al. (2009) and West et al., (2010). Many studies tend to pinpoint income as a major contributor to these observed cultural differences, however, closer examination of the complex associations among income, ethnicity, race, and family and community processes has raised concerns about measurement and model equivalence in studies of children's school readiness skills (Garcia Coll et al., 1996; McLoyd, 1998; Murrey et al., 2008; NCCP, 2008; Raver et al., 2007).

A few studies have evaluated the nature of the relationship among these specific parent and child variables, using diverse samples. Parker et al. (1999) examined whether

aspects of the parent-child relationship and the home learning environment predict children's school readiness skills (which included language and cognitive development as well as home- and school-based social competence), using a pre/posttest longitudinal design. They studied 173 parent-child dyads of four-year-olds enrolled in Head Start programs. Their sample consisted mainly of Spanish speaking and foreign-born participants who also primarily had low socioeconomic status and low maternal education levels. Results supported the link between the parent-child relationship, as well as the home learning environment, and children's school readiness skills. Interestingly, acculturation level was not related to child outcomes. Other parenting behaviors associated with strictness and aggravation also correlated with children's vocabulary and social-emotional behavior.

Similarly, Landry et al. (2000) studied an ethnically diverse sample of mother-child dyads by modeling pathways of influence between early parent and toddler characteristics and later (age 4 1/2 years) social and cognitive-language functioning. The sample included a high proportion of African American participants. Results indicated that the skills children developed early on (2 and 3 1/2 years) during social interactions with mothers laid the foundation for further development of self-regulation skills within the social and cognitive/language domains. They also found support for direction of influence from mother to child and not vice versa. One major limitation of the Landry et al. (2000) study was that the researchers combined cognitive and language domains into one variable. In a subsequent analysis they found that early parent responsiveness was linked to child social skills but not to cognitive/language measures (Landry et al. 2001). While these studies support the presence of similar pathways across ethnic groups, there is some compelling evidence that suggests the strength of these connections may vary.

In their study of parenting and school readiness, Raver et al. (2007) found that while lower income levels were linked to lower levels of positive parenting behaviors and child social and cognitive skills across all ethnic groups, the magnitude of some of these connections was significantly different. Using the Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K) dataset and multilevel SEM data analysis techniques, they found that positive parenting was a stronger predictor of child social competence for White children compared to their Black and Hispanic counterparts. They also found that income was a stronger predictor of cognitive skills for Black students compared to other ethnic groups. They concluded that while there were more similarities than differences in the model of poverty and school readiness skills, substantial evidence supported the moderating role of ethnicity. Interestingly, they also found ethnic differences in the measures of positive parenting and child social competence. Specifically, there was a large difference in how parental warmth contributed to the latent parenting construct between White and Hispanic parents as well as the way externalizing behaviors contributed to the child social competence latent construct for Hispanic children.

Bradley et al. (2001) also found evidence of ethnic differences within developmental pathways in their study of parent responsiveness and child behavior problems. They found that higher parent responsiveness was significantly linked to lower behavior problems for lower income African American children but higher behavior problems for Hispanic American children (non-statistically significant trend). Whiteside-Mansell et al. (2009) found that while responsiveness predicted prosocial skills for African American and European American children (but not Hispanic children), it was more protective against internalizing problems for African American children. Interestingly, they also observed a

different pattern of social development across low-income ethnic groups. Specifically, they found that European American preschoolers were more likely to be rated as having problem behaviors by both their teachers and parents. They were also more likely to be rated lowest in prosocial skills by teachers, while Hispanic preschoolers were most likely to be rated lowest in prosocial skills by their mothers.

In their study of cultural variations in the pathways linking parenting models and child school readiness skills, Iruka and colleagues (2012) found significant differences between English- and Spanish-speaking Hispanic Americans. The Spanish-speaking Hispanic families displayed patterns that were more consistent with the African American and European American families than with their English-speaking counterparts. Specifically, sensitive parenting mediated the relationship between maternal education and child school readiness skills for the Spanish-speaking but not for the English-speaking families. They concluded that language preference should also be considered an important cultural measure when examining parenting and child outcomes. Quiroz et al. (2010) studied a group of bilingual families and found that while family income was not linked to children's vocabulary scores in either language, maternal education level predicted children's English but not Spanish vocabulary scores. In addition, those families who engaged in home literacy activities and spoke primarily in English at home had children with higher English and lower Spanish vocabulary scores, and vice versa.

Study Purpose and Rationale

Based on the research previously outlined, it is quite reasonable to expect that a parenting dimension such as parent responsiveness would have a significant impact on children's behavior and learning. Some experts have even linked inadequate parental

responsiveness to severe biological consequences that, in turn, continue to have negative long-term effects on children's development across multiple domains (National Scientific Council on the Developing Child, 2012). In fact, most early child care programs that include parenting interventions often focus some of their resources on enhancing the affective quality of the parent-child relationship (Brooks-Gunn & Markman, 2005) in an effort to improve child school readiness skills.

Dominating this field of research are correlational studies that have undoubtedly advanced our understanding of the connections between parent responsiveness and children's developmental competencies yet leave many unanswered questions about the specific nature of these pathways. In addition, cultural differences in parenting behaviors and child outcomes raise even more questions about the consistency of these parent-child linkages across and within cultural groups. More meaningful and culturally relevant information is needed to better focus research attention and program resources.

This study is designed to address some of these unanswered questions by using a nationally representative dataset to examine child social competence as a potential mediator linking parent responsiveness to child emergent literacy. Using a low-income and culturally diverse sample from a recent evaluation of the Even Start Literacy Program (Judkins et al., 2008) will allow further evaluation of potentially moderating effects of cultural group membership indicators such as ethnicity and home language.

Research Questions and Hypotheses

Question 1: Does child social competence mediate the relationship between parent responsiveness and child emergent literacy skills?

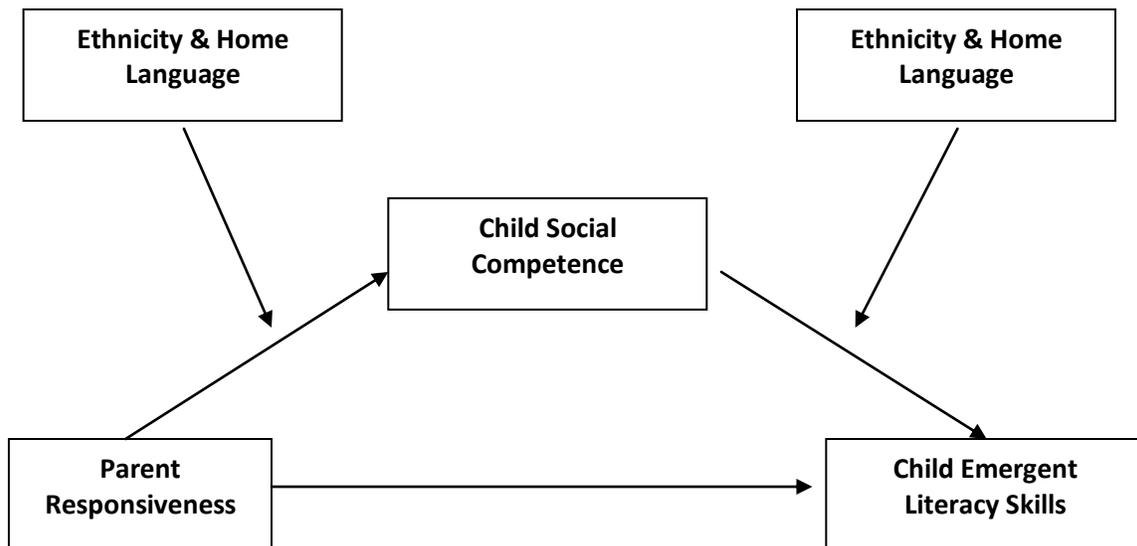
Hypothesis 1: It is hypothesized that child social competence will partially mediate the relation between parent responsiveness and child emergent literacy skills.

Question 2: Does cultural group membership moderate the parent responsiveness, child social competence, and child emergent literacy pathway?

Hypothesis 2: It is hypothesized that cultural group membership will moderate the parent responsiveness, child social competence, and child emergent literacy mediated relationship, such that the strength of the pathway will be different for White, Black, English-Speaking Hispanic, and Spanish-Speaking Hispanic American study participants.

Figure 1

Conceptual model showing mediating and moderating effects



CHAPTER III: RESEARCH METHODS

Data Source

The present study represents secondary analysis of data that were collected as part of the Classroom Literacy Interventions and Outcomes in Even Start (CLIO) study. This nationally representative experimental study was the third in a series of evaluations of the federally funded Even Start Family Literacy Program and was sponsored by the U.S. Department of Education National Center for Education Evaluation and Regional Assistance (NCEE) and the Institute of Education Sciences (IES). Conducted between 2003 and 2006, this evaluation study examined whether research-based, literacy-focused parenting education curricula added value to similarly research-based and literacy-focused early childhood curricula, and whether the combination of these parent and child curricula was more effective than existing instructional services offered within Even Start programs nationwide. The study report (see Judkins et al., 2008) included 2-year impact findings of the CLIO curricula on child literacy and social competence, parent literacy, parenting skills, instructional practices, and preschool and parenting class participation.

CLIO study purpose. The Even Start Family Literacy Program targets low-income families and provides local projects with funding for integrated family literacy services, which include early childhood education, parenting education, parent-child literacy activities, and adult education. When previous evaluations of Even Start programs showed that

randomly assigned study and control groups (comprised mainly of children receiving at-home care by family members) did not differ on parent and child literacy outcome measures, the CLIO study was implemented to investigate the effects of adding higher quality instruction and curriculum content to the programs. Two research-based early childhood and parent education curricula were chosen through a competitive process: (1) Partners for Literacy (Pfl) preschool and parenting curricula and (2) Let's Begin with the Letter People/Play and Learning Strategies (PALS) preschool and parenting curricula.

Partners for Literacy (Pfl) was developed by researchers at the Frank Porter Graham Child Development Institute at the University of North Carolina, Chapel Hill. Scaffolding, enriched care giving, and problem-solving are integrated into the early childhood curriculum, which utilizes interactive book reading strategies and game-like activities to promote the development of oral language, vocabulary, phonological awareness, letter knowledge, print concepts, and social-emotional skills (Judkins et al., 2008). The corresponding parenting curriculum offers themes and activities that mirror the content and goals of the classroom curriculum.

The Let's Begin with the Letter People is a published preschool curriculum (Abrams and Company Publishers) that utilizes 26 imaginary characters, each corresponding to a specific letter of the alphabet, to help children with the development of the following early literacy skills: oral language, oral comprehension, vocabulary, phonological and phonemic awareness, letter recognition, and conventions of print. This early childhood classroom curriculum was supplemented by teacher and parent training on developmentally appropriate and responsive ways to help children build their language, early literacy, and cognitive skills. Teacher training was delivered through the Center for Improving the Readiness of Children

for Learning and Education (CIRCLE) and the parent training was provided by the Play and Learning Strategies (PALS) parenting curriculum; both were developed by the University of Texas-Houston Health Sciences Center (Judkins et al., 2008).

