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Father Involvement As A Predictor Of Preschool Children's Academic Readiness And Socioemotional Competence

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**FATHER INVOLVEMENT AS A PREDICTOR OF PRESCHOOL CHILDREN'S
ACADEMIC READINESS AND SOCIOEMOTIONAL COMPETENCE**

by

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THESIS

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

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Approved by:

Advisor

Date

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DEDICATION

This manuscript is dedicated to Matthew, for your encouragement and love as I went through this process. And of course, my family and friends for your help and encouragement over the years as I have worked hard to achieve my goals.

ACKNOWLEDGEMENTS

This study would not have been possible without the data collected from the children and families who participated in the ECLS-B. Also, IES was very helpful in giving me access to such a wonderful data set. I would also like to recognize Dr. Christopher Trentacosta and my thesis committee for their copious amount of guidance and feedback as I completed my degree.

PREFACE

This project explores the burgeoning field of father involvement. While there has been some research on the subject to-date, there is yet much to be explored and learned about this special population. This project aims to illuminate particular aspects of father involvement as it relates to fathers' early involvement with their children in ways that are related to academic and social and emotional involvement and examine these in relation to later child outcomes as children enter the formalized school setting at preschool. While this project cannot answer all questions about this subject, there are some interesting relationships that are discussed.

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CHAPTER 1

STUDYING FATHER INVOLVEMENT

Introduction

The study of aspects of families and parenting as predictors of child outcomes has long been a research interest of developmental psychologists. Previously, research on predictors of children's social and behavioral development has typically focused on middle-class, White, two-parent families (Cowen & Cowen, 1987; Jackson, 1974; Willie, 1976) and has scarcely included information on families from more diverse backgrounds. To highlight some of the diversity found among family constellations, one need look no farther than recent data from the U.S. Census Bureau. For instance, as of 2009, 51.9% of households were comprised of married families (U.S. Census Bureau, 2009), with still only a minority of families headed by mothers (23% of households; U.S. Census Bureau, 2008). While the configuration of American families is becoming more diverse, approximately 66% of households continue to contain a residential father (U.S. Census Bureau, 2009).

Though diversity and changes in the traditional family system are well documented, relatively little is yet known about the effects that fathers, including residential fathers, have in the lives of their children (Chambers, Schmidt & Wilson, 2006) and what this means for their later developmental outcomes. What is known is that when fathers are involved in positive ways in the lives of their children, like encouraging academic attainment in the preschool years (Gorvine, 2010), it can have positive impacts for both them and their children (Gorvine, 2010; Fagan, Palkovitz, Roy, & Farrie, 2009; Cabrera, Fagan, & Farrie, 2008). For instance, studies have shown that children who are raised their entire lives by both biological parents in a stable household, on average, have better outcomes in terms of social and psychological wellbeing,

behavior regulation, and greater educational attainment and performance (Carlson & Magnuson, 2011; McLanahan & Sandeful 1994; Single-Rushton & McLanahan, 2004) with special regard to greater cognitive abilities and language acquisition (Cabrera & Tamis-LeMonda, 2007). Researchers also posit that along with the greater opportunities for involvement that arise from simply “being there” for their children, residential fathers’ contribution to the stability of the family unit may also reinforce good parenting behaviors as well as lend greater support to the children’s mother (Carlson & Magnuson, 2011; Amato 1998; Harris, Furstenberg, and Marmer 1998; Lamb 2004; Marsiglio et al. 2000). Much of the extant literature on the associations between father involvement and later child outcomes focuses on fathers of school-aged children and does not speak much to the developmental trajectories of younger children raised with fathers residing in the home (Carlson & Magnuson, 2011).

Furthermore, less is known about the mechanisms that either lead to, or serve as barriers to, a residential father’s involvement with his children. For instance, what role does a father’s employment status or his relationship to the mother of his children play in the extent to which he is involved in the lives of his children? Several authors in the field have shed some light on this pathway, including Cabrera and colleagues (2007) who proposed a dynamic pathway model by which the roles of fathers in the lives of their children change across the lifespan, given the ages of fathers and their children and impinging life circumstances. The literature also shows that among the factors that have been shown to predict father involvement, the most prevalent (and those that have the strongest effect) are those associated with his employment history and ability to provide financially for his family and his history of substance abuse (Greene et al., 2001). Additionally, it would appear that a father’s relationship to the child’s mother is a key ingredient to continued involvement with his children (Fagan et al, 2009; Schacht, Cummings, & Davies,

2009). Fathers also appear to have increased differential involvement with their male children (Radin, 1986; Smith, 1989; Feldman and Wentzel, 1990; Mosley & Thomson, 1995; Greene et al, 2001). Access to fathers in past studies has been limited due to numerous factors including nonresidential status, so it is believed that using a subsample of residential fathers of young children will add to the general literature about what is known about fathers. Further, research on residential fathers can help to guide future studies on other father populations (e.g., nonresidential fathers), although findings cannot be directly extrapolated. This project will consider multiple aspects of resident father involvement during early childhood, and it will investigate predictors of father involvement as well as child outcomes associated with early resident father involvement.

Father Involvement (FI) Defined

Men have begun expanding the definition of “fathering,” and many fathers are increasingly involved in caregiving activities that were traditionally thought of as “mothering” roles. Though much research has examined mothers’ involvement and parenting, because of the unique ways in which fathers interact with their children, findings from studies involving mothers cannot simply be applied to fathers (Greene et al., 2001). Also, because many studies were conducted with fathers from White, middle-class families in married households, it is unclear whether existing findings may generalize to a broader cross-section of fathers (Greene et al., 2001).

Father involvement (FI) is thought of in different ways (Lamb 1986; Lamb et al. 1987; Greene et al, 2001), but some common characteristics include being there for children, providing for physical and psychological needs, and moral guidance. It also includes the amount and quality of time spent with children, the activities in which a father participates with the child, the

extent of his role in caregiving and making major decisions in the life of the child, as well as his ability to provide for his child and family by buying material things (including food and clothing) and keeping a stable roof over their heads.

Interestingly, some theories posit that the way a father sees himself within the fathering role and how he transitions within it is tied to the overall development of the child; thus, as the child changes, his identity in relation to the child undergoes a shift as well (Palkovitz & Palm, 2009). Father involvement has also been conceptualized as falling into one of three dimensions: Engagement (e.g., direct, one-on-one interactions with the child), Accessibility (e.g., when a father is available for engagement but is not having direct contact), and Responsibility (e.g., taking responsibility for the child's overall well being) (Lamb, 1986; Lamb et al., 1987; Greene et al., 2001). Engagement can be thought of as such activities as time spent during mealtimes, giving the child a bath, or changing diapers. It might also include reading the child a bedtime story or going on walks and playing with the child. Accessibility includes such activities as talking on the phone while the child plays with toys nearby, preparing dinner while the child is engaged in some other activity, or running errands and bringing the child along. Responsibility includes activities such as getting a child ready and taking him to a doctor's appointment, making sure that the child is properly clothed and helping to provide for the child financially, as well as providing for emergency care arrangements. The aspect of engagement seems to be more about a father's direct interactions with the child, whereas responsibility appears to be a specific form of engagement that takes into account activities that lead to the overall safety and wellbeing of the child. Thus, there is much overlap between these two aspects of father involvement, and all three are tightly connected.

As the study of father involvement is in its early stages, it is important to note that as the

roles of fathers and their place in the family continually change and expand, so too does the very definition of father involvement itself. It will be a goal of the field to use more contemporary literature and prevailing studies to further conceptualize this interesting and important construct. This project will consider learning encouragement and socioemotional support aspects of resident father involvement, as they are important components of father involvement in the lives of young children. Specifically, learning encouragement (LE) is defined as activities designed to promote a child's intellectual curiosity and to facilitate the learning process. Socioemotional support (SS) is considered activities in which a father might engage in fond thoughts and expressing emotion about his child both to himself and others.

Predictors of Father Involvement

Researchers have identified several risk and resilience factors associated with father involvement including a father's unemployment and subsequent poverty, substance abuse, incarceration, and emotional/physical health problems (Sullivan, 1993; Parke, 1996; Ray & Hans, 1997; Greene et al., 2001). Just as there are individual factors that serve as barriers to father involvement, so too are there barriers that exist in the family constellation itself. Such family risk factors include a father's relationship status with the child's mother, becoming involved with another romantic partner, or having children with another woman (Fagan, Palkovitz, Roy, & Farrie, 2009). Also, a child's temperament, physical health, and gender are also factors associated with levels of father involvement (Greene et al., 2001). Additionally, a father's attitudes and beliefs about being a father as well as his overall psychological wellbeing and the actual timing of fatherhood can be factors determining his level of involvement with his children (Parke, 1996; Palkovitz, 1984; Greene et al., 2001).

