

FATHER INVOLVEMENT OVER THE EARLY YEARS AND CHILD
DEVELOPMENTAL OUTCOMES AT PRESCHOOL AND FIFTH GRADE

By

Chang Su

A THESIS

Submitted to

Michigan State University

In partial fulfillment of the requirements

For the degree of

MASTER OF ARTS

Social Science

2011

ABSTRACT

FATHER INVOLVEMENT OVER THE EARLY YEARS AND CHILD DEVELOPMENTAL OUTCOMES AT PRESCHOOL AND FIFTH GRADE

By

Chang Su

The current study examined the direct effects of father involvement in early childhood on father-child relationships in the 5th grade as well as indirect effects (via mediation through preschoolers' sense of security) on father-child relationships in the 5th grade. Likewise, the direct effects of preschoolers' sense of security on 5th grade children's internalizing, externalizing behaviors and bullying experiences as well as indirect effects (via mediation through 5th grade father-child relationships) on child outcomes were examined. This study used secondary data analysis with data from the national Early Head Start Research and Evaluation (EHSRE) Project. Multiple regressions were used to test the three research questions. Early father involvement predicted preschoolers' sense of security and 5th grader-father relationships were related to children's bullying experiences and to externalizing problems. No evidence of mediation was found, and there were no significant relationships between father involvement and 5th grader-father relationships or between preschoolers' sense of security and father-relationships and child outcomes in the 5th grade. Fathers are influential in their children's social development, not only in early childhood, but also in adolescence.

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation and gratitude to Drs. Brophy-Herb, Vallotton and Qin in my Thesis Committee. Their advising me in Thesis project and supporting me in such tight time frame are tremendously help for me and their constructive comments are moving me forward not only in Thesis writing but also in further professional development. I thank them all for guiding me through this challenging process and encouraging me with all their considerate thoughts and academically motherly love.

TABLE OF CONTENTS

LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
CHAPTER I INTRODUCTION.....	1
Statement of Problem.....	2
Significance of the Present Study.....	3
Hypotheses.....	7
Conceptual Model.....	7
Conceptual and Operational Definitions.....	10
CHAPTER II REVIEW OF THE LITERATURE.....	14
History of Research in Father Involvement.....	14
The Importance of Father Involvement.....	14
Definitions, Processes and Theorizing Father Involvement.....	15
Longitudinal Father Study.....	16
Effects of Father Involvement.....	17
CHAPTER III METHOD.....	23
Recruitment.....	23
Sample Descriptions.....	23
Data Collection Procedure.....	24
Measurements.....	26
Quality of Father Involvement Measures.....	26
Child Outcome Measures.....	28
Covariate Measures.....	31
Data Analysis Plan	31
Missing Data	33
CHAPTER IV STUDY FINDINGS.....	35
Preliminary Analysis.....	35
Regression Models.....	36
Regression Models for Hypothesis 1	40
Regression Models for Hypothesis 2	44
Regression Models for Hypothesis 3.....	45
Summary.....	48
Post-Hoc Analyses.....	48
CHAPTER V DISCUSSION AND CONCLUSION.....	50
Findings.....	50
Summary.....	60
Strengths.....	60
Limitations.....	61
Implications.....	62
Future Directions.....	62
APPENDICES.....	65

TABLE OF CONTENTS

BIBLIOGRAPHY.....	76
-------------------	----

LIST OF TABLES

Table 1.1 Barron and Kenny (1986) Method for Testing Mediation.....	33
Table 1.2 Sample Size for Each Measure.....	34
Table 1.3 Overview of Multiple Regression Models for Each Hypothesis Testing.....	38
Table 1.4 Overview of Hypothesis Testing.....	42
Table 1.5 Mediation Step for Hypothesis 2.....	44
Table 1.6 Mediation Step for Hypothesis 3.....	46
Table 2.1 Description of Sample.....	66
Table 2.2 Description for All Variables	67
Table 2.3 Correlations for All Variables.....	68
Table 2.4 Regression Model: Father Involvement → TPK Sense of Security.....	70
Table 2.5 Regression Model: Supportiveness of Father Involvement → G5 Father-Child Relationship.....	71
Table 2.6 Regression Model: Play/Caregiving Activities in Father Involvement → G5 Father-Child Relationship.....	72
Table 2.7 Regression Model: TPK Sense of Security → G5 Father-Child Relationship.....	73
Table 2.8 Regression Model: G5 Father-child Relationship → G5 Outcomes.....	74
Table