CLIO study design and procedures. Nationwide recruitment of Even Start project sites for the CLIO study took place in spring 2003. According to Judkins et al., (2008) project sites deemed eligible for participation in the CLIO study had to meet the following criteria:

(1) serve preschool children in a center-based instructional setting, (2) enroll a minimum of either five 3- and 4-year-olds in one center-based classroom, or eight 3- and 4-year-olds in two center-based classrooms, (3) provide at least 12 hours per week of center-based preschool instruction, (4) serve a majority of families who speak either English or Spanish, (5) be able to exert control over the curricula used in preschool classrooms, and (6) be willing to meet the study requirements, including being randomly assigned to one of the five study groups. (pp.12-13)

It should be noted that some of the eligibility requirements were adjusted during the screening process in order to widen the pool of eligible project sites. These included lowering the minimum required center-based hours from 12 to 10 and lowering the minimum number of children required in each center-based classroom. Of the 330 Even Start sites deemed eligible, 120 projects across 33 states agreed to participate in the study. The research design included five study groups - two assigned the additional preschool curricula, two assigned the additional combined preschool and parenting curricula, and one control group that continued with the existing Even Start program curricula. Each group, therefore, contained 24 project sites. Group selection was done through stratified random sampling in order to minimize any pre-existing group differences in project size, proportion of Spanish-speaking children, year of project participation, and region.

During fall 2003 and spring 2004, baseline data were collected from preschoolers, their parents, classrooms, and project sites, in all Even Start projects that participated in the CLIO study. Preschool children enrolled at the Even Start study sites were deemed eligible to participate if they were between the ages of 36 and 60 months old during the assessment period and had not yet started kindergarten. Data from the first year of study implementation were collected during fall 2004 and spring 2005 and included additional preschool classroom and parent-child interaction observation measures. Data were again collected on preschoolers as well as their parents, classrooms, and schools during the second year of implementation in spring 2006. Though the CLIO sample was not intended to be a longitudinal study, some children were assessed across multiple data collection periods if they were still enrolled in preschool and were not yet old enough to be eligible to enter kindergarten. The present study includes parent and child preschool outcome data collected during the spring of 2006 from all CLIO Even Start projects.

CLIO study findings. The impact of the CLIO curricula on several parent, child, and instructional outcomes was evaluated by Judkins et al. (2008). Outlined below are some of the relevant findings. The researchers found that the combined CLIO parent education and early childhood education curricula had statistically significant positive effects on child social competence, parent responsiveness to child, and parent interactive reading skill. Effect sizes were .22, .22, and .48 respectively. The CLIO combined curricula did not have statistically significant positive effects on any of the child language and early literacy outcomes nor on parents' vocabulary and reading skills in English. In addition to the evaluation of intervention effects, additional analyses were conducted in order to examine the relationship between parenting behaviors and child outcomes for all study participants,

regardless of curriculum group assignment. Results indicated that parent interactive reading skill was not statistically significantly related to any of the child emergent literacy skills. On the other hand, parent responsiveness was statistically significantly associated with all of the child outcome measures. Significant regression coefficients (and standard errors) for these child outcomes are as follows: social competence = 1.12 (.22), grammar = .58 (.11), print awareness = 1.31 (.18), phonological awareness – elision = .44 (.07), phonological awareness – blending = .77 (.11), receptive vocabulary = .95 (.14), expressive language – English = 1.07 (.16), and expressive language – Spanish = .73 (.17). Interestingly, teacher responsiveness was not significantly related to any child outcome measures.

Present Study

Participants. The target sample used to address the research questions within the present study was taken from the spring 2006 data set. Given the lack of robust findings from the CLIO study with regard to child variables of interest and the treatment curricula, the present study sample included cases across all study groups, regardless of intervention group status. This procedure is consistent with previous CLIO analyses with this dataset where intervention group assignment was disregarded in order to test other putative sources of variation in child outcomes. Participants were retained for the study if there was data available on the parent responsiveness measure and the mother's summarized race/ethnicity was identified as either White, Black, or Hispanic (N=1140).

Measures. The main variables for this study include a measure of parent responsiveness, a measure of child social competence, and a composite measure of child emergent literacy derived from six English language/literacy assessments.

Parent responsiveness. The parent responsiveness scale measures positive and sensitive parenting skills. It was designed to capture some of the complex processes involved in parent-child interactions that likely occur in the home. This scale was developed for the CLIO study using data collected during two staged parent-child interactions and from information gathered during parent interviews. During the first staged interaction, the parent and child were videotaped reading a book together (in English or Spanish). The second videotaped interaction involved the parent and child playing together with a toy that was chosen to encourage play-acting. The joint book reading activity was coded using three different scoring systems, including Reading Aloud Profile - Together (RAPT), the Contingency Scoring Sheet, and RAPT Quality Indicators. The Contingency Scoring Sheet was also used during the toy interaction activity. Parents with multiple children in the study were videotaped together but coding was conducted separately by child. Approximately 6% of the staged interactions in this sample involved more than one child. Coders were trained over the course of several days and a minimum of 85 percent reliability was required on practice tapes before beginning coding. In addition, coding supervisors performed random reliability checks and reviewed all data entered (Judkins et al., 2008).

The RAPT system (see Appendix A) is based on the Observation Measures of Language and Literacy Instruction - Read Aloud Profile (OMLIT-RAP), which was designed by CLIO study researchers to assess instructional practices within early educational settings that promote children's development of early literacy skills (Goodson, Layzer, Smith, & Rimdzius, 2004). The RAPT was adapted to measure instructional behaviors observed during parent-child joint book reading. Fifty-five parent and child behaviors included in the RAPT measure (e.g. parent tracks print with finger, parent directs child's attention, parent

expands on child's comments child verbally responds to questions, child points to pictures) are coded only if they are observed at least once the reading task (including pre- and post-reading activities). The Contingency Scoring instrument (see Appendices C and D) includes eight scales that provide global ratings of behaviors observed during the parent-child reading and play interactions that are scored using a 7-point Likert scale. The eight scales include: parental supportiveness (parent emotional availability, physical/affective presence), parental stimulation of cognitive development (parent effortful teaching, enhancing perceptual, cognitive, linguistic development of child), parental intrusiveness (parent control of child vs. respect of child's perspective), parental negative regard (parent discontent, anger, disapproval, rejection of child), parental detachment (parent lack of awareness, attention, engagement with child), child engagement of parent (child interaction and positive regard/affect toward parent), child sustained interest (child shows focus, excitement, interest, asks questions, relates personal experience), and child negativity toward parent (child displays frustration, anger, hostility toward parent). The RAPT Quality Indicators instrument (see Appendix B) provides global ratings, using a 5-point Likert scale, of the frequencies of both higher and lower quality literacy-based behaviors observed during the joint-book reading activity. Coders rate contextualized use of new vocabulary, use of open-ended questions, and depth of parent-child discussions from a scale of 1 (minimal) to 5 (extensive) (Judkins et al., 2008).

Using variable clustering and factor analysis procedures, information from the coded videotapes and parent interviews during baseline year was distilled into two parenting skill scales, one reflecting instructional support and the other emotional support. The latter, labeled as the parent responsiveness scale, is comprised of 41 items and is standardized to

have a mean of zero and standard deviation of one, due to variations in item weights. As Cronbach's alpha tends to underestimate the reliability of scales with unequal item weightings, the researchers utilized the alternative Gorsuch method, which resulted in an overall scale alpha of .55 and an alpha coefficient of .80 for the items with larger than average weights. Reliability information across ethnicity/race was not available for this scale. The items with the greatest loadings on the parent responsiveness scale during the joint reading task include parent supportiveness, child engagement of parent, child negativity toward parent, child verbally responds to questions from parent about book, and parent directs child's attention to illustration. The items with the greatest loadings during the interactive play task include parent supportiveness, parent cognitive stimulation, child engagement of parent, and child sustained interest (Judkins et al., 2008).

Child social competence. The social competence scale was developed for the CLIO study using information collected from preschool teacher ratings of cooperative and problem behaviors. The CLIO Teacher's Rating Form consists of items from scales adapted for use in the Head Start Family and Child Experiences Survey (FACES), including the FACES Cooperative Classroom Behavior Scale and the FACES Behavior Problems Scale. The FACES Cooperative Classroom Behavior Scale consists of 12 items, rated using a 3-point Likert scoring system, that assess children's behaviors such as following teacher's directions, following rules during play, helping to put things away, and complimenting classmates. For this scale, a Cronbach's alpha of .88 was reported on the FACES study and .89 was reported on the CLIO study, using spring 2004 baseline data (Judkins et al., 2008; U.S. Department of Health, 2003). The FACES Behavior Problems Scale consists of 14 items, also rated using a 3-point Likert scoring system, that assesses child negative behaviors such as aggression

(hits/fights with others, temper tantrums, disobedient, disruptive), hyperactivity (inattentive, restless, anxious), and withdrawal (worries, lacks self-confidence, low energy, immature, difficult to understand). For this scale, a Cronbach's alpha of .86 was reported on the FACES study and .84 was reported on the CLIO study using spring 2004 baseline data (Judkins et al., 2008; U.S. Department of Health, 2003). Reliability information across ethnicity/race was not available for either scale in both studies.

To create the CLIO Teacher's Rating Form, the items from both FACES scales were combined into a single social competence scale, based on the high correlation between the two scales ($r = 0.57$) and the need to minimize the number of final analyses for the CLIO study. This strategy resulted in increased specificity but decreased sensitivity of the final instrument. In addition, using four-parameter logistic item-response theory (IRT) modeling, two of the total 26 items were dropped due to low correlations with the combined scale (.16 and .24), resulting in a final 24 item social competence scale with a Cronbach's alpha of .92 (Judkins et al., 2008). Reliability information across ethnicity/race was not available for this scale.

Child emergent literacy. The child emergent literacy battery includes individually administered English-language assessments designed to measure expressive language, receptive vocabulary, phonological awareness, print knowledge, syntax, and grammar. Children from Spanish-speaking families were also administered a Spanish version of the expressive language test, however, consistent with CLIO procedures in previous analyses, only scores on the English version of this test were included in the emergent literacy composite. The children were directly assessed by trained field staff. Note that the CLIO study used two different scoring procedures for their analyses of child outcomes, namely

simple scoring and rescaled complex scoring. Simple scores, based on the number of correct responses, were used for nonexperimental analyses and will therefore be utilized in the present study analyses.

Expressive Language was assessed using the English version of the Individual Growth and Development Indicator (IGDI) Picture Naming subtest (Early Childhood Research Institute, 2003). For this assessment, children are presented with a series of picture cards showing common objects and are asked to name them. Scores are calculated based on the number of items named correctly in one minute. The test publisher reported test-retest reliability of .67 and correlation with the Preschool Language Scales - 3 for ages three to five years ranges from .63 to .79. Reliability information across ethnicity/race was not provided for this scale.

Receptive Vocabulary was measured using an adapted version of the Peabody Picture Vocabulary Test - 3rd edition (PPVT-III) (Dunn & Dunn, 1997). The PPVT-III requires children to demonstrate their vocabulary knowledge by pointing to pictures that represent stimulus words provided orally by the examiner. Westat adapted the PPVT-III item administration for the CLIO study. This adapted version includes fewer items and consists of three sets of item blocks. The first set, containing 14 words, was administered to all children. An additional ceiling set (with 10 more difficult items) was administered to preschoolers who made fewer than three errors on the first set. A basal set (with eight easier items) was administered to preschoolers who made more than seven errors on the first set. The internal consistency of this adapted version of the PPVT-III ranged from .82 to .87 for 3- to 5-year olds. Concurrent validity with the Academic Knowledge subtest of the Woodcock-Johnson

III was reported as .58 for kindergarten-age students (Judkins et al., 2008). Reliability information across ethnicity/race was not available for this scale.