The leading barrier to father involvement appears to be a father's relationship to the mother of his children (Fagan et al, 2009; Schacht, Cummings, & Davies, 2009). A father's relationship to the mother of his children can serve as either a compounding risk or resilience factor for his later involvement in childcare (Fagan & Palkovitz, 2007), depending on the nature of the relationship. It would seem that the closer the relationship between parents, the more likely a father is to be involved with his children later on. Additionally, it appears that father involvement early on (including before the child is born), predicts his later involvement with his children (Cabrera, Fagan, and Farrie, 2008). A mother may opt out of a relationship with her child's father for various reasons, but it appears that the leading reason is that she may view her relationship with the father as unhealthy or she may perceive that he has little to offer his children in the way of financial support. For some women, simply "being there" is not enough. Thus, a father's employment status can have a deleterious effect on his relationship to his romantic partner and can lead to subsequent reductions in involvement with his children. In some ways, this "restricted access" is thought to benefit children who have fathers who have not left a path of high-risk behaviors upon the birth of their children. Fathers who have reduced their involvement in such behaviors early on and have become consistently involved in the lives of their children are more likely to continue this pattern throughout the child's early development (Fagan et al, 2009).

Gender differences were also found in some studies that showed that fathers tended to pay more attention to their male children than their female children. These differences were more apparent in the way that a father played with his children than in the way that he engaged in caregiving roles with them (Clarke-Stewart, 1978; Nugent, 1987; Wachs, Uzgiris, and Hunt, 1971; Yarrow et al., 1984; Greene et al., 2001). Other child factors that seem relevant to father

involvement have to do with the child's difficult temperament and premature birth. These child characteristics have been shown to generally be associated with lower levels of father involvement (Greif, 1995; Greene et al., 2001).

As the very definition of father involvement continues to evolve, so too do the mechanisms by which a father becomes involved with his children and the factors that shape his relationships and interactions with his children over time. As the population of men who are fathers is very diverse, it will be increasingly important for researchers to delve more deeply into the myriad ways in which fathers are different but also to explore the commonalities that they all share and what leads some men down paths of engaged fatherhood, and others down paths of absenteeism. This project will examine mother-father relationship quality, employment status, and child gender as predictors of resident father involvement.

Father Involvement and Child Outcomes

Shifting the focus from fathers themselves to the effect that their involvement has on the lives of their children, it is readily apparent that fathers have quite a profound impact on the outcomes of their children (Greene et al, 2001; Schacht, Cummings, & Davies, 2009). New research is beginning to provide support for the idea that children benefit from having a father present in their lives; though in general, children greatly benefit from having positive relationships with adult caregivers, regardless of gender, as long as the relationship contains factors such as nurturance, positive regard, and support and caring (Lamb, 1997; Greene et al., 2001). However, it cannot simply be assumed that what holds for mother-child relationships is also true for father-child relationships (Greene et al., 2001).

Several past studies have shed some light on how fathers interact with their children in comparison to mothers and the association between father involvement and their children's

developmental outcomes (Clarke-Stewart 1978; Nugent 1987; Wachs, Uzgiris, and Hunt 1971; Yarrow et al. 1984; Greene et al, 2001). These studies showed that mothers are generally more likely to interact with their children in ways that serve to engage their verbal abilities through teaching activities. Fathers, on the other hand, were found to engage their children more through physical play activities, which tend to elicit stronger emotional responses but are less sustained over time (Yogman et al., 1977). Clarke-Stewart (1980) found that preschool-aged children who were cared for by fathers had higher scores on tests of cognitive ability, greater self-control, and were more in touch with the feelings of others as compared to their daycare counterparts. Conversely, it was found that the socialization acquired by kids aged two to three years was higher for children who were in daycare programs (Clarke-Stewart, 1980). So it would appear that the impact of father involvement on child outcomes is more profound during the pre-school years (ages three to five) than during the time when children are acquiring social awareness (ages two to three) (Averrett, Gennetian, and Peters, 1996; Greene et al, 2001).

Over and above mothers' activities and other factors, high father involvement has been associated with fewer externalizing behavior problems and higher levels of sociability for both boys and girls. And for boys in particular, higher father involvement has been shown to be associated with fewer problem behaviors in school as well as higher levels of school performance for boys aged 5-11 (Radin, 1986; Smith, 1989; Feldman and Wentzel, 1990; Mosley & Thomson, 1995; Greene et al, 2001). Similarly, another study showed that boys who had fathers who employed harsh parenting techniques had lower emotional adjustment, more externalizing problems in the classroom, and lower overall academic performance (Wentzel & Feldman, 1993). Some of the literature seems to point to a threshold of father involvement that is required to have a significant impact. For fathers who are engaged in a significant portion of

the childcare activities, their preschool-aged children had higher scores on assessments of internal locus of control, cognitive abilities, and empathy (Radin, 1994).

Though the field is beginning to advance in terms of what we know about the ways in which fathers are involved in their children's lives and the immediate and long-term impact that their involvement can have on the overall development of their children, there is still much to be explored and discovered. The current study aims to contribute to the field of knowledge on residential fathers' roles in preschool children's academic and socioemotional readiness for school. These areas of child development—especially as children commence formal education—have been identified as necessary for children's later success in school. Further, in our study we hope to further explore and delineate the linkages among specific types of father involvement (i.e., learning encouragement and socioemotional support) and their associations with children's development in these crucial areas. The literature supports the idea that fathers' learning encouragement and socioemotional support are among the most robust predictors of later child outcomes, including preschoolers' academic readiness and their socioemotional competence.

The Proposed Study

Using a subset of data on residential fathers from the Early Childhood Longitudinal Study—Birth Cohort (ECLS-B), the present study examined specific aspects of residential fathers' involvement in the domains of learning encouragement and socioemotional support. From the literature, it would appear that these aspects of FI are predicted by several factors. For the current study, it was hypothesized that fathers would have a higher level of involvement with their children if they had good relations with the children's mother. It is also known that a father's employment status plays a direct role in his ability to provide for his family, and thus it

was hypothesized that a father who was not able to provide for his family would have less involvement with his children. The literature also suggests that fathers are differentially involved in the lives of their children based on the gender of the child. It was therefore hypothesized that in the current sample, fathers would be more involved with their male children than with their female children.

Not only is it important to determine the mechanisms by which fathers become involved with their children and in what capacities, it is also important to discern the associations between such involvement and later child outcomes. As it is known that fathers' involvement with their children generally yields positive academic outcomes in the long term, it was hypothesized that fathers who engaged in learning encouragement activities with their infants and toddlers would have children who performed better on measures of school readiness during the preschool period. Further, fathers who are involved in their children's lives in warm and nurturing ways tend to have children with fewer behavioral problems and higher levels of social engagement. It was therefore hypothesized that children whose fathers showed high levels of socioemotional support early in their lives would exhibit higher levels of socioemotional competence during the preschool period. It was also hypothesized that FI would account for indirect relationships between predictors of FI (such as child sex, paternal employment, and mother-father relationship) and child outcomes (such as school readiness indicators at and socioemotional competence, both at preschool). To explore these possible indirect relationships, and to corroborate findings from other parts of our analyses, a path analysis conceptual framework was used. The conceptual models for these analyses are shown in Figure 1 and Figure 2.

CHAPTER 2

METHOD

Participants

Participants for this study were drawn from a nationally representative sample of children (rounded $N = 11,000$), and their parents, born in 2001, and were included in the larger Early Childhood Longitudinal Study-Birth Cohort (ECLS-B). The ECLS-B was designed to be an informative vehicle for parents, educators, childcare providers, researchers, and policy makers to learn more about the experiences of children as they transition through early developmental stages (Snow et al., 2007). Some children were excluded from recruitment into the ECLS-B if their mothers were under 15-years-old or if they were adopted at birth or shortly thereafter.

As the ECLS-B is representative, it contains 5,450 males (51%), 4,450 Whites (54%), 1,700 Blacks (14%), 2,200 Hispanics (26%), 1,250 Asian/Pacific Islanders (3%) and 1,050 (4%) children of other race/ethnicities. Maternal age at childbirth also varies widely: 2,650 (25%) of mothers were between the ages of 20-24 years, 2,600 (26%) were between the ages of 25-29 years, 2,550 (24%) were 30-34 years, with the smallest sample sizes comprised of mothers 15-17-years-old (4%) and 40+ years (2%).