Subtests of the Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPP) (Lonigan, Wagner, Torgesen & Rashotte, 2002) were used to assess children's phonological awareness and print knowledge. *Phonological Awareness: Elision* consists of 18 items that assess the child's ability to recognize parts of words, including phonemes, syllables, and compound word components. All of the first nine items are administered and require the child to point to pictures of what is left when a word part is taken away (e.g., "toothbrush without brush"), while the last nine items require the child to provide a verbal response and have a ceiling of three consecutive errors. The publisher-reported internal consistency for this subtest ranged from .78 to .87 for 3- to 5-year olds. *Phonological Awareness: Blending* consists of 21 items that assess the child's ability to combine parts of words, including phonemes, syllables, and compound word components. All of the first nine items are administered and require the preschoolers to blend two word parts given orally by the examiner and point to the corresponding picture (e.g., "horse and shoe together is horseshoe"). The last 12 items have a ceiling rule of three consecutive errors and do not include visual support. The publisher-reported internal consistency ranged from .86 to .89 for 3- to 5-year olds. *Print Knowledge* requires children to identify letters by name and sound, verbalize letter sounds, and identify alphabet symbols used to represent words and letters. All items are administered. Internal consistency, as reported by the test publisher, ranged from .89 to .95 for 3- to 4-year olds. Reliability information across ethnicity/race was not available for these subtests.

The Test of Language Development - Primary: Third Edition (TOLD-3) was used to measure children's *Syntax and Grammar* which are key components to sentence comprehension skills (Newcomer & Hammill, 1997). Children were orally presented with a sentence and then asked to point to the corresponding picture. This subtest contains 24 items and has a ceiling of six consecutive errors. The test publisher reported internal consistency ranges from .82 to .86 for 4- to 5-year olds. Concurrent validity with the Bankson Language Test, 2nd edition ranged from .64 to .79 for children in grades one through three. Reliability information across ethnicity/race was not available for this scale.

Data Analysis

Preliminary Analyses

Preliminary analyses were conducted using SPSS Version 20 and SAS 9.2 statistical software packages. The race variable used in the original CLIO analyses was recoded to reflect the cultural group membership categories needed to address the research questions in the current study. Mothers made up the majority of participant respondents (> 90%); therefore, mother's summarized race/ethnicity was used to designate parent race/ethnicity. The White and Black categories were retained with no changes. The Hispanic race/ethnicity category was divided based on information provided during the parent interview about home language. Hispanic parents who indicated that home language was English were recoded as English-Speaking Hispanic and Hispanic parents who indicated that home language was not English were recoded as Spanish-Speaking Hispanic. In addition, a composite emergent literacy outcome measure was created using the simple raw scores from the six child language/literacy assessments. The raw scores on each assessment were first standardized

(mean = 0; standard deviation = 1) and then summed to create this emergent literacy composite.

The data were first screened to identify cases with any missing values or coding errors. Descriptive information on all study variables, including covariates, was then examined to assess their distributions. This analysis was done for the whole sample and for each of the four cultural groups. Frequency data were examined for categorical variables and the chi-square test was used to determine potential differences based on cultural group membership. Measures of central tendency and variability were examined for continuous data and the *F* test was used to determine potential differences based on cultural group membership. Bivariate correlations between all of the study variables were then computed for the whole sample and for each of the four cultural groups. This study retained the relevant family and child level covariates listed in Table 1 that were used in the original CLIO study.

Table 1

Family and Child Level Covariates

Family Level	Child Level
Maternal age in years	Child has special needs
Mother has a college degree	Child is male
Household monthly income above \$1,500	Child age in months
Number of children in household under 8	Number of times child moved in last year
Number of adults in household over 18	

Path Analysis

The goal of this study is to examine hypothesized relations among the variables of interest. Specifically, (a) whether child social competence mediates the relationship between parent responsiveness and child emergent literacy; and (b) whether cultural differences moderate this pathway. Multiple group path analysis was used to evaluate these hypotheses, as it offers several unique advantages compared to other multivariate data analyses techniques. Path analysis requires formal specification of the model, which provides a method of testing *a priori* hypotheses about causation in which presumed causes can be isolated from extraneous variables as well as measurement error. Path analysis also allows simultaneous testing of multiple linear models, modeling of mediating variables, and visual representations of theorized models (Hoyle, 1995). All model analyses for the present study were conducted using Mplus Version 7 statistical software.

The first research question was addressed by examining the validity of the conceptual model for the whole sample, using regression coefficients for direct and indirect effects. Two competing models of full and partial mediation were tested to determine the potential mediating role of child social competence in the effects of parent responsiveness on child emergent literacy for the whole sample (Baron & Kenny, 1986; Bollen, 1989). The second research question was addressed using multiple group path analysis statistics for conditional indirect effects (i.e., moderated mediation). Multiple group path analysis was used to determine whether the model pathways differed across the four cultural groups by comparing a series of nested models for best fit. This intergroup analysis tests the metric invariance of the proposed mediated model across cultural groups. Beginning with the full model, which assumes equality across groups and therefore constrains all paths and covariances, each

subsequent nested model included fewer restrictions and was compared to the previous model to determine if a better fit was obtained (Iruka et al., 2012). The evaluation of model fit was conducted using chi-square, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Residual (SRMR) estimates. Adequate fit was determined using the following guidelines: non-significant chi-square, $RMSEA \leq .06$ CFI and $TLI \geq .90$, and $SRMR \leq .08$ (Hu & Bentler, 1999).

CHAPTER IV:

RESULTS

The Institute of Education Sciences (IES) instituted several rules and regulations with regard to the CLIO data file in order to ensure the confidentiality of the study participants. Access to the secure data file requires a restricted-use data license and any licensee intending to report analysis findings is required to round the following to the nearest ten: sample size numbers, frequency counts, minimum and maximum values, degrees of freedom, and mean squares. The results reported within this document adhere to these stipulations. Preliminary analysis results include a review of the data screening process, descriptive and group comparison statistics for the main variables and covariates, and bivariate correlations for the whole sample and for each cultural group. Path analysis results include examination of direct, indirect, and conditional indirect effects, as well as model fit indices. First, the proposed mediated model using the full sample will be evaluated, with parent responsiveness as the predictor variable, emergent literacy as the outcome variable, and social competence as the mediating variable (see Table 1). Then, multiple group path analysis results evaluate cultural group membership as a potential moderator within the model.

Preliminary Analysis

The CLIO spring 2006 data (N = 1360) were screened for missing items. Cases with missing parent responsiveness scores (predictor variable) were dropped from the analysis data set. Cultural group membership for each parent-child dyad was determined by mothers'

race/ethnicity (>90% of respondents) as well as home language for the Hispanic group. Cases that were not classified as White, Black, or Hispanic were dropped from the analysis (7%). Families with more than one child in the study were retained as the small amount of nesting was considered negligible for this sample. Approximately 0.4% of the cases were missing emergent literacy scores and 6% were missing social competence scores, however, these were retained for the model analysis because Mplus can handle the missing data and produce parameter and standard error estimates with limited bias. Three cases had invalid English IGDI Picture Naming scores. These scores were recoded at the reported maximum value for this test with the current study sample and retained in the analysis data set because they had data available on all other study variables.

The final data analysis set consisted of 1140 parent-child dyads. T-test and chi-square comparisons statistics indicated that the full and final samples did not significantly differ from each other on any of the demographic covariates or study variables used in this analysis. The final data set consisted of the following four cultural groups: White (25%), Black (11%), English-speaking Hispanic (15%), and Spanish-speaking Hispanic (49%). Correlations between the six assessments that comprised the emergent literacy composite ranged from .512 to .772 for this study sample.

Descriptive and group comparison statistics for each study variable and covariate is listed in Table 2. Bivariate correlations for the whole sample are provided in Table 3. Bivariate correlations by cultural group membership are provided in Table 4 (White and Black) and Table 5 (English- and Spanish-speaking Hispanics). There were no group differences in children's gender (50% male), age (overall M = 53.11 months), or the number of household members younger than eight years (overall M = 2). Chi-square analyses

indicated group differences in maternal education, monthly household income, and child special needs status. Black mothers were least likely to have earned a college degree; White and English-speaking Hispanic children were more likely to live in households with monthly incomes above \$1,500; and White children were most likely to be identified as having special needs while English-speaking Hispanic children were least likely.

Multivariate analyses using Tukey-Kramer adjustments indicated several group differences. English- and Spanish-speaking Hispanic children tended to have older mothers, to live in households with a greater number of adults, to have moved less frequently in the previous year, and to be rated higher by their teachers on the social competence measure. Spanish-speaking Hispanic children, in particular, scored highest on the social competence measure but tended to have the lowest emergent literacy scores. White children tended to have the highest scores on the measure of parent responsiveness and emergent literacy but also had the lowest scores on the social competence measure.

Table 2

Descriptive and Group Comparison Statistics for Study Variables

	Overall (<i>n</i> = 1140)	White (<i>n</i> = 290)	Black (<i>n</i> = 120)	ES Hispanic (<i>n</i> = 170)	SS Hispanic (<i>n</i> = 560)	
Variables (range)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	F/ χ^2
Maternal age (20-50 years)	30.63 (6.00)	29.46 (5.85)	27.97 (6.72)	31.43 (5.84)	31.59 (5.68)	18.26
Maternal education (1 = college degree)	0.09 (0.29)	0.13 (0.34)	0.05 (0.22)	0.08 (0.28)	0.09 (0.28)	9.52
Household income (1 = above \$1500/month)	0.42 (0.49)	0.47 (0.50)	0.38 (0.49)	0.51 (0.50)	0.37 (0.48)	13.21
No. of children under 8 yrs (0-10)	2.01 (0.90)	2.08 (0.99)	2.06 (0.99)	1.90 (0.87)	2.00 (0.84)	1.50
No. of adults in household (0-10)	2.16 (0.87)	1.92 (0.71)	1.79 (0.77)	2.27 (0.86)	2.34 (0.91)	24.44
Child has special needs (1 = yes)	0.11 (0.32)	0.17 (0.38)	0.11 (0.32)	0.04 (0.20)	0.10 (0.31)	19.39
Child gender (1 = male)	0.50 (0.50)	0.53 (0.50)	0.50 (0.50)	0.45 (0.50)	0.50 (0.50)	2.35
Child age (40-80 months)	53.11 (7.89)	52.64 (8.04)	51.98 (7.66)	53.25 (8.33)	53.56 (7.72)	1.81
No. of times child moved in last year (0-10)	0.41 (0.86)	0.51 (0.93)	0.66 (1.31)	0.27 (0.71)	0.34 (0.70)	7.56
Parent responsiveness (z score \pm 1)	-0.36 (0.88)	-0.06 (0.80)	-0.50 (1.02)	-0.34 (0.96)	-0.48 (0.82)	16.35
Child social competence (10-50)	37.95 (8.28)	35.82 (8.57)	36.74 (9.34)	38.75 (8.28)	39.12 (7.60)	11.18
Child emergent literacy composite (-10-10)	0.00 (4.76)	2.46 (4.38)	0.71 (4.72)	0.58 (4.46)	-1.59 (4.44)	54.64

Note. ES = English-speaking, SS = Spanish-speaking. Sample sizes and ranges are rounded to nearest 10. F and chi-square values listed in bold type are significant at $p < .05$.

Table 3

Correlation Matrix for All Study Variables – Overall Sample

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Maternal age	—	.20	.12	-.14	.04	-.02	-.10	.07	-.15	-.05	.09	.07
2. Maternal education		—	.13	-.04	-.02	-.02	-.00	-.05	-.04	.14	.05	.11
3. Household income			—	.00	.15	-.02	-.01	.02	-.10	.16	.07	.21
4. No. of children under 8 yrs				—	.10	.07	.04	-.04	.04	-.06	-.04	-.06
5. No. of adults in household					—	-.03	.05	.07	-.07	.00	.11	-.06
6. Child has special needs						—	.09	.03	.01	-.02	-.17	-.06
7. Child gender							—	-.02	.00	-.07	-.24	-.07
8. Child age								—	-.04	.06	.26	.51
9. No. of times child moved									—	-.01	-.09	-.06
10. Parent responsiveness										—	.13	.29
11. Child social competence											—	.31
12. Child emergent literacy composite												—

Note. $N=1140$. $p < .05$ listed in bold type.

Table 4

Correlation Matrix for All Study Variables – White and Black Families

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Maternal age	—	.37	.08	-.18	-.06	.06	-.01	.21	-.17	-.01	.00	.13
2. Maternal education	.09	—	.24	-.02	-.04	-.02	.05	.02	-.13	.13	.14	.08
3. Household income	.11	.13	—	.07	.26	-.01	.06	.05	-.23	.17	.11	.19
4. No. of children under 8 yrs	-.11	.02	-.07	—	.07	.07	.01	-.03	.01	-.01	-.01	-.03
5. No. of adults in household	.03	.11	.28	-.06	—	.01	.11	.05	-.15	.15	.14	.07
6. Child has special needs	.12	-.08	-.07	.08	-.10	—	.14	.06	-.09	-.09	-.13	-.07
7. Child gender	-.07	.08	.05	-.02	.10	-.05	—	-.01	-.02	-.09	-.24	-.08
8. Child age	.02	-.13	.07	-.01	.03	.07	.50	—	-.09	.00	.26	.60
9. No. of times child moved	-.13	-.03	.01	.07	-.09	.11	-.01	.14	—	-.13	-.17	-.11
10. Parent responsiveness	.02	.03	.08	.01	-.13	-.12	-.09	.20	.14	—	.17	.29
11. Child social competence	.09	-.07	.13	-.10	.21	-.23	-.22	.24	-.03	.11	—	.46
12. Child emergent literacy composite	.03	.06	.26	-.10	.09	-.20	-.09	.63	-.04	.33	.40	—

Note. $p < .05$ listed in bold type. Correlations for White families ($N=290$) are presented above the diagonal and correlations for Black families ($N=120$) are presented below the diagonal.

Table 5

Correlation Matrix for All Study Variables – English- and Spanish-speaking Hispanic Families

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Maternal age	—	.19	.25	-.08	.21	-.09	-.19	-.08	-.23	-.04	.05	.13
2. Maternal education	.14	—	.04	-.02	-.02	-.06	-.06	-.15	-.12	.00	.04	.16
3. Household income	.12	.08	—	-.10	.18	-.09	.00	-.10	-.12	.18	.07	.12
4. No. of children under 8 yrs	-.12	-.08	.01	—	-.03	.06	.07	-.04	.11	-.13	-.07	-.11
5. No. of adults in household	-.07	-.01	.09	.21	—	.01	.11	.06	.15	.04	.01	.05
6. Child has special needs	-.06	-.02	-.01	.04	.00	—	.23	.06	.00	.04	-.04	-.15
7. Child gender	-.13	-.04	-.07	.04	.01	.06	—	-.07	.03	-.08	-.24	-.09
8. Child age	.02	-.05	.04	-.04	.05	.01	-.03	—	-.04	.16	.35	.52
9. No. of times child moved	-.07	.05	-.07	.01	-.02	.01	.00	-.05	—	-.04	-.02	-.11
10. Parent responsiveness	-.05	.17	.15	-.10	.02	.00	-.07	.03	-.04	—	.35	.29
11. Child social competence	.08	.04	.05	-.01	.04	-.18	-.24	.22	-.05	.11	—	.40
12. Child emergent literacy composite	.18	.10	.20	-.09	-.03	-.08	-.07	.55	-.12	.18	.37	—

Note. $p < .05$ listed in bold type. Correlations for English-speaking Hispanic families ($N=170$) are presented above the diagonal and correlations for Spanish-speaking Hispanic families ($N=560$) are presented below the diagonal.

Path Analysis

Through the use of path analysis procedures, the first research question tested the hypothesis about the mediating role of child social competence in the effect of parent responsiveness on child emergent literacy. Preliminary analysis showed that significant correlations were found among the predictor and outcome variables for the overall sample: parent responsiveness was significantly related to emergent literacy (.29, $p < .001$) and social competence (.13, $p < .001$); and social competence was significantly related to emergent literacy (.31, $p < .001$). Path analysis indicated significant direct and indirect effects for the variables within the specified model, supporting the mediated model hypothesis for the overall sample. The direct and indirect effect estimates are provided in Table 6. The model fit indices suggest that this model is a good fit for the overall data set: $\chi^2(10) = .260$, *ns*; RMSEA = .000; CFI = 1.000; TLI = 1.021; and SRMR = .001. The R-square estimates in this model indicated that the study variables explained 18% of the variance in the social competence scores and 40% of the variance in the emergent literacy scores for the overall sample.

Table 6

Standardized and Unstandardized Direct and Indirect Pathway Estimates for Study Variables and Covariates with Overall Sample

Direct Pathway	<i>B</i>	<i>B</i> (SE)	<i>p</i> value
Emergent Literacy			
Parent responsiveness	0.21	1.12 (0.15)	<.001
Social Competence	0.16	0.090 (0.01)	<.001
Maternal age	0.01	0.00 (0.02)	.831
Maternal education	0.08	1.25 (0.45)	0.006
Household income	0.16	1.50 (0.24)	<.001
No. of children under 8 yrs	-0.10	-0.06 (0.12)	0.657
No. of adults	-0.13	-0.74 (0.13)	<.001
Child has special needs	-0.04	-0.65 (0.38)	0.084
Child gender	0.01	0.06 (0.23)	0.806
Child age	0.47	0.28 (0.02)	<.001
No. of times child moved	-0.02	-.10 (0.13)	0.443
Social competence			
Parent responsiveness	0.10	0.90 (0.30)	.002
Maternal age	0.03	0.04 (0.04)	.341
Maternal education	0.04	0.98 (0.80)	.218
No. of children under 8 yrs	-0.01	-.06 (0.27)	.820
No. of adults	0.10	0.97 (0.27)	<.001
Child has special needs	-0.15	-3.89 (0.82)	<.001
Child gender	-0.22	-3.62 (0.45)	<.001
Child age	0.25	0.26 (0.03)	<.001
No. of times child moved	-0.07	-0.71 (0.34)	<.001
Indirect Pathway			
PR → SC → EL	0.02	0.08 (0.03)	0.004

Note. PR = Parent responsiveness, SC = Social competence, EL = Emergent literacy.

The second research question tested the hypothesis about the moderating effects (i.e., conditional indirect effects) of cultural group membership on the proposed mediated model. Examination of group comparison statistics during the preliminary analysis showed cross-cultural differences in several of the study variables as well as differences in the correlations between variables (e.g., correlation between parent responsiveness and child social competence was not significant for Black parent-child dyads). Therefore, a series of four nested models was tested in order to determine whether the proposed model examined above for the overall sample differed across cultural groups. The nested models were compared using model fit indices to determine whether a progressive change in the level of constraints placed on the model pathways would produce a better fit. Table 7 shows the results of the multiple group path analysis. Chi-square difference tests were computed at each step to compare the chi-square statistic for the current model to the proceeding model. They were all significant at the $< .001$ level signifying a significant improvement in model fit. The final model of unconstrained paths and covariances was deemed to be the best fit for the data.

Table 7

Fit Indices for Nested Sequence of Multiple Group Models

Model	χ^2 (df), p	RMSEA	CFI	TLI	SRMR
1. Constrained: all paths and covariances	168.223 (40), $<.001$	0.118	0.849	0.627	0.039
2. Unconstrained path: parent responsiveness \rightarrow emergent literacy	168.223 (40), $<.001$	0.118	0.849	0.627	0.039
3. Unconstrained path: social competence \rightarrow emergent literacy	117.470 (20), $<.001$	0.135	0.889	0.510	0.034
4. Unconstrained: all paths and covariances	0.429 (10), 0.9801	0.000	1.000	1.084	0.002

Note. Degrees of freedom are rounded up to the nearest 10. RMSEA = Root Mean Square Error of Approximation, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, SRMR = Standardized Root Mean Square.

Standardized and unstandardized direct pathway estimates for the study variables and covariates by cultural group are listed in Table 8. The only group that continued to support the proposed mediated model was the Spanish-speaking Hispanic group. The indirect effect standardized estimate ($B = .02$) was significant ($p = .043$) indicating that child social competence did mediate the link between parent responsiveness and child emergent literacy for this group. The indirect effect standardized estimates for the other groups were not significant: White ($B = .02$, $p = .174$), Black ($B = .01$, $p = .669$), English-speaking Hispanic ($B = .05$, $p = .075$). Additional model fit information is outlined below by cultural group.

White. For this group parent responsiveness did not predict child social competence (see Figure 2). Of the covariates included in the analysis, maternal education ($B = .16$), child gender ($B = -.24$), child age ($B = .27$), and number of times child moved in the past year ($B = -.17$) did predict child social competence. Both social competence ($B = .29$) and parent responsiveness ($B = .23$) predicted emergent literacy scores. In addition, child age ($B = 0.52$) and household income ($B = 0.11$) predicted emergent literacy scores. The R-square estimates indicated that the study variables explained 23% of the variance in the social competence scores and 52% of the variance in the emergent literacy scores for this group.

Black. Similar to the White group, parent responsiveness did not predict child social competence for the Black group (see Figure 3). Of the covariates included in the analysis, number of adults living in the household ($B = .21$), child special needs status ($B = -.23$), child gender ($B = -.28$), and child age ($B = .28$) did predict child social competence. Both social competence ($B = .18$) and parent responsiveness ($B = .15$) predicted emergent literacy scores. In addition, child age ($B = .58$), household income ($B = .17$), and child special needs status ($B = -.15$) predicted emergent literacy scores. The R-square estimates indicated that the study

variables explained 27% of the variance in the social competence scores and 59% of the variance in the emergent literacy scores for this group.

English-speaking Hispanic. Unlike the White and Black groups, parent responsiveness did predict social competence for the English-speaking Hispanic group ($B = .28$). As shown in Figure 4, of the covariates included in the analysis, child gender ($B = -.18$) and child age ($B = .29$) did predict social competence. Both social competence ($B = .17$) and parent responsiveness ($B = .17$) predicted emergent literacy scores. In addition, maternal education ($B = .20$), child special needs status ($B = -.17$), and child age ($B = .29$) predicted emergent literacy scores. The R-square estimates indicated that the study variables explained 24% of the variance in the social competence scores and 46% of the variance in the emergent literacy scores for this group.