The ECLS-B contains approximately 8,450 residential fathers. The current analyses focused on a subsample of residential fathers from the initial assessment (at 9 months) (rounded un-weighted $N = 6,150$) who mothers identified as residing in the home and for whom data was available. In this subsample, 6,050 (98%) of the fathers were the target child's biological father. The mean age of fathers living in the household was 32.30 years ($SD = 6.78$ years) with 57.3% White, 8.1% Black, 15.2% Hispanic, and 13.9% Asian. Of these fathers, 2,250 (37%) had at least a high school diploma; 1,150 (18.4%) had a bachelor's degree, and 1,400 (22.9%) had some

college education (though no degree). When asked, 5,450 (88.2%) fathers were gainfully employed with a median gross salary of \$28,000 per year.

Procedure

Data for the ECLS-B were collected at baseline (birth), 9 months, 2 years and 4 years (preschool). Predictors of FI (i.e., child gender and father's education level; and mother-father relationship) were measured at baseline and 9 months, respectively. Predictors of children's later school readiness outcomes were collected at both 9 months and 2 years. Academic preparedness and socioemotional competence outcome indicators were assessed at preschool (4 years). At each time point, children and parents were assessed in their homes by trained administrators. Developmental milestones were assessed in the areas of cognitive, language, social, emotional, and physical functioning. The parent assessed was the primary caregiver, which was usually the child's mother. When available, resident fathers completed self-administered questionnaires (SAQ). Data were collected using parent computer-assisted personal interview (CAPI) instruments and questionnaires, father questionnaires, and direct child assessments during an in-person home visit. Children's information was also collected from birth certificates and using observations from field staff about children's behavior and home environment during the home visit. During home visits, the father SAQs were left with the primary respondent for fathers to complete. The resident father SAQ contained questions about topics such as activities done with the child, feelings about the child and about being a father, knowledge about child development, his current relationship with the child's mother, and other demographic information. The main parent CAPI contained questions about a wide variety of topics including household composition, child nutrition, home learning environment, and involvement of the child's father.

Measures

Predictors of father involvement. Child gender was collected at baseline. Fathers' highest level of education completed and employment status (e.g., employed vs. unemployed) were from the 9-month Resident Father SAQ. The mother-father relationship was assessed using a multi-part composite variable at the 9-month assessment assessing both parents' view of their relationship (Figure 1). The aggregate mother-father relationship measure contained a total of four components (with two components obtained from each parent). The first component included the question, "*Would you say that your marriage/relationship is...*" and allowed respondents to choose among 1 = *Very happy*, 2 = *Fairly happy*, or 3 = *Not too happy*. Higher scores on this measure indicate less satisfaction with the romantic relationship. To better correspond with ratings from the second component, this single item was reverse-scored such that higher values indicate greater relationship satisfaction. The second component included the question, "*Do you and your spouse/partner often, sometimes, hardly ever, or never have arguments about...*" and had them rate 10 potential sources of arguments (e.g., children, money, sex, drinking, etc.) on a scale where 1 = *Often*, 2 = *Sometimes*, 3 = *Hardly ever*, and 4 = *Never*. First, aggregate scores of mothers' and fathers' view of "argument" areas were created by averaging the scores for the multi-part item for each respondent separately (Mother: $M = 3.20$ (.50); Father: $M = 3.13$ (.52)). A z -score was calculated for this part of the measure. Respondents' relationship quality was assessed (Mother: $M = 2.71$ (.51); Father: $M = 2.69$ (.50)). Then a z -score was calculated for each respondent's rating of relationship quality. The correlation between these two components was found to be adequate ($r = .40$ for fathers and $.43$ for mothers, $p < .001$). Therefore, the components were combined for mothers and fathers separately into two standardized z -score variables using the same method for each respondent separately (i.e.,

mother's perception of the relationship and father's perception of the relationship). The correlation between the mother's relationship composite and the father's relationship composite was found to be very good for the purposes of this study ($r = .51, p < .001$), so they were combined into one variable representing mother-father relationship quality.

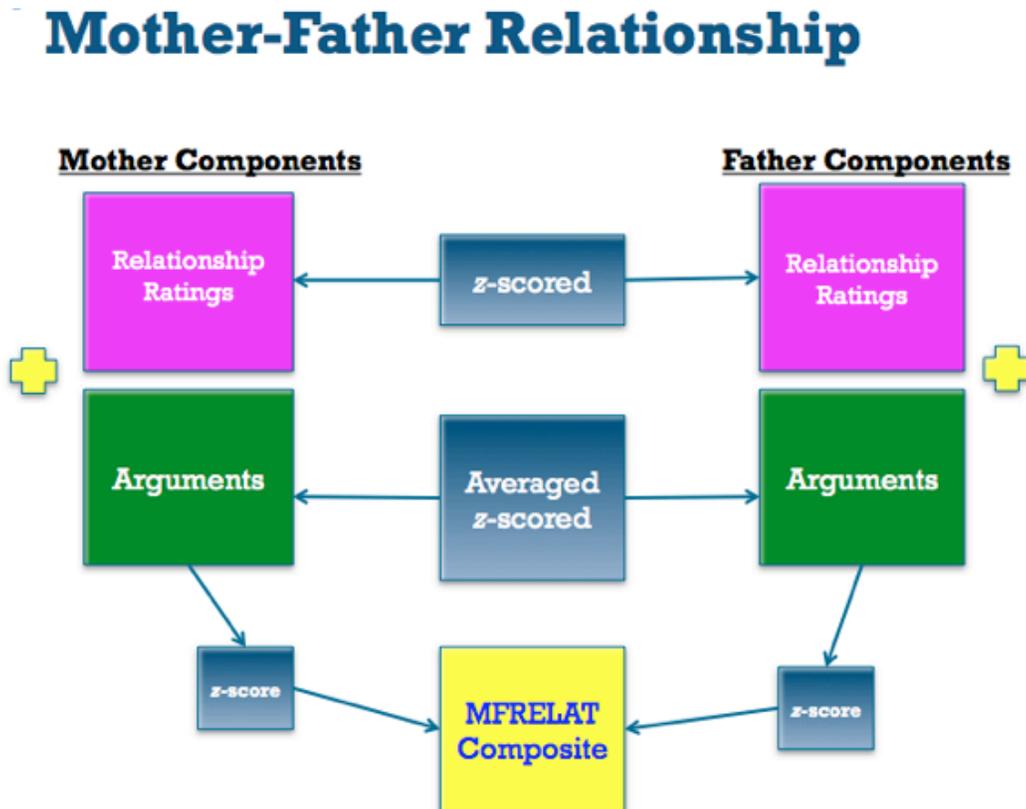


Figure 1. A Visual Representation of the Mother-Father Relationship Construct

Father involvement. In this study, FI was measured along two dimensions: learning encouragement (LE) and socioemotional support (SS). Fathers' LE was assessed using a 3-item measure from the 9-month and 2-year Resident Father SAQ. This measure reads, "*In a typical week, how often do you do the following things with your child?* a) *Read books to your child?* b) *Tell stories to your child?* c) *Sing songs with your child?* Items were scored on a Likert scale where 1 = *Not at all*, 2 = *Once or twice*, 3 = *3-6 times*, and 4 = *Every day*. The internal

consistency of this scale was found to be adequate for each time period assessed (9 months $\alpha = .64$; 2 years $\alpha = .71$). Father's LE, as measured during these two time periods, was highly correlated ($r = .49, p < .01$).

Fathers' SS was measured using items from the Resident Father SAQ. A composite measure was created from the following 5-part item from the 9-month assessment: "*How often do you feel the following ways or do the following things? a) You talk a lot about your child to your friends and family, b) You carry pictures of your child with you wherever you go, c) You often find yourself thinking about your child, d) You think holding and cuddling your child is fun, and e) You think it's more fun to get your child something new than to get yourself something new.*" These items were measured on a 4-point scale where 1 = *All of the time*, 2 = *Some of the time*, 3 = *Rarely*, and 4 = *Never*. This measure was reverse scored such that higher scores indicate higher levels of SS. The internal consistency of this scale was found to be adequate ($\alpha = .56$). The item content was further analyzed and one item (item "b") was removed as it did not fit with the overall content of the other items. The internal consistency of this newly created 4-item scale improved ($\alpha = .60$). There was not a viable measure of fathers' SS in the 2-year assessment. This measure was significantly correlated with LE measures at both the 9-month ($r = .23, p < .01$) and 2-year assessment ($r = .17, p < .01$).