Spanish-speaking Hispanic. Similar to their English-speaking counterparts, parent responsiveness did predict social competence for the Spanish-speaking Hispanic group ($B = .09$). As shown in Figure 5, of the covariates included in the analysis, child age ($B = .22$), child gender ($B = -.22$), and child special needs status ($B = -.16$) also predicted social competence. Both social competence ($B = .23$) and parent responsiveness ($B = .12$) predicted emergent literacy scores. In addition, maternal age ($B = .13$), maternal education ($B = .07$), household income ($B = .13$), number of adults living in the household ($B = -.07$), child age ($B = -.49$), and number of times child has moved in the past year ($B = -.07$) predicted emergent literacy scores. The R-square estimates indicated that the study variables explained 15% of the variance in the social competence scores and 45% of the variance in the emergent literacy scores for this group.

Table 8

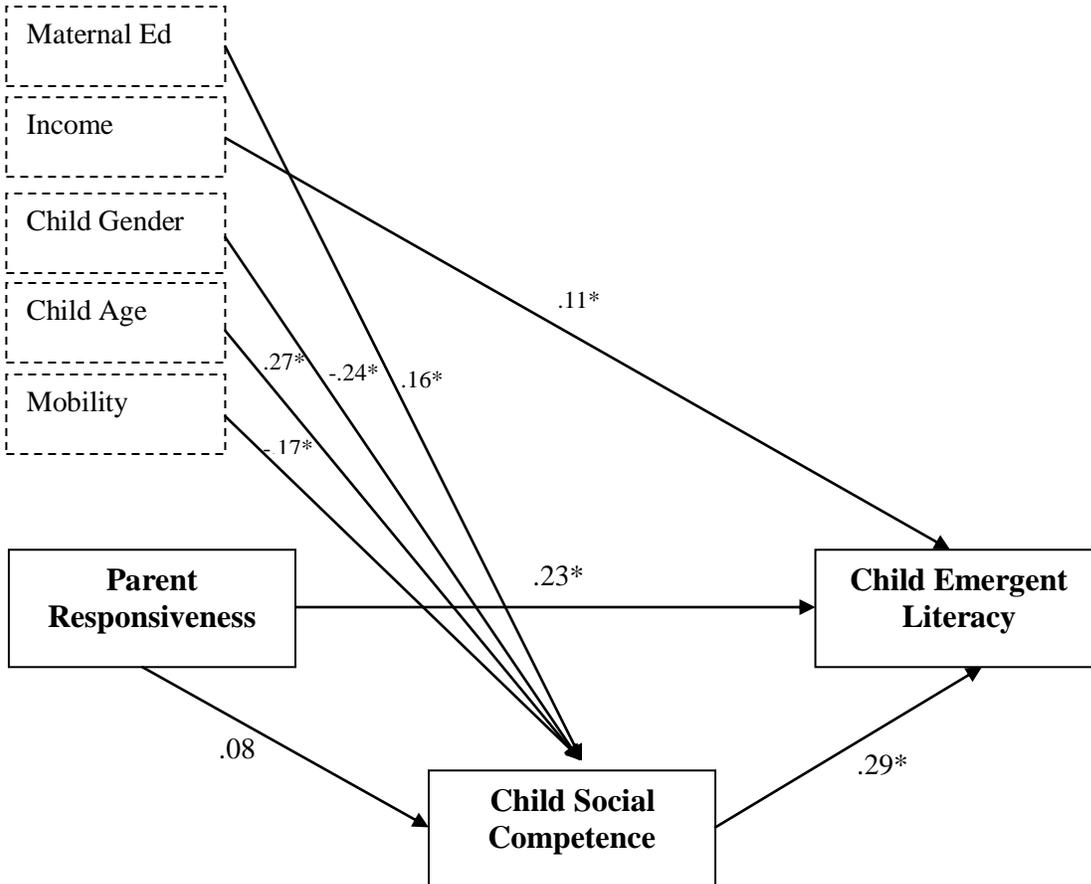
Standardized and Unstandardized Direct Pathway Estimates for Study Variables and Covariates by Cultural Group

Direct Pathway	White		Black		English-Speaking Hispanic		Spanish-speaking Hispanic	
	<i>B</i>	<i>B</i> (SE)	<i>B</i>	<i>B</i> (SE)	<i>B</i>	<i>B</i> (SE)	<i>B</i>	<i>B</i> (SE)
Emergent Literacy								
Parent responsiveness	0.23	1.27 (0.24)	0.15	0.70 (0.30)	0.17	0.78 (0.33)	0.12	0.63 (0.21)
Social Competence	0.29	0.15 (0.03)	0.18	0.09 (0.03)	0.17	0.09 (0.04)	0.23	0.14 (0.02)
Maternal age	0.03	0.02 (0.04)	-0.04	-0.03 (0.05)	0.12	0.09 (0.05)	0.13	0.10 (0.03)
Maternal education	-0.03	-0.37 (0.79)	0.08	1.85 (2.63)	0.20	3.24 (0.92)	0.07	1.17 (0.59)
Household income	0.11	1.00 (0.38)	0.17	1.62 (0.67)	0.06	0.57 (0.56)	0.13	1.20 (0.30)
No. of children under 8 yrs	-0.01	-0.04 (0.19)	-0.08	-0.38 (0.37)	-0.03	-0.15 (0.29)	-0.02	-0.13 (0.17)
No. of adults	-0.06	-0.37 (0.25)	-0.03	-0.15 (0.42)	-0.03	-0.14 (0.34)	-0.07	-0.34 (0.15)
Child has special needs	-0.04	-0.41 (0.47)	-0.15	-2.23 (0.90)	-0.17	-3.67 (0.82)	-0.03	-0.46 (0.44)
Child gender	0.03	0.24 (0.37)	-0.10	-0.89 (0.67)	0.06	0.56 (0.56)	0.04	0.33 (0.30)
Child age	0.51	0.28 (0.03)	0.58	0.36 (0.04)	0.50	0.27 (0.04)	0.49	0.28 (0.02)
No. of times child moved	0.04	0.17 (0.24)	-0.12	-0.43 (0.26)	-0.01	-0.07 (0.46)	-0.07	0.14 (0.02)
Social competence								
Parent responsiveness	0.08	0.89 (0.65)	0.05	0.47 (1.00)	0.28	2.42 (0.54)	0.09	0.87 (0.41)
Maternal age	-0.12	-0.17 (0.10)	0.09	0.13 (0.13)	0.05	0.07 (0.13)	0.04	0.05 (0.05)
Maternal education	0.16	3.91 (1.41)	-0.07	-2.85 (4.57)	0.06	1.90 (1.99)	0.01	0.34 (1.12)
No. of children under 8 yrs	-0.01	-0.08 (0.53)	-0.07	-0.62 (0.80)	-0.01	-0.05 (0.73)	0.03	0.23 (0.39)
No. of adults	0.11	1.33 (0.76)	0.21	2.58 (1.11)	-0.01	-0.13 (0.65)	0.03	0.22 (0.33)
Child has special needs	-0.11	-2.56 (1.44)	-0.23	-6.93 (2.72)	-0.02	-0.72 (3.04)	-0.16	-4.05 (1.13)
Child gender	-0.24	-4.15 (0.95)	-0.28	-5.171 (1.59)	-0.18	-2.92 (1.29)	-0.22	-3.29 (0.62)
Child age	0.27	0.29 (0.06)	0.28	0.35 (0.12)	0.29	0.29 (0.07)	0.22	0.22 (0.04)
No. of times child moved	-0.17	-1.54 (0.50)	-0.03	-0.21 (0.73)	0.02	0.27 (1.10)	-0.03	-0.32 (0.49)

Note. $p < .05$ listed in bold type.

Figure 2

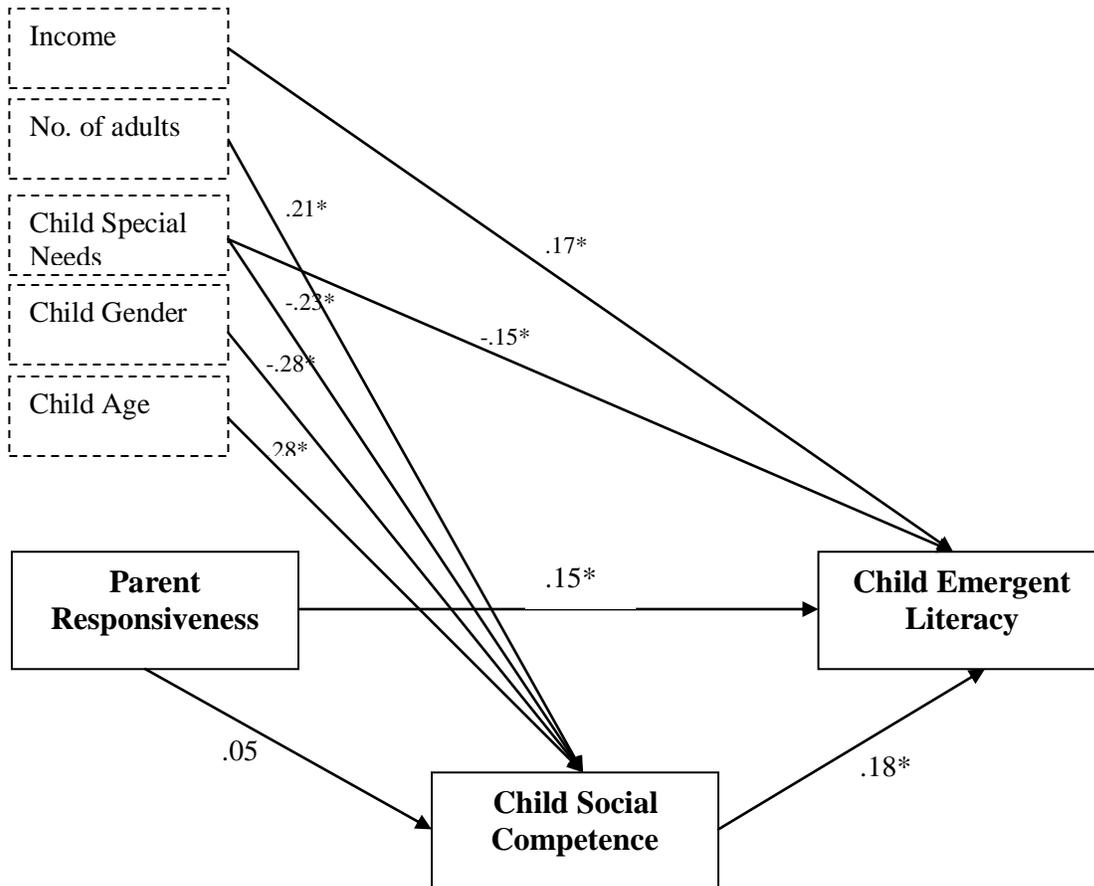
Final Model for White Families



Note. * $p < .05$. Standardized estimates for significant covariates are also presented. Model fit statistics: $\chi^2(10) = .429$, *ns*; RMSEA = .000; CFI = 1.000; TLI = 1.084; and SRMR = .002