Child outcomes. Children's academic readiness was measured using the ECLS-B Direct Cognitive Assessment. This set of tasks was designed to be developmentally appropriate in terms of skill level and content difficulty. It was also designed to measure language, literacy, early mathematics skills, and color knowledge. This assessment was adaptive in nature and was based on item response theory (IRT) where children are not administered all items of every task, but rather, their patterns of correct/incorrect answers are analyzed to estimate scores across different

assessment forms. IRT subtest scores are not integers, but rather represent probabilities of correct answers over the entirety of all items in the subtest. IRT scores are derived from theta scores, which are linear in nature, similar to scale scores or t-scores but are less intuitively interpretable, but are more normally distributed and not dependent on item difficulty. Only the PreLAS expressive language score is not IRT based.

A language assessment was conducted using the PreLAS and the Peabody Picture Vocabulary Test Third Edition (PPVT-III; Dunn & Dunn, 1997). The PreLAS is a test designed to measure children's expressive language skills in the areas of syntax, semantics, and morphology. This test is appropriate for children 4-6 years old. In this assessment, the "Let's Tell Stories" subtest was administered, in which the child was read two stories and subsequently asked to retell the story using a set of pictures as cues. Scores ranged from 0-5 with 0 = "No response"; 1 = "Short, isolated phrases; at least 1 word in English"; 2 = "Disconnected thoughts, at least one sentence, many grammar errors"; 3 = "Recognizable story line, limited detail, grammar errors"; 4 = "A recognizable version of a story in coherent, fluent sentences"; and 5 = "Articulate, detailed sentences, vivid vocabulary, and complex constructions" ($M = 2.40$, $SD = 1.02$, $Min = 0.00$, $Max = 5.00$; Snow et al., 2007). The PPVT is a test that evaluates receptive vocabulary and word retrieval abilities using a set of cards with multiple pictures that have to be accurately identified by the child according to a matching word selected by the examiner. No reading is required. From this measure is derived an IRT based receptive vocabulary ($M = 8.50$, $SD = 1.99$, $Min = 4.62$, $Max = 13.63$; Snow et al., 2007) composite score.

Literacy was determined with a 37-item measure assessing functioning in several domains: expressive/receptive letter recognition, letter sounds, early reading skills, phonological awareness, knowledge of print and matching words. An overall IRT-based literacy scale score

was derived to represent this construct and equivalent T-score values are given (Literacy T-score: $M = 50.00$, $SD = 10.00$, $Min = 32.41$, $Max = 86.20$; Snow et al., 2007).

Mathematics ability was assessed using a core set of 28 items that included both easy and hard items covering material in the following domains: number sense, geometry, counting, operations, and patterns. From this measure an overall mathematics IRT-based scale score was derived to represent this construct and equivalent T-score values are given (Mathematics T-score: $M = 50.00$, $SD = 10.00$, $Min = 21.45$, $Max = 84.15$; Snow et al., 2007).

Socioemotional skills and behaviors were measured using the Preschool Kindergarten Behavioral Scales, 2nd Edition (PKBS-2; Merrell, 2003). A total of 16 items were chosen from this measure to be included in the study and covered constructs such as prosocial skills, problem behaviors and emotions, emotion knowledge, temperament, approaches to learning and friendship. Items were administered to primary caregivers who were asked to think about their child's behaviors in the last 3 months and to compare their behaviors to other children within 2 years of their child's age. Items were rated on a Likert scale where 1 = *never* to 5 = *very often*. These items are contained within the Preschool Computer Administered Parent Interview (CAPI). A factor analysis with VARIMAX rotation was performed on this measure and it was found that items for this measure loaded onto four distinct factors. From this, it was determined that the items that loaded on one factor represented socioemotional competence. For example, items included "*Volunteers to help other children complete tasks*" and "*Appropriately uses a variety of words to describe feelings.*" This 7-item socioemotional competence measure had acceptable internal consistency ($\alpha = .80$).

Similarly, it was also desired to know if early care and education providers' (ECEP) views of the child coincided with those of their parents. ECEP interviews were conducted by

phone using computer-assisted interview (CAI) instruments. This interview contained 20 sections covering topics on early care, the education setting, child care, the child's development, their attitudes about caring for children, and the caregiver's professional and educational background. Administration time ranged from 33-44 minutes depending on whether or not childcare was based in the home or in a child care center, respectively. Of the items used to compose the socioemotional competence 7-item scale from the primary caregiver's point-of-view, four of the same items were also used with ECEPs (e.g., "*Child makes friends easily*"). These items were found to have high internal consistency ($\alpha = .82$).

Covariates. All analyses controlled for variables that have been shown by the literature to be predictors of positive child outcomes. Such variables are socioeconomic status (SES), maternal and paternal age, maternal and paternal education, child mental ability, and parent-child relationship. All of these variables were assessed in the ECLS-B. Child mental ability was assessed using the Bayley Short Form—Research Edition (BSF-R) during the 9-month assessment phase of data collection. This measure contains selected items from the Bayley Scales of Infant Development, Second Edition (BSID-II) and measures children's fine and gross motor skills, receptive and expressive language abilities, problem solving and reasoning, as well as emotion regulation (Snow et al., 2007). The Nursing Child Assessment Teaching Scale (NCATS)—which comes from the Nursing Child Assessment Satellite Training (NCAST)—was used to assess the parent-child interaction for early signs of social and cognitive skills during the 9-month data collection phase (Snow et al., 2007).

Analysis Plan

As an initial step, means, standard deviations, and ranges for all variables were inspected for normality. Then, bivariate correlations between variables were examined. Next, hypotheses

were tested using a series of hierarchical multiple regression analyses. First, associations between predictors of FI and father's LE and SS were examined. Covariates and all hypothesized predictors of FI (e.g., child gender) were entered simultaneously in separate regressions predicting (a) fathers' LE and (b) fathers' SS. Next, FI constructs for LE and SS support were used as predictors of preschoolers' outcomes in areas of similar functioning. For example, in multiple regressions including all covariates, fathers' SS was examined as a predictor of the early childcare providers' rating of the child's socioemotional competence on the PKBS-2. As a follow-up step to these analyses, the significant relationships generated from the regression models were used to construct multiple path analyses using structural equation modeling with Mplus (Muthen & Muthen, 2010) using maximum likelihood estimation. In so doing, the relationships among predictors and outcomes were graphically represented and confirmed.

CHAPTER 3

RESULTS

Table 1 presents means, standard deviations, and ranges (minimum and maximum) for all predictors of FI and covariates. This is quite a diverse sample, with household SES generally above the 3rd quintile. Additionally, most parents were in their late 20s to early 30s, but ages ranged widely as well—fathers much more than mothers. Most of the parents in this study also had at least some college or technical education and rated both their relationships with their spouses and with their children as being positive or at least about the same as other families.

Table 2 presents descriptive statistics for the FI measures. Most fathers at the 9-month assessment had a moderate amount of involvement with their children from an LE perspective. Fathers at the 2-year assessment also displayed moderate amounts of LE. At the 9-month assessment, fathers had a relatively high level of involvement with their children from a socioemotional perspective. Table 3 presents the descriptive statistics for the school readiness indicators as well as parent and caregiver reports on children's socioemotional competence.

Table 1

Descriptive Statistics: Predictors of Father Involvement and Covariates

Predictors	<i>N</i>	Mean (<i>SD</i>)	Range
SES	8450	3.30 (1.39)	1 st to 5 th Quintile
Maternal Age	8400	29.43 (6.09)	15-52 years
Maternal Education	8400	4.55 (2.01)	1-9 1 = ≤ 8 th grade 4 = Voc/tech program 5 = Some college
Paternal Age	8450	32.30 (6.78)	15-75 years
Paternal Education	8450	4.55 (2.12)	1-9 1 = ≤ 8 th grade 4 = Voc/tech program 5 = Some college
Father Employment	6150	88.2% Employed 11.8% Unemployed	NA
Child Sex	8450	51.4% Male (n = 4350) 48.6% Female (n = 4100)	NA
Child Mental Ability	8100	74.84 (9.90)	32.04-131.17
Parent-Child Relationship	6900	50.00 (5.83)	23-70
Mother-Father Relationship	8000	.01 (.76)	-3.56-1.23

Note. Unweighted *N* rounded to the nearest 50 participants.

Table 2
Descriptive Statistics for Father Involvement Measures

Predictors (FI)	<i>N</i>	Mean (<i>SD</i>)	Range
Learning Encouragement (9mos)	6200	2.32 (.75)	1-4
Learning Encouragement (2yrs)	5550	2.40 (.72)	1-4
Socioemotional Support (9mos)	6200	3.63 (.38)	1-4

Note. Unweighted *N* rounded to the nearest 50 participants.