Figure 3

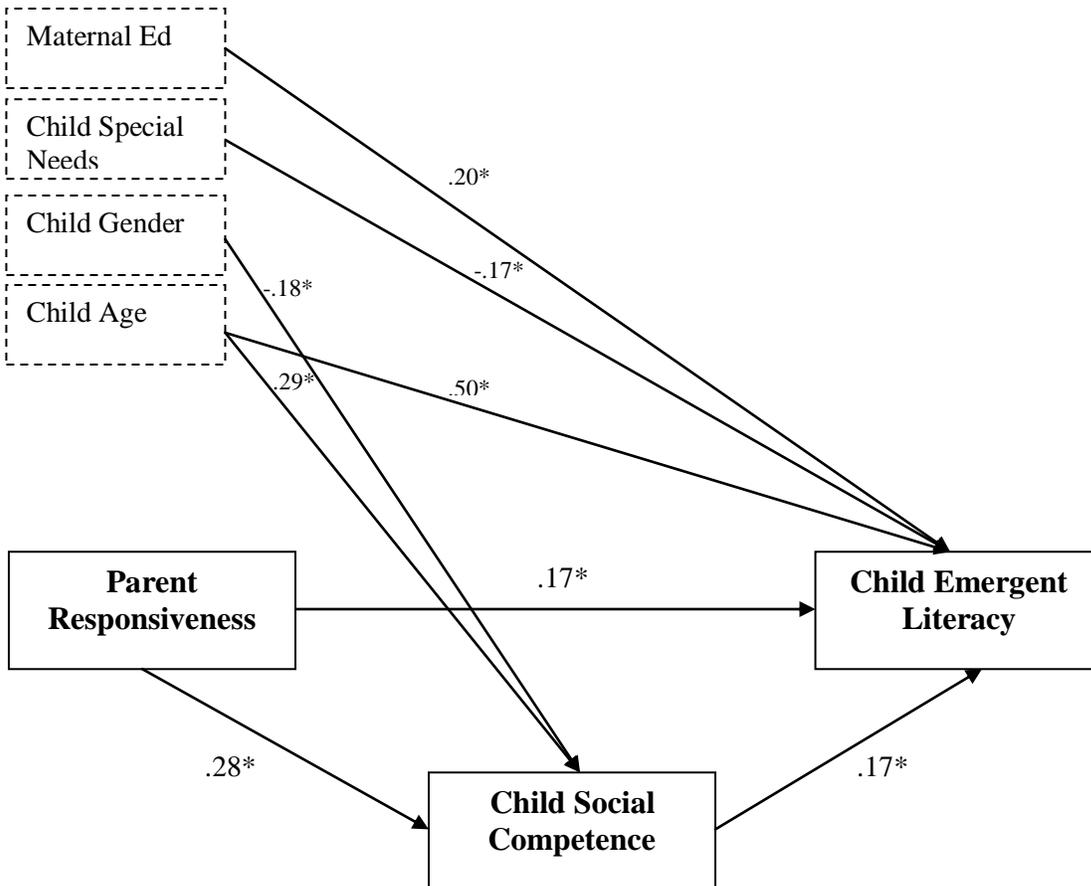
Final Model for Black Families



Note. * $p < .05$. Standardized estimates for significant covariates are also presented. Model fit statistics: $\chi^2(10) = .429, ns$; RMSEA = .000; CFI = 1.000; TLI = 1.084; and SRMR = .002

Figure 4

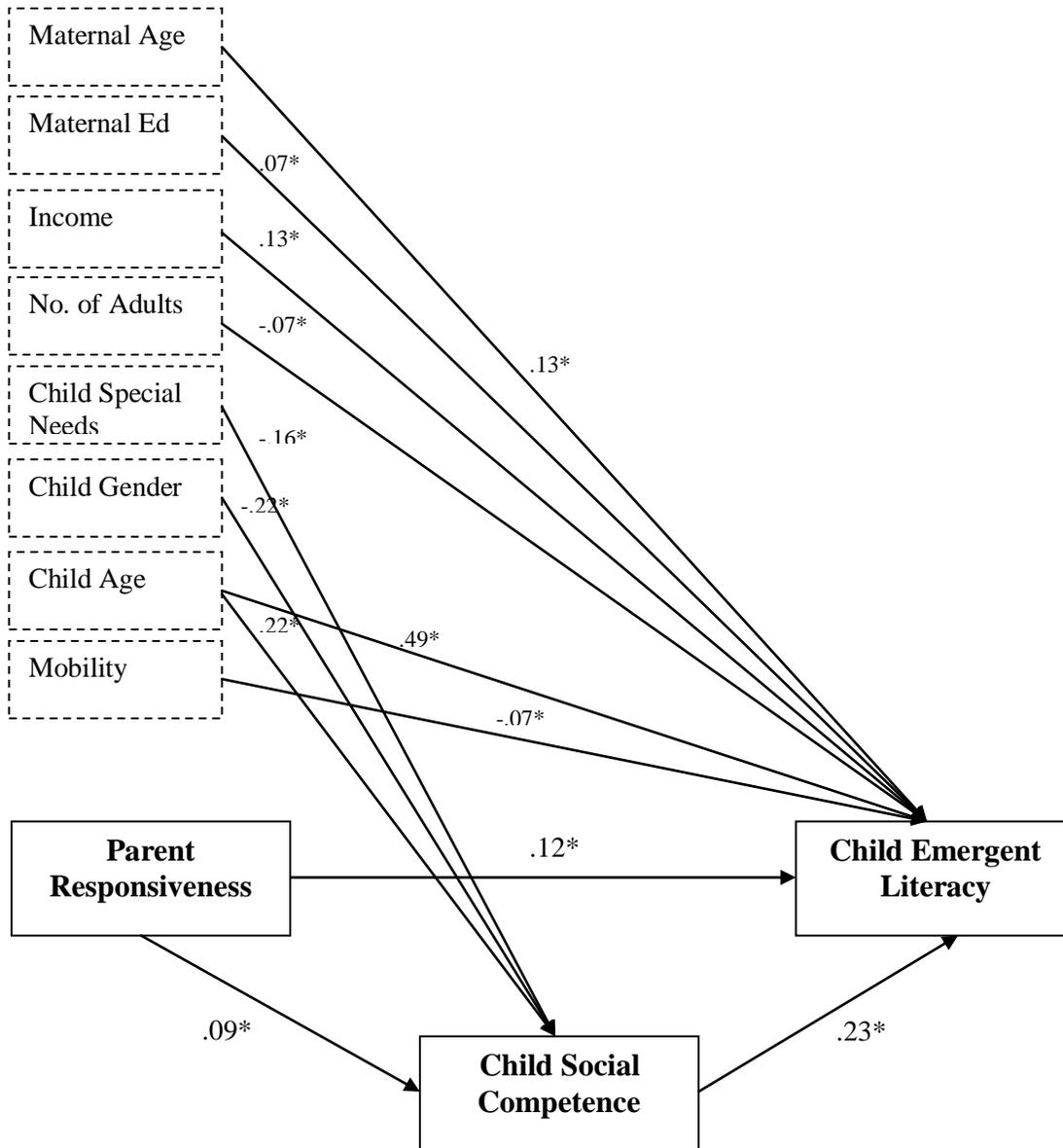
Final Model for English-Speaking Hispanic Families



Note. * $p < .05$. Standardized estimates for significant covariates are also presented. Model fit statistics: $\chi^2(10) = .429$, *ns*; RMSEA = .000; CFI = 1.000; TLI = 1.084; and SRMR = .002

Figure 5

Final Model for Spanish-Speaking Hispanic Families



Note. * $p < .05$. Standardized estimates for significant covariates are also presented. Model fit statistics: $\chi^2(10) = .429, ns$; RMSEA = .000; CFI = 1.000; TLI = 1.084; and SRMR = .002

CHAPTER V:

DISCUSSION

The present study examined the cross-cultural validity of a proposed mediated model of responsive parenting behavior, child social competence, and child emergent literacy. Drawing from a sample of pre-school children and their families enrolled in Even Start Family Literacy programs nationwide, the first study hypothesis stated that child social competence would partially mediate the relationship between parent responsiveness and child emergent literacy. The second study hypothesis stated that cultural group membership would have a moderating effect on the model being tested, such that the strength of the pathway would vary across cultural groups. Statistical analyses provided support for the validity of the proposed mediated model exclusively for Spanish-speaking Hispanic families, with mixed findings on the significance of the pathways between the study variables for White, Black, and English-speaking Hispanic families. The following sections will include an interpretation of the study findings in relation to existing research, a review of the study's limitations, and a discussion of the study's implications and directions for future research.

Study Findings

The rationale for family intervention programs, such as the Even Start Family Literacy Program, comes from theories and research supporting the role of certain parenting behaviors on the development of children's skills that are thought to be crucial to later school success. The CLIO study, which was designed to evaluate the effectiveness of adding research-based child and parenting curricula to Even Start Programs, found statistically

significant relationships between parent responsiveness and child social competence as well as parent responsiveness and child emergent literacy (Judkins et al., 2008). Given the diverse composition of the CLIO study sample in terms of ethnicity and home language, the current study attempted to further investigate these linkages by exploring hypothesized causal pathways among these parent and child variables, as well as examining potential between and within group differences in these pathways.

Path analysis using the overall sample and assuming structural invariance across all cultural groups provided support for the proposed mediated model: Child social competence partially mediated the influence of parent responsiveness on child emergent literacy skills. This finding is consistent with previous models (Downer & Pianta, 2006; Steelman et al., 2002) that have shown linkages in quality of early parental care with later language/literacy achievement, partially through social competence. An examination of group comparison statistics, however, suggested possible model invariance and subsequent nested model fit analyses confirmed that the proposed model did vary across cultural groups. The following sections further describe these cross-cultural similarities and differences in the pathways that comprise the proposed model.

Parent responsiveness and child emergent literacy pathway. There was consistent support for the predictive role of parent responsiveness on child emergent literacy skills across all cultural groups within the present study. Several theorists have proposed that the quality of the parent-child relationship influences the quality of the verbal exchanges that regularly occur between parent and child, and that these exchanges represent the key medium through which young children acquire and develop language and literacy skills (Pianta, 2004; van IJendoorn et al., 1995, Vygotsky, 1978). The current study findings add to the growing

body of research that support the significant influence of warm, sensitive, and attentive parenting to the development of children's early literacy skills and, more importantly, the salience of this pathway across cultural groups (Belsky et al., 2007; Cabrera et al., 2006; Gregory & Rimm-Kaufman, 2008; Hill, 2001; Hirsh-Pasek & Burchinal, 2006; NICHD ECCRN 2002; Pungello et al., 2009; Roberts et al., 2005). This study finding also gives credence to parent education programs within the United States that focus on promoting parent responsiveness skills with diverse cultural groups as a means of positively impacting children's academic performance, for example Even Start, Chicago Child-Parent Centers Program (CPC), Parent-Child Home Program (PCHP), and Parents as Teachers Program (PAT).

Child social competence and emergent literacy pathway. There was consistent support for the predictive role of child social competence on emergent literacy skills across cultural groups within the present study as well. This finding is also consistent with previous studies that have found similar predictive relationships between children's social-emotional skills and the development of their language and literacy skills (Beckwith & Rodning, 1996; Burchinal et al., 2002; Downer & Pianta, 2006; Hindman et al., 2010; Steelman et al., 2002). These studies support the hypothesis that a child's social-emotional disposition may influence his/her ability and motivation to engage in the exchanges that build language and literacy skills (Pianta, 2004; van IJendoorn et al., 1995, Vygotsky, 1978). The study findings are encouraging for early education and intervention programs like Even Start, Head Start, Ready Schools, and Smart Start that typically serve diverse student populations and have incorporated social-emotional development as a key program component necessary for school success.