Table 3
Descriptive Statistics for School Readiness Indicators

Predictors	<i>N</i>	Mean (<i>SD</i>)	Range
Receptive Language	6750	8.53 (1.99)	4.64-13.63
Expressive Language	6600	2.37 (1.04)	0 = No resp. to 5 = Detailed sentences
Literacy <i>T</i> -score	6650	51.24 (10.50)	32.41-86.20
Math <i>T</i> -score	6650	51.07 (10.41)	21.55-84.15
Socioemotional Competence (Parent)	7150	3.84 (.64)	1-5
Socioemotional Competence (Child Care Provider)	4650	3.53 (.84)	1-5

Note. Unweighted *N* rounded to the nearest 50 participants.

Bivariate correlations were conducted between each of the predictors of FI and the FI constructs themselves (Table 4). Interestingly, all predictors were significantly correlated with at least one of the FI constructs, although the magnitude of most of these correlations was modest. As would be expected, the LE constructs at their respective time points were highly correlated with one another, and they were also significantly correlated with SS.

Table 4

Bivariate Correlations: Predictors of Father Involvement and Covariates with Measures of Father Involvement

Predictors	Father Involvement Indicators		
	FI Learning Encouragement (9mos)	FI Learning Encouragement (2yrs)	FI Socioemotional Support (9mos)
SES	.04**	.13**	-.14**
Maternal Age	-.01	.03*	-.12**
Maternal Education	.05**	.13**	-.14**
Paternal Age	-.01	.00	-.10**
Paternal Education	.05**	.13**	-.16**
Father Employment	.05**	.01	.02
Child Sex	.04**	.03*	.01
Child Mental Ability	.05**	.01	-.00
Parent-Child Relationship	.05**	.06**	-.02
Mother-Father Relationship	.12**	.07**	.12**
Learning Encouragement (9mos)	---	.49**	.23**
Learning Encouragement (2yrs)	---	---	.17**

Note. ** Significant at .01 level; * Significant at .05 level

Table 5 shows correlations of predictors of FI and associated covariates with child school readiness outcomes. Mother education was moderately associated with receptive language, and literacy and math scores. Father education showed a similar trend. Father employment had an inverse relationship with all academic outcomes. Father age also had an inverse relationship with expressive language scores and socioemotional competence ratings.

Table 5
Bivariate Correlations: Predictors of Father Involvement and Covariates with Indicators of Child Academic Readiness

Predictors	Receptive Language	Expressive Language	Literacy IRT	Math IRT	Socioemotional Competence (Parent)	Socioemotional Competence (Caregiver)
SES	.36**	.20**	.42**	.41**	.08**	.04**
Maternal Age	.16**	.03**	.22**	.23**	-.03*	-.01
Maternal Education	.34**	.17**	.41**	.39**	.09**	.04**
Paternal Age	.10**	-.00	.17**	.16**	-.05**	-.03*
Paternal Education	.32**	.15**	.41**	.39**	-.05**	.01
Paternal Employment	-.11**	-.07**	-.10**	-.11**	.03	-.02
Child Sex	.09**	.10**	.07**	.06**	.15**	.18*
Child Mental Ability	.11**	.10**	.09**	.12**	.11**	.11**
Parent-Child Relationship	.18**	.11**	.12**	.13**	.11**	.04*
Mother-Father Relationship	.02	.01	.05**	.04**	.06**	.04**

Note. **Significant at .01 level; *Significant at .05 level

Finally, we wanted to see how the FI constructs were related to later academic outcomes. Fathers' LE was only moderately associated with later school readiness outcomes as determined by the 9-month assessment (see Table 6). This relationship strengthens during the 2yr assessment. Fathers' SS at the 9-month assessment had an inverse relationship with both literacy and math

scores, and was otherwise significantly related to socioemotional competence ratings from both parents and child care providers.

Table 6

Bivariate Correlations: Measures of Father Involvement and Related Academic Readiness Outcomes

Predictors	Receptive Language	Expressive Language	Literacy IRT	Math IRT	Socioemotional Competence (Parent)	Socioemotional Competence (Caregiver)
FI Learning Encouragement (9mos)	.09**	.06**	.10**	.07**	.08**	.06**
FI Learning Encouragement (2yrs)	.15**	.08**	.15**	.12**	.12**	.06**
FI Socioemotional Support (9mos)	-.03	.01	-.05**	-.08**	.08**	.06*

Note. **Significant at .01 level; *Significant at .05 level

Regression Analyses

The primary hypotheses were examined using hierarchical linear regressions. For clarity of presentation, analyses were separated into three groups: 1) Sociodemographic covariates and predictors (e.g., SES, parental age and education, child sex and mental ability, parent-child relationship, paternal employment, and the mother-father relationship) were used to predict FI (e.g., learning encouragement and socioemotional support) at 9 months and 2 years, respectively; 2) Learning encouragement at 9 months and 2 years was used to predict various school readiness indicators (e.g., literacy scores, math scores, and receptive and expressive language ability) at preschool; 3) LE at 9 months and 2 years, and SS at 9 months were used to predict both parent and child care provider ratings of children's socioemotional competence at preschool.

For the first set of analyses, mother-father relationship, fathers' employment status, child gender and the covariates were used to predict both LE and SS at 9 months and LE at 2 years using hierarchical linear regression analyses (Table 7). Analyses indicate that child sex, paternal employment status, and the mother-father relationship were all significant predictors of LE at 9 months. This analysis indicated that fathers were more involved with their female children. The mother-father relationship was the only significant main predictor of LE at 2 years and SS at 9 months, after accounting for associated covariates. It is also important to note that LE at 9 months was a significant predictor of the same construct at the 2-year assessment. Of the covariates, maternal and paternal education and child mental ability were predictive of LE at both the 9 months and 2-year assessment. Only paternal education and mother age were predictive of SS at the 9-month assessment. The parent-child relationship was only predictive of LE at the 9-month assessment.

Table 7

Predicting Father Involvement from Sociodemographic Characteristics

Predictors	Father Involvement Indicators		
	FI Learning Enc (9mos)	FI Learning Enc (2yrs)	FI SocEmot Support (9mos)
SES	-.05	.03	-.00
Maternal Age	-.03	-.01	-.04*
Paternal Age	-.01	-.04	-.03
Maternal Education	.07**	.08***	-.04
Paternal Education	.05*	.08***	-.12***
Child Mental Ability (BSF-R)	.04**	-.03*	-.00
Parent-Child Relationship (NCATS)	.03*	.00	.01
Child Sex	.05***	.02	.02
Paternal Employment	.07***	.01	-.03
Mother-Father Relationship	.12***	.04**	.12***
Fathers' Learning Encouragement (9-mo)	---	.48***	---

Note. * $p < .05$; ** $p < .01$. *** $p < .001$. Standardized betas are presented.

For the second set of analyses, LE at 9 months (Table 8) and LE at 2 years (Table 8a), and SS at 9 months (Table 9), were used to predict school readiness indicators (e.g., receptive vocabulary, expressive language, literacy and mathematics scores) at preschool (Table 8). In this

set of analyses, the aforementioned sociodemographic variables (e.g., SES, parental age and education, child sex and mental ability, parent-child relationship, paternal employment, and the mother-father relationship) were used as covariates. When LE at 9 months was used to predict school readiness indicators, all relationships between LE and school readiness were found to be statistically significant. When we further controlled for LE at 9 months and used LE at 2 years as the main predictor of school readiness indicators at preschool, all relationships between LE at 2 years and academic readiness—with the exception of expressive language—were found to be statistically significant. After including LE at 2 years in the model, all previous significant relationships between LE at 9 months and school readiness were no longer significant.

Table 8
Father Learning Encouragement as a Predictor of Academic Readiness (9-mo)

Predictors	Academic Readiness Indicators			
	Receptive Vocabulary	Expressive Language	Literacy IRT score	Mathematics IRT score
SES	.19***	.18***	.08**	.12***
Maternal Age	.02	-.03	-.00	.04*
Paternal Age	-.02	-.04	.01	-.01
Maternal Education	.11***	.03	.22***	.18***
Paternal Education	.06**	-.03	.19***	.15***
Child Mental Ability (BSF-R)	.08***	.06***	.10***	.12***
Parent-Child Relationship (NCATS)	.08***	.06***	-.01	.00
Child Sex	.08***	.10***	.06***	.06***
Paternal Employment	-.05***	-.04**	-.03*	-.03*
Mother-Father Relationship	.01	.00	.02	.02
Fathers' Learning Encouragement (9-mo)	.06***	.04**	.06***	.03*

* $p < .05$; ** $p < .01$. *** $p < .001$. Standardized betas are presented.

Additionally, adding the 2yr assessment to the regression (Table 8a) does not increase the predictive power of the model as in all scenarios, the amount of variance accounted for by adding LE at 2yrs to the model does not account for any additional variance. In fact, the amount of variance accounted for by LE at 2yrs is lower for every outcome, though each model is statistically significant (Receptive Vocabulary: $F(12, 3462) = 52.96, p < .001$; Expressive Language: $F(12, 3382) = 17.58, p < .001$; Literacy: $F(12, 3408) = 78.25, p < .001$; Math: $F(12, 3418) = 70.94, p < .001$).

Table 8a
Father Learning Encouragement as a Predictor of Academic Readiness (2yr)

Predictors	Academic Readiness Indicators			
	Receptive Vocabulary	Expressive Language	Literacy IRT score	Mathematics IRT score
SES	.16***	.18***	.06	.10**
Maternal Age	.02	-.04	.01	.06*
Paternal Age	-.01	-.03	-.00	-.02
Maternal Education	.10***	.03	.21***	.18***
Paternal Education	.06*	-.05	.20***	.16***
Child Mental Ability (BSF-R)	.08***	.06***	.10***	.11***
Parent-Child Relationship (NCATS)	.09***	.06***	-.01	-.01
Child Sex	.09***	.11***	.06***	.05***
Paternal Employment	-.05***	-.04*	-.03	-.04**
Mother-Father Relationship	.01	.01	.03	.03*
Fathers' Learning Encouragement (9-mo)	.01	.03	.02	.01
Fathers' Learning Encouragement (2yr)	.09***	.03	.08***	.05**
ΔR^2	.001	.001	.004	.005

* $p < .05$; ** $p < .01$. *** $p < .001$. Standardized betas are presented. ΔR^2 represents the change in Beta from FI Learning Encouragement at 9-mo and Learning Encouragement at 2yr for each of the academic readiness indicators.

Finally, SS at 9 months was used as a predictor of both parents' and child care providers' ratings of children's socioemotional competence at preschool while controlling for sociodemographic variables (Table 9). When SS at 9 months was examined as the primary predictor of child socioemotional competence ratings by adults in their lives, it was found that

there was a significant relationship between this construct and both parent and child care provider ratings of socioemotional competence at the preschool assessment. With regard to sociodemographic covariates—SES, child mental ability, the parent-child relationship, child sex, and the mother-father relationship were all significant predictors of parents' ratings of children's socioemotional competence. Maternal age and paternal education had significant inverse relationships with parents' ratings. Additionally, child mental ability, child sex, and the mother-father relationship were significant predictors of childcare providers' ratings of children's socioemotional competence at preschool.

Table 9
Fathers' Socioemotional Support as a Predictor of Children's Socioemotional Competence at Preschool

Predictors	Socioemotional Competence Indicators	
	Socioemotional Competence (Parent PK)	Socioemotional Competence (Caregiver PK)
SES	.11***	.05
Maternal Age	-.06**	-.02
Paternal Age	-.03	-.03
Maternal Education	.04	.04
Paternal Education	-.08***	-.05
Child Mental Ability (BSF-R)	.10***	.10***
Parent-Child Relationship (NCATS)	.06***	.01
Child Sex	.16***	.18***
Paternal Employment	-.02	-.01
Mother-Father Relationship	.06***	.04*
Father's Socioemotional Support (9-mo)	.08***	.06**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. Standardized betas are presented.

Path Analyses

Structural equation modeling was used to recreate the significant relationships among predictors and outcomes previously derived from the hierarchical linear regressions in the first half of the data analysis process. Indirect pathway data for these analyses can be seen in Table 10. Additionally, indices used to determine model fit are in Table 11.

Table 10
Standardized Coefficients for Focal Indirect Paths of Child Sex, Paternal Employment, and Mother-Father Relationship as Predictors of Academic Readiness Indicators

Indirect Paths from Figure 1	Academic Readiness Indicators			
	Receptive Vocabulary	Expressive Language	Literacy IRT score	Math IRT score
Sex→FILE→Academic Readiness Outcome	.002 (.001)*	.001 (.001)*	.002 (.001)*	.001 (.001)
Employment→FILE→Academic Readiness Outcome	.004 (.001)***	.003 (.001)**	.004 (.001)***	.002 (.001)*
MFRELAT→FILE→Academic Readiness Outcome	.007 (.002)***	.005 (.002)**	.007 (.002)**	.004 (.002)*

Note. * $p < .05$; ** $p < .01$. *** $p < .001$. Standardized betas are presented with standard errors in parentheses. Sex = Child Sex; Employment = Paternal Employment at 9 months; MFRELAT = Mother-Father Relationship; FILE = Father involvement learning encouragement at 9 months.

As noted above, the conceptual models for these analyses are shown in Figure 2 and Figure 3. Model fit for these analyses were determined by a method used by Hu and Bentler (1999) where a non-significant Chi-square determines exact goodness of fit of the model. Also, the Root Mean Square Error of Approximation (RMSEA) with a value below .06, and a Comparative Fit Index (CFI) above .95 indicate good model fit. Direct paths were examined for statistical significance. Indirect paths were tested for statistical significance using the delta method (see Sobel, 1982) as used by the Mplus statistical package. Analyses were broken into two parts: 1) Pathways from predictors of LE at 9 months to each of the school readiness outcomes (e.g., receptive vocabulary, math and literacy scores, etc.); and 2) Pathways from predictors of SS at 9 months to each of the competence ratings from parents and child care providers. Covariates (e.g., maternal education) that were statistically significant predictors of FI

and/or the school readiness outcome in the regression models (e.g., maternal education) were also included in the path analyses as covariates.



Figure 2. Conceptual Path Model of Predictors of Father Involvement Learning Encouragement at 9 months and Subsequent Academic Readiness in Preschool

In the first set of analyses, the paths from our main predictors (e.g., child sex, paternal employment and the mother-father relationship) to LE at 9 months and to each of the school readiness outcomes was examined. When the pathway leading to the school readiness indicator of receptive vocabulary was examined, the model was found to have good fit (see Table 11). All paths predicting LE at 9 months for main predictors were found to be statistically significant, $p < .05$. Predictors and covariates explained 17.9% of the variance in receptive vocabulary and 2.6% of the variance in LE. All indirect paths from main predictors to receptive vocabulary through LE at 9 months were found to be statistically significant (child sex: $z = 2.17$, $p < .05$; paternal employment: $z = 3.45$, $p < .001$; mother-father relationship: $z = 4.12$, $p < .001$).

Table 11
Model Fit for Academic Readiness Path Analyses

Academic Readiness Indicators	Model Fit Indicators		
	X ² (df)	RMSEA	CFI
Receptive Vocabulary	4.34 (<50)	.01	1.00
Expressive Language	9.59 (<50)	.02	.99
Literacy <i>T</i> -scores	7.51 (<50)	.02	1.00
Math <i>T</i> -scores	10.81 (<50)	.02	1.00

Note. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index

Next, we wanted to examine a similar path model predicting the expressive language outcome. The fit for this model was found to be good. All main predictors of LE were found to be statistically significant, $p < .05$. Predictors and covariates explained 6.3% of the variance in expressive language and 2.6% of the variance in LE. The indirect path from child sex to expressive language via LE was found to be marginally significant, $z = 2.0$, $p < .05$. The indirect path from paternal employment to expressive language was found to be statistically significant, $z = 2.75$, $p < .01$. There was also a statistically significant indirect pathway from mother-father relationship to the expressive language construct, $z = 3.05$, $p < .001$.

We also evaluated the pathway to children's literacy scores upon entrance to preschool. The model for this analysis had good fit. All main predictors were statistically significant predictors of LE, $p < .05$. Predictors and covariates explained 22.6% of the variance in literacy scores and 2.6% of the variance in LE. The indirect pathway to literacy scores from child sex via LE was found to be statistically significant, $z = 2.21$, $p < .05$. Paternal employment also possessed a statistically significant indirect link to literacy scores, $z = 3.63$, $p < .001$. Likewise, the indirect

pathway from mother-father relationship to children's literacy skills was also statistically significant, $z = 4.44, p < .001$.

Lastly, the direct and indirect pathways to math proficiency scores were examined. The overall fit for this model was good. In this model, predictors and covariates explained 22.7% of the variance in math ability scores and 2.6% of the variance in LE. The indirect path from paternal employment to math proficiency via LE was found to be statistically significant, $z = 2.35, p < .05$. The pathway from mother-father relationship was also statistically significant, $z = 5.4, p < .01$.

In the second part of the path analyses (Figure 3), we examined the relationship between predictors of SS at 9 months and socioemotional competence ratings from parents and child care providers at the preschool assessment. The overall model fit for the path analysis examining predictors of parents' competence ratings was good, $X^2(4) = 1.80, p = .8, RMSEA = .00, CFI = 1.00$. The predictors and covariates in this model accounted for 4.5% of the variance in father's SS and 6.1% of the variance in parents' ratings of children's socioemotional competence at preschool. Of our predictors of interest, the mother-father relationship possessed a statistically significant indirect pathway through fathers' SS to children's competence ratings from parents at preschool, $z = 5.04, p < .001$. Upon examining the model of pathways from predictors of fathers' SS to child care providers' ratings of socioemotional competence at preschool, it was found to have good model fit, $X^2(4) = 2.77, p = .60, RMSEA = .00, CFI = 1.00$. Predictors and covariates explained 4.6% of the variance in fathers' SS and 4.8% of the variance in child care providers' ratings of children's socioemotional competence at preschool. The mother-father relationship was a statistically significant predictor of father's SS and child care provider's competence

ratings, $p < .01$. The mother-father relationship also showed a statistically significant indirect pathway through father's SS to child care provider's competence ratings, $z = 3.00, p < .001$.



Figure 3. Conceptual Path Model of Predictors of Father Involvement Socioemotional Support at 9 months and Subsequent Socioemotional Competence in Preschool

CHAPTER 4

DISCUSSION

The results from this study add to the literature regarding what is known about residential fathers and the relationship between their involvement with their children and their children's subsequent academic readiness. In our study, we saw varying degrees of father involvement based on numerous factors. Previous studies have highlighted the relationship between a child's parents as being perhaps one of the most important factors to determining whether or not—or to what extent—a father is involved (and stays involved) in the lives of his children (Fagan et al, 2009; Schacht, Cummings, & Davies, 2009). Our study supports this finding. The mother-father relationship was a significant predictor of father's LE at 9 months and 2 years, as well as his SS at 9 months, even after accounting for several important sociodemographic factors.

The literature also suggests that a father's ability to maintain gainful employment is a determining factor in the ways in which he is involved with his children (Fagan et al, 2009). Interestingly, in our study, paternal employment was only predictive of LE at the initial 9-month assessment, but not when assessed at 2 years. Employment status was also not predictive of SS at 9 months. This finding suggests that early on in the child's life, and perhaps only in more specific circumstances, does a father's ability to maintain employment impact the extent to which he is in the lives of his children. There may be other mitigating circumstances that account for the inconsistent association between paternal employment and father involvement. For example, it might be possible that while some men did not have stable jobs when assessed, they were still able to contribute to the household—and their children's lives—in meaningful ways, such as providing child care and mental/emotional support to their romantic partner. There may be other aspects of the household dynamic—if the family is living with the maternal

grandmother, for example—that might limit the extent to which a father is involved if particular family members feel that he is not contributing “enough” to the wellbeing of his children and those who live in the household.

In past studies, it has been suggested that fathers are differentially involved in the lives of their children based on gender (Clarke-Stewart, 1978; Nugent, 1987; Wachs, Uzgiris, and Hunt, 1971; Yarrow et al., 1984; Greene et al., 2001). These studies suggested that these differences are not so much in the way a father cares for his children, as much as in the types of activities he engages in with them. For example, fathers are generally known to engage in more “rough-and-tumble” play with their male children, while engaging in activities that promote verbal skills in their female children, with more involvement with male children overall. In our study, child sex was a significant predictor of LE at 9 months and 2 years, but not SS at 9 months. These results also suggest that residential fathers were more involved with their female children than with their male children. While these results are contrary to past findings, they may be in line with how the literature conceptualizes the ways in which a father is involved with his different gendered children. For example, this study looked specifically at FI as it pertains to academic and emotional predictors and outcomes. As the literature suggests (Yogman et al., 1977), fathers are likely to be more involved with their female children in these types of pursuits. So while fathers’ tendencies to engage in different activities with their sons versus their daughters was not accounted for in the construction of our variables, the pattern of findings is especially supportive of fathers’ involvement in learning-related activities with their daughters.

When predicting SS, it was noticed that a couple of the sociodemographic variables shared interesting relationships with SS. Namely, there were significant inverse relationships between each maternal age and paternal education with SS. That is to say, advanced maternal

age and paternal education yielded situations in which fathers showed less SS in their involvement with their children. This might be explained by fathers feeling less needed to provide socioemotional guidance with mothers who they perceive as being mature and more capable than younger mothers to speak to the needs of young children and perhaps are less inclined—or asked less frequently—to step in in this particular capacity. More difficult to explain is why paternal education gains yield less socioemotional support. Though it has not been statistically confirmed, it might be that fathers with higher levels of education are also involved with mothers who possess higher levels of education, and the previous scenario of perceiving less need to intervene in this capacity is at work.

In this study, we wanted to know how LE practices were associated with their children's later school readiness performance. We predicted that greater levels of LE activities would be associated with stronger school readiness indicators (Clarke-Stewart, 1980). Indeed, we found that when we examined the relationship between LE at 9 months and subsequent academic readiness indicators as children entered preschool, fathers' involvement was a significant predictor of children's literacy, mathematics, expressive language, and receptive vocabulary outcomes. Thus, more learning encouragement appears to translate to better academic preparedness. Interestingly, when LE at the 2-year assessment was included in the model—controlling for LE at 9 months—three out of the four school readiness indicators were predicted by LE at 2 years (i.e., expressive language was not predicted) and all of the predictive power of the 9-month assessment was lost. So on its own, LE at early stages can have far-reaching effects on children's academic outcomes. But it appears that more accurate readings of the effects of FI can be assessed when measurements are taken closer in time to when outcomes are observed.

This small effect may indicate that other factors not accounted for in our study may be at work, including other aspects of FI not studied here.

While academic aspects of FI and subsequent outcomes are important to explore, so too are ways in which fathers are involved in more socioemotional aspects of his children's lives and the relationship that his socioemotional involvement has to his children's ability to handle the social and emotional demands upon entering a formal school setting. It is important to first point out that LE and SS were modestly correlated ($r = .23$ and $.17$ for LE at 9 months and 2 years, respectively). So while these constructs do share certain aspects (e.g., fathers' learning encouragement efforts likely contain some emotional and prosocial components), they are very different from one another. The results from the present study support past findings: SS at 9 months was a significant predictor of both parents' and child care providers' ratings of children's socioemotional competence upon entering the preschool setting. Children whose fathers were involved in ways that supported social and emotional growth were more likely to be rated as being better adjusted and suited to the preschool environment than children whose fathers were less involved along these dimensions. Although mother involvement is not explored here, this finding makes clear that fathers have unique contributions to key developmental outcomes for their children to be well-adjusted young students.

To corroborate some of our findings, structural equation modeling was used to better conceptualize the relationships among our predictors and their outcomes. Two separate models were constructed: 1) The pathway leading from predictors of LE at 9 months (e.g., child sex, paternal employment, and the mother-father relationship) to LE and subsequent academic readiness outcomes; and 2) The pathway leading from predictors of SS to SS at 9 months and children's subsequent socioemotional competence during the preschool period. Each of the

models constructed exhibited good fit according to accepted fit indices. For the LE model, it would appear that LE accounts for the indirect association between each of our main predictors (e.g., child sex, paternal employment, mother-father relationship) and the school readiness outcomes assessed, except for the association between child gender and math scores. Also, overall it would appear that LE accounts for the indirect relationship between the mother-father relationship and school readiness indicators to a greater extent than any of the other predictors because the mother-father relationship did not directly predict the academic readiness outcomes in the multiple regression models. Thus, the significant indirect pathways in the path analyses suggest that LE fully mediated the association between the mother-father relationship and the academic readiness outcomes.

In the second group of analyses, we examined the indirect path between predictors of SS and children's later socioemotional competence. These analyses indicate that an indirect pathway through SS only exists between the mother-father relationship and children's socioemotional competence. When compared to results from linear regression models with regard to direct pathways leading to children's competence, both the mother-father relationship *and* child sex were significant direct predictors of competence ratings. However, child sex was not a predictor of SS in the multiple regressions, and was thus not included as a direct predictor of SS in the path analyses. Thus, child sex appears to directly predict competence ratings, but this is a pathway that has little to do with fathers' socioemotional involvement with their children, at least at the early age that was assessed. These sets of analyses highlight that FI indeed predicts many child readiness outcomes—and also accounts for indirect associations between other predictors and school readiness (e.g., the mother-child relationship)—and yet leaves much room to account for other forces at work that are not accounted for in these analyses.