Parent responsiveness and child social competence pathway. There was inconsistent support for the predictive role of parent responsiveness on child social competence across cultural groups within the current study. Previous studies have also shown mixed findings when examining parenting behaviors and their impact on child social-emotional development. Several studies have found parent responsiveness to be a significant predictor of child social skills with primarily homogenous (Beckwith and Rodning, 1996; Steelman et al., 2002) as well as more diverse samples (Brody & Flor, 1998; Landry et al., 2001; Parker et al., 1999). Other studies have found significant cross-cultural differences in this causal relationship (Bradley et al., 2001; Raver et al., 2007; Whiteside-Mansell et al., 2009).

The current study only found support for the predictive relationship between parent responsiveness and child social competence with the Hispanic families, not with the Black or White families. Further, parent responsiveness was not statistically significantly related to child social competence with the Black families in this study. These findings are in stark contrast to the study by Whiteside-Mansell et al. (2009) which found that parent responsiveness predicted teacher-rated prosocial skills for Black and White children but not for Hispanic children. They also found that higher responsiveness was more protective against internalizing problems for Black children. Interestingly, they did find White children were rated lowest on prosocial skills by their teachers, which is consistent with findings from the present study. Raver et al. (2007) found support for positive parenting as a predictor for children's social competence for their White, Black, and Hispanic families but the strength of these pathways was significantly different. Bradley et al. (2001) found that parent responsiveness was significantly related to early social competence for all groups and

reduced behavior problems for older Black children. They also found a (non-statistically significant) trend for Hispanic children indicating that higher parent responsiveness was linked to increased behavior problems. These inconsistent findings reflect the need for additional investigations of this specific relationship. Theorists have distinguished parent responsiveness as a significant contributor to the development of children's competence across multiple domains (Bell & Ainsworth, 1972; Matas et al., 1978; Pianta, 2004; van IJendoorn et al., 1995; Vygotsky, 1978). Indeed the findings within the current study support the salience of this parent construct for emergent literacy skill development yet provide limited evidence of its impact on social competence for all cultural groups.

The differences found within the present study and among previous studies suggest that there may be aspects of parenting that are unique to certain cultures, that parent responsiveness may be expressed (and thus rated by observers) differently among diverse cultural groups, and that there may be unobserved contributors to the parent-child relationship that have a more salient impact on social competence for some cultural groups (Raver et al., 2007). Given the emphasis that Hispanic families tend to place on values like *familismo y respeto* (Halgunseth et al., 2006), it is likely that the quality and focus of parent-child interactions may provide more support for the growth of related social skills, which then transfer into their children's interactions with other children and adults (e.g. teachers). Generally, Hispanic children within the current study were rated highest on the measure of social competence by their teachers. English-speaking Hispanic children received ratings that were comparable to their Spanish-speaking Hispanic and Black peers, however, Spanish-speaking Hispanic children received ratings that were significantly higher than their Black and White peers.

The divergent findings within the research base may also be due to several study design differences including the measures of parent responsiveness and social competence utilized in the studies, and the representativeness of the samples analyzed. For example, the present study consisted of a much larger sample of Hispanic American children than the Whiteside-Mansell et al. (2009) study, which only included Spanish-speaking Hispanic families in their Hispanic sample. The sample size and composition of the present study allowed for the ability to potentially parse out some intra-group variations within the Hispanic sample based on home language, used here as a proxy for acculturation level. In addition, their measure of teacher-rated social competence included separate scales for social skills, internalizing problems, and externalizing problems, whereas a single social competence composite was measured using teacher ratings of the child's cooperative and problem behavior in the classroom within the present study. The Raver et al. (2007) study sample consisted of kindergarten students with a mean age of 75 months, which is much higher than the mean age of children within the current study (53 months). In addition, their positive parenting construct, which included indicators such as warmth, cognitive stimulation, physical punishment, and rules and routines, failed to demonstrate cross-cultural equivalence. Parent responsiveness was defined in the current study as "reciprocal warmth and affection" and included observer-rated items such as parent supportiveness, parent cognitive stimulation, parent directs child's attention to illustration, child engagement of parent, child negativity toward parent, child verbally responds to questions from parent about book, and child sustained interest (Judkins et al., 2008).

Child social competence as mediator. Given the mixed findings on the predictive influence of parent responsiveness on child social competence across cultural groups, it is not

surprising that there would be limited support for social competence as a mediator within the model. In the present study, social competence emerged as a partial mediator between parent responsiveness and child emergent literacy for the Spanish-speaking Hispanic families only. The English-speaking Hispanic group showed similar trends in their model to the Spanish-speaking Hispanic group but some of the observed variability between these families and their Spanish-speaking peers lend support to the salience of acculturation level in cross-cultural validity studies as it is likely to reveal significant intra-group differences. The mediated path model for the Spanish-speaking Hispanic families was most different from the path model for the Black and White families.

The fact that parent responsiveness had both a direct and indirect effect on children's English-language emergent literacy skills through child social competence for the Spanish-speaking group alone is an important finding. Additional research is certainly needed in this area to further explain the reasons for these findings. Within the present study, the Spanish-speaking Hispanic group is assumed to be least acculturated with U.S. mainstream culture and consists primarily of dual-language learners. They are therefore likely to have experiences that are unique to newly immigrant families and to maintain values that are more closely tied to their native countries (Gallimore, 2000). It is also possible that as dual-language learners, these young children may need to rely more heavily on their social skills to benefit from the interpersonal exchanges that are necessary to acquire competence in a second language and to successfully navigate the multiple cultural contexts which they must inhabit (Bronfenbrenner, 1979; Halle et al., 2014). In her research on community cultural wealth, Yosso (2005) lists linguistic capital as one of the key sources of cultural capital for minority students. She suggests that students who must navigate multiple language

environments, at home and at school, gain unique cognitive and social skills as a result (e.g. social maturity, memory, interpersonal skills). Indeed, the results of the present study support this theory with regard to social skills and its subsequent impact on emergent English literacy skills for Spanish-Speaking Hispanic families.

Covariate contributions. The discussion of this study's findings would not be complete without consideration of the influence of the study covariates on the key variables. Though much of the previous research conducted on parenting behaviors and child outcomes has been done using mainly White, middle-class samples, there is sufficient evidence to suggest that key variables beyond ethnicity contribute to cultural variations in family process and child development models, for example, income level, material hardship, parental stress, parental depressive symptoms, food insecurity, maternal education and employment status, parental marital status, household size, social position, and adaptive culture (Garcia Coll et al., 1996; McLoyd, 1998; Iruka et al., 2012; Raver et al., 2007). The CLIO study carefully selected child- and family-level covariates that would control for some of these variations (Judkins et al., 2008) and thus were included in the present study. These included maternal age and education, household income, number of children in household under 8 years old, number of adults in household over 18 years old, child special needs status, child gender, and child age.

This study found evidence to support child age as a consistent predictor of all child outcomes for all cultural groups. Child age was also significantly related to the parent predictor for two of the cultural groups. Children included in the study ranged from 40 to 80 months old and cross-cultural examination revealed that there were no significant differences in mean age. Generally, older children tended to earn higher scores on the measures of

emergent literacy and social competence. In fact, the standardized estimates for child age as a predictor of child emergent literacy and social competence was considerably larger than the main variable predictors within the model. Child age was also significantly related to parent responsiveness, but only for the Black and English-speaking Hispanic families. For those families, older children were recipients of higher levels of parental responsiveness.

Bornstein et al. (2008) found that even within a homogenous White, middle class sample, certain dimensions of maternal responsiveness changed over time as the child's developmental needs changed, especially within the domain of functional communication. Perhaps the dimensions of parent responsiveness that are most salient for these groups of parents undergo qualitative and/or quantitative change over time as their children mature physically, cognitively, and emotionally.

Child gender was also a consistent predictor of social competence across all cultural groups, with girls receiving higher ratings than boys. This finding is not surprising, given the wealth of studies that have shown that girls are more likely to be rated as having higher prosocial skills and lower behavior problems by both their teachers and parents (e.g., Ladd et al., 1999; McLoyd & Smith, 2002; NICHD, 2006). Special needs status was also a significant predictor of social competence for Black and Spanish-speaking Hispanic children and a significant predictor of emergent literacy skills for Black and English-speaking Hispanic children. Within the current study, English-speaking Hispanic children were least likely to be categorized as having special needs (i.e., diagnosed by health or educational professionals with a physical, emotional, hearing, or learning disability as defined within the CLIO study). Maternal age emerged as a significant predictor of emergent literacy for

Spanish-speaking families while family mobility (number of times the child has moved in the past year) was a significant predictor of child social competence for White families.

Another key finding that emerged was the predictive influence of household income on some of the parent and child outcomes. Even though the sample for the present study was drawn from a primarily low-income population of Even Start families, there were still significant differences in household income across cultural groups within the study. The English-speaking Hispanic and White groups were more likely to earn household incomes greater than \$1500 per month. For the English-speaking Hispanic families, however, income did not predict child emergent literacy scores. It is important to note that income was significantly related to the number of adults in the household for all groups. Both Hispanic groups tended to have more adults living in the household than the White or Black groups but there was a substantial difference in the household income between the two Hispanic groups. It is likely that certain legal and communication barriers to income-earning opportunities may exist for the adults in the Spanish-speaking households. Interestingly, income was significantly correlated with parent responsiveness for all but the Black families. Though Black and Spanish-speaking Hispanic families had comparably lower levels of income and parent responsiveness than the White and English-speaking families, the smaller sample size and limited range of scores for the Black families may account for the non-significant finding.

Iruka et al. (2012) conducted a cross-cultural validity study of family process models and found that the number of parents living in the house was not a significant contributor to child school readiness outcomes. In contrast to those findings, the present study found that the number of adults living in the household did predict some child outcomes within specific

cultural groups. Results indicated that having more adults in the household was linked to lower emergent literacy scores for Spanish-speaking Hispanic children and higher social competence scores for Black children. It is important to note that the Iruka et al. study did not include a measure of social competence and only examined number of parents, not including other adults, in the household. The aforementioned study also found that maternal education did predict several language and literacy skills for White, Black, English-speaking Hispanic, and Asian children, whereas the present study only found such links between maternal education and emergent literacy for both groups of Hispanic families. In addition, the current study found that maternal education was a salient predictor of social competence for White families only.

Study Limitations and Future Directions

Through the use of conditional effects path analysis, the current study was able to examine the cross-cultural validity of a mediated model of parent responsiveness, child social competence, and child emergent literacy, using a nationally representative sample of families enrolled in Even Start programs. The findings from the study suggest that parent responsiveness and child social competence were salient predictors of child emergent literacy for White, Black, English-speaking Hispanic, and Spanish-speaking Hispanic families. In addition, parent responsiveness predicted social competence for English- and Spanish-speaking Hispanic families. Further, social competence mediated the effects of parent responsiveness on emergent literacy for the Spanish-speaking Hispanic families.