The present study has several strengths. First, we were able to use data from one of the largest, nationally-representative datasets that currently exists—the ECLS-B contains over 10,000 children and their families, as well as over 10,000 variables. The richness of this dataset allows many questions to be answered about children and families from all over the country and the results are highly generalizable. Also, one of the aspects about families that is missing from the literature is FI in the broadest sense. With information from over 6,000 residential fathers in the current analyses, this study does much to add to our growing knowledge about fathers and their children. Additionally, previous studies have focused more on fathers of school-aged children (Clarke-Stewart, 1980; Averrett, Gennetian, and Peters, 1996; Greene et al, 2001) while the current study not only adds to what is known about fathers of very young children, but also how these relationships can change across time. This type of study may also highlight some of the mechanisms that can lead to and help to sustain different kinds of father involvement throughout a child’s development.

One of the greatest strengths of this study—the use of the ECLS-B and its vast database of subjects and variables—is also a weakness. With so many variables to choose from, there are seemingly infinite aspects of the data that can be explored. What is presented here is only a smattering of what can ultimately be gleaned from this sample for years to come. While the present study does much to add to the literature on what is known about how fathers are involved in the lives of their children—data that is sorely lacking—there are still limitations that can be discussed.

Measures of LE were constructed based on a past theoretical framework (Lamb 1986; Lamb et al. 1987; Greene et al, 2001) that seemed to fit well with our data. Though the scale we used to measure LE was a brief three-item scale, it still proved to have robust predictive power,

even in this longitudinal study. Similar criticisms can be drawn against measures of children's socioemotional competence. But again, these measures also displayed predictive power over time.

Our study focused on residential fathers and the relationships that they share with their children. Though the ECLS-B is large, data on non-residential fathers was lacking, making it difficult to accurately assess the present constructs of interest from this unique perspective. So while our study cannot speak directly about non-residential fathers, the data examined here can contribute to what we know about fathers and fathering in general, and can perhaps lead to a refinement of questions and procedures used to collect this important data from non-residential fathers. An additional limitation of the present study was the kind of father involvement activities assessed. Here, we focused more on how fathers interact with their children from academic and emotional perspectives. As discussed earlier, this is one reason why we believe we did not see the expected result with regard to fathers being more involved with their male children. A step for the future would be to have other aspects of father involvement assessed that would include some measures of more play-oriented activities to potentially tap into gender differences that might be present. Also, while we did not collect the data for analysis ourselves, and thus had very little control over assessment procedures or the sample itself, much of the information used in our analyses came from fathers themselves which is something rarely done in the past. Having said that, there are still certain measures—like some of the sociodemographic characteristics of the sample—that were obtained from the child's mother that would have been useful to assess from the father, if only from a standpoint of comparison to discern if mothers and fathers see the same situations in different ways.

In speaking about the variables that are associated with father involvement (e.g., paternal employment and the mother-father relationship), it can be said that other forces might be at work that were not accounted for in this study. For example, violence—both within the family and in the environment (e.g. neighborhood) were not assessed. Such a variable could certainly impact a father’s ability and degree of involvement with his children. Therefore, not including such a measure could be seen as a limitation of the study. And while the variables in this study worked well in predicting father involvement and later child outcomes, other samples might not follow the same patterns. So it would be prudent to not extrapolate too generously in assuming that this study could be replicated with other populations, such as those that are at higher risk and that lack residential fathers, without some kind of modification to the constructs used.

Other future directions might include not only including more constructs addressing father involvement, but also looking at father involvement from different theoretical standpoints. The outcomes assessed might also be broadened so that other aspects of children’s developmental trajectories can be assessed. The findings from this study help to illuminate some of the roles that fathers have in the lives of their children and the important impacts that their involvement can make for years into the future. It also helps to give some guidance on things that fathers can do to make their children ready to handle the challenges of the new academic environment at the preschool level. This study may also highlight some of the prevention/intervention steps that can be taken to encourage fathers to be involved with their children at earlier ages given the associations observed between involvement and later academic and social and emotional outcomes. This might take the form of targeted parenting programs for fathers who only engage in the “rough-and-tumble” play with just their male children, or it may involve stressing the need to read to children every day as they develop language abilities.

Perhaps one of the most important things that can be done is educating fathers—and mothers—that children’s early academic success is influenced by both parents, not just mothers. From a public policy standpoint, lawmakers can use this information to encourage the development of programs for children and their fathers who are from at-risk environments and can create incentives and make resources available to promote a greater degree of father involvement and decrease father absenteeism.

APPENDIX

Measures

- FI Learning Encouragement (9 months & 2 years) [Residential Father SAQ]
 - “In a typical week, how often do you do the following things with your child?”
 - A. *Read books to your child?*
 - B. *Tell stories to your child?*
 - C. *Sing songs with your child?*
 - 1 = “*Not at all*”, 2 = “*Once or twice*”, 3 = “*3-6 times*” and 4 = “*Every day*”
- FI Socioemotional Support (9 months) [Residential Father SAQ]
 - “How often do you feel the following ways or do the following things?”
 - A. *You talk a lot about your child to your friends and family*
 - B. *You carry pictures of your child with you wherever you go* (*this item removed from construct)
 - C. *You often find yourself thinking about your child*
 - D. *You think holding and cuddling your child is fun*
 - E. *You think it’s more fun to get your child something new than to get yourself something new*
 - 1 = *All of the time*, 2 = *Some of the time*, 3 = *Rarely*, and 4 = *Never*
- Preschool & Kindergarten Behavioral Scales (PKBS-2) [contained in Parent CAPI]
 - Child volunteers to help others
 - Child comforts other children
 - Child uses a variety of words to describe feelings
 - Child invites other children to play

- Child stands up for other children's rights
- Child tries to understand other children's behavior
- Child makes friends easily
- Preschool & Kindergarten Behavioral Scales (PKBS-2) [from Early Care & Education Provider (ECEP) Interview CAPI]
 - Child comforts other children
 - Child stands up for other children's rights
 - Child tries to understand other children's behavior
 - Child makes friends easily

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ABSTRACT**FATHER INVOLVEMENT AS A PREDICTOR OF PRESCHOOL CHILDREN'S
ACADEMIC READINESS AND SOCIOEMOTIONAL COMPETENCE**

by

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Predictors of father involvement (FI) were examined. Associations between learning encouragement (LE) and socioemotional support (SS) in relation to later school readiness outcomes were examined. A subsample of residential fathers ($n = 6150$) from the ECLS-B was used. Hierarchical linear regressions and conceptual path analysis were used to conduct statistical analyses. Child sex, paternal employment, and the mother-father relationship were significant predictors of LE at 9 months. The mother-father relationship predicted LE at 2 years and SS at 9 months. LE at 9 months was a significant predictor of academic readiness indicators at preschool. LE at 2 years significantly predicted all school readiness indicators except expressive language, after controlling for LE at 9 months. Father SS at 9 months was a significant predictor of socioemotional competence ratings at preschool. Path analyses and associated indirect effects confirmed results from regression analyses of main predictors' association with school readiness outcomes as mediated by LE and SS. Significant indirect pathways leading to each school readiness outcome was found for the main predictors, except for Math scores as predicted by child sex. This study showed support for a theoretical framework for FI, as well as mechanisms that both lead to FI and that are affected by it.

AUTOBIOGRAPHICAL STATEMENT

I was born in Wurzburg, Germany to Nathaniel Goldwire and Marilyn Hall, both on active duty in the U.S. Army. I spent my formative years in Georgia, where both my parents were stationed. I attended high school both at Columbus High School (Georgia; 1997-1998) and Smiths Station High School (Alabama; 1998-2001)—where I graduated as valedictorian. Growing up, I visited my grandparents in Lansing, MI, and always imagined that I would attend either the University of Michigan or Michigan State University. I applied to both these schools and was accepted, but it was ultimately a really great scholarship package from Hope College in Holland, MI, that drew me there, where I graduated Magna Cum Laude (2001-2005). During this time, I got my feet wet conducting research with Hispanic youth in the area with Dr. Lorna Hernandez-Jarvis, exploring their attitudes toward acculturation and bilingualism. After college, I worked for Hope's Admissions Office until I decided what I wanted to do for graduate school (2005-2009). I eventually enrolled at Wayne State University (2009-present) where I am a clinical psychology graduate student with an emphasis on child development. I work in a laboratory with my mentor, Christopher Trentacosta, where I receive lots of hands-on experience in conducting research. Additionally, I administer psychological assessments as well as engage in psychotherapy with patients at the WSU Psychology Clinic. I also have an external placement at the Children's Center of Detroit where I administer psychological assessments to children from the most at-risk populations from around the Detroit Metro area. In July 2012, I defended my master's thesis and I am currently preparing to take my qualifying examination to become a Ph.D. candidate in August. I also conduct research with Dr. Delaney-Black from WSU's Pediatrics program on cocaine-exposed youth. In the next year, I will work with Dr. Barness (WSU) at the Adolescent Medicine Clinic (Children's Hospital) doing therapy with at-risk teens.