Several limitations need to be considered when interpreting the findings of this study. First, the reliability of the parent responsiveness measure has not yet been well established. This parenting scale was designed for use in the CLIO study using parent report of home

behaviors and video observations of parent-child book reading and toy play tasks. The items that comprise the scale have unequal weightings and an overall alpha of .55. The items with the largest weightings, however, have an overall alpha of .80. To date there have not been any independent evaluations of the reliability of this scale. In addition, the description of the scale and the actual scale items warrant closer examination. CLIO defined parent responsiveness as a measure of positive and sensitive parenting skills, suggesting that the scale exclusively examines parent behaviors. This is not the case, however, as many of the items included in the scale are related to the child's behavior in relation to the parent (e.g., child engagement of parent, child sustained interest, and child negativity toward parent) with parent behaviors relating to supportiveness, directing of child attention, and cognitive stimulation. It appears that this scale may be better conceptualized as a measure of the quality of the parent-child relationship that is likely due to positive and sensitive parenting behaviors. Recent efforts have been made to disaggregate the parent and child behaviors from this scale in order to get a more parent-based measure of parent responsiveness and future studies should continue to pursue this line of research with an emphasis on examining the scale's cross-cultural validity. Regardless, the current study did offer some additional support for the cross-cultural validity of this scale beyond that provided by the developers.

The combination of self-report and observational data in the design of the parent responsiveness measure is a strength of the current study. There are, however, some limitations to this approach that should be acknowledged. Observations occurred in a controlled setting, therefore, the novelty of the environment and the presence of observers may have impacted the ability of the researchers and participants to accurately duplicate the parent-child interactions that would occur naturally in the home setting. In addition, families

with multiple children in the study were videotaped together. Although this group represented a small proportion of the sample, the CLIO found that having multiple children in the study was linked to statistically significantly lower scores of the parent responsiveness scale. Additional research is needed to determine if this is a true or measurement effect.

The social competence scale was also designed specifically for the CLIO study and combined teacher ratings of children's cooperative and problem behaviors. Combining both prosocial and negative behaviors led to increased specificity but also decreased sensitivity of the final social competence scale (Judkins et al., 2008). The current study did add to the predictive validity of the scale on children's emergent literacy skills across cultural groups, however, combining the two sets of behaviors limits the ability to make comparisons with other studies that tend to separate positive social-emotional skills and problem behaviors in their analyses. Additional reliability information is needed for this scale as well as the emergent literacy composite.

The present study was able to document heterogeneity within the sample of Hispanic families based on home language. The study findings support the use of this indicator to distill within-group differences directly, based on experiences linked to language acquisition issues, and indirectly, when used as a proxy for acculturation level. There are other potential indicators not included in the present study that may also be useful indicators of acculturation level, for example, length of time in the U.S., and country of origin. In addition, future studies should examine the emergent literacy skills of dual language learners in both English and their home language to provide a more comprehensive measure of their developing skills. Due to the small sample sizes, other cultural groups were not included in the present

study. Future studies should make increased efforts in include sample sizes for other ethnic groups large enough to allow for examination of the study variables.

Despite the limitations outlined above, the results from this study contribute to the literature on the cross-cultural validity of pathways of influence between parent responsiveness, child social competence and child emergent literacy. The present findings extend previous research by demonstrating the differential effects of warm and supportive parenting behaviors on children's social competence and emergent literacy skills across diverse cultural groups. In addition, the current study demonstrates that for children from diverse families, their social competence skills can foster growth in their emergent literacy skills. Consideration of cultural and other key demographic variables is essential when designing early intervention programs that aim to improve parental behaviors and have positive impacts of children's school readiness skills.

APPENDIX A: READ ALOUD PROFILE TOGETHER (RAPT) FORM

A. PRE-Reading Activities			B. Behavior DURING Reading						C. POST-Reading Activities				
A1. Caregiver (circle all that apply)		A2. Child (circle all that apply)	B1. Caregiver (circle all that apply)			B2. Child (circle all that apply)			C1. Caregiver (circle all that apply)		C2. Child (circle all that apply)		
1	Ensures child is comfortable, can see book	1	Expresses interest, excitement	1a	Tracks print with finger, labels punctuation	1b	1a	Attends to picture/story	1b	1	Asks questions about child's interest in book	1	Asks to read book again
2	Captures child's attention - expresses interest in book	2	Verbally responds to questions from parent about book	2a	Uses gestures, dramatic voices, props, tone of voice to interest child	2b	2a	Verbally responds to questions from parent about book	2b	2	Allows child to look at book	2	Responds to questions, expands on parent's comments about book
3	Labels, reads, directs attention to features of book such as title, author, illustrations or illustrator	3	Tells parent things about book, point out features of book	3a	Directs child's attention to illustrations	3b	3a	Points to pictures, words	3b	3	Answers child's questions about story or related topics	3	Comments on story/illustrations
4	Points to features of book such as title, author, illustrations or illustrator, tracks print	4	Asks questions about the book	4a	Asks story-related <u>close-ended</u> questions, not recall	4b	4a	Labels, names pictures	4b	4	Expands on child's comments about story/illustrations	4	Asks questions about story or related topics
5	Tells child sounds/letters to listen for, look for	5	Expands on parent's comments about book	5a	Discusses/expands on meaning of illustrations or text; offers new info	5b	5a	Repeats words/parts of story	5b	5	Reviews/reinforces vocabulary in book	5	Tries to "read" book on own - turning pages, exploring pictures
6	Reminds child of similar books s/he has read if s/he has read same book before	6	Tells parent things about the story line	6a	Expands on child's comments/questions about the story	6b	6a	Acts out/makes sounds related to story	6b	6	Asks for recall of information about story	6	No post-reading activities (without codes 1-6)
7	Responds to questions, expands on child's comments about book	7	No pre-reading activities (without codes 1-6)	7a	Comments on sound, letters, sound-letter links	7b	7a	Connects story to own life	7b	7	Asks questions about story that relate to child's own experiences		
8	Expands on book through close-ended questions, discussion, vocabulary, and/or background knowledge			8a	Highlights new vocabulary	8b	8a	Makes comments related to text, pictures or parent's comments	8b	8	Asks story-related <u>open-ended</u> questions		
9	Relates text to child's experiences/asks story related questions about child's experiences			9a	Asks recall questions about earlier parts of the story	9b	9a	Asks questions related to text, pictures or parent's comments	9b	9	Summarizes/retells story without child involvement		
10	Asks story-related <u>open-ended</u> questions			10a	Relates text to child's experiences/asks story related questions about child's experience	10b	10a	Tries to "read" book on own - turning pages, exploring pictures	10b	10	Summarizes/retells story with child involvement		
11	No pre-reading activities before reading begins			11a	Asks story-related <u>open-ended</u> questions	11b	11a	Tries to "read" book on own - telling story	11b	11	No post-reading activities (without codes 1-10)		
				12a	Has child join in reading/ completing text on own	12b	12a	Loses interest or walks away before book is completely read	12b	Length of Interaction: _____			
				13a	No Reading activities (without codes 1-12)	13b	13a	No Reading activities (without codes 1-12)	13b				

Reading Aloud Profile - Together (RAPT). WESTAT Rockville, MD, (c) 2004. Reprint only with permission of authors.
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APPENDIX B: QUALITY INDICATORS (QI) FORM

Story-related Vocabulary	<input type="checkbox"/> 1 (Minimal)	<input type="checkbox"/> 2	<input type="checkbox"/> 3 (Moderate)	<input type="checkbox"/> 4	<input type="checkbox"/> 5 (Extensive)
	Some story-related vocabulary words are introduced/discussed but the definition of one or more of the words is misleading or wrong.		Two or three story-related vocabulary words are introduced or discussed and the definition is accurate.		Six or more story-related vocabulary words are introduced or discussed and the definition of each vocabulary word is accurate.
	OR		<i>Both of the following supports are given for each word:</i>		<i>Both of the following supports are given for each word:</i>
	No new vocabulary introduced or discussed.		i. A picture, gesture, or other concrete visual aid is used; or ii. The word is linked to a rich network of related words or concepts.		i. A picture, gesture, or other concrete visual aid is used; and ii. Each word is linked to a rich network of related words or concepts.
Use of Open-Ended Questions ^a	<input type="checkbox"/> 1 (Minimal)	<input type="checkbox"/> 2	<input type="checkbox"/> 3 (Moderate)	<input type="checkbox"/> 4	<input type="checkbox"/> 5 (Extensive)
	Parent poses only one open-ended question.		Parent poses two or three open-ended questions.		Parent poses at least four open-ended questions.
	Parent rarely/never provides opportunity for child to respond (not allowing much time, not restating question or not acknowledging child's response).		Parent consistently shows interest in/actively encouraging child's response (e.g., pausing for child, restating question, scaffolding, or acknowledging child's response).		Parent consistently shows interest in/actively encouraged child's responses (e.g., pausing for child, restating question, scaffolding, or acknowledging child's response).
	OR				
	Parent poses no open-ended questions.				
Depth of Parent-Child Discussion	<input type="checkbox"/> 1 (Minimal)	<input type="checkbox"/> 2	<input type="checkbox"/> 3 (Moderate)	<input type="checkbox"/> 4	<input type="checkbox"/> 5 (Extensive)
	Parent engages child in no or low-level discussion only; no extended discussion before, during or after reading.		Parent engages child in one extensive discussion before, during or after reading.		Parent engages child in extensive discussion at least twice before, during or after reading
	Parent/child discussion consists mainly of short comments, management statements.		Parent/child discussion involves at least 3 turns (1 turn is one back-and-forth)		Parent/child discussion involves at least 3 turns (1 turn is one back-and-forth)
			Parent/child discussion lasts at least 2 minutes.		Parent/child discussion lasts at least 2 minutes.
<input type="checkbox"/> Read Aloud ends before book is completed. Explain Circumstances: _____ _____ _____					
<small>Reading Aloud Profile - Together (RAPT). WESTAT Rockville, MD, (c) 2004. Reprint only with permission of authors. Even Start Classroom Literacy Interventions and Outcomes Study (CLIO)</small>					

APPENDIX C: CONTINGUENCY SCORING SHEET (CSS) – BOOK READING

Coder: _____	CHILD ID#: _____
Date: _____	Child's Name: _____
I. PARENT'S BEHAVIOR	
Supportiveness	Stimulation of Cognitive Development
1 2 3 4 5 6 7 NC	
Intrusiveness	
1 2 3 4 5 6 7 NC	1 2 3 4 5 6 7 NC
Negative Regard	Detachment
1 2 3 4 5 6 7 NC	1 2 3 4 5 6 7 NC
II. CHILD'S BEHAVIOR	
Engagement of Parent	Negativity toward Parent
1 2 3 4 5 6 7 NC	1 2 3 4 5 6 7 NC
Sustained Interest in Book	Read this book before? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes; How many times? _____ _____ _____
1 2 3 4 5 6 7 NC	

APPENDIX D: CONTINGUENCY SCORING SHEET (CSS) – TOY TASK

Coder: _____	CHILD ID#: _____
Date: _____	Child's Name: _____
I. PARENT'S BEHAVIOR	
Supportiveness	Stimulation of Cognitive Development
1 2 3 4 5 6 7 NC	
Intrusiveness	Stimulation of Cognitive Development
1 2 3 4 5 6 7 NC	
Negative Regard	Detachment
1 2 3 4 5 6 7 NC	
II. CHILD'S BEHAVIOR	
Engagement of Parent	Negativity toward Parent
1 2 3 4 5 6 7 NC	
Sustained Interest in Toy	Were others present? <input type="checkbox"/> Yes <input type="checkbox"/> No Is this a twin/sibling case? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate Twin ID#: _____
1 2 3 4 5 6 7 NC	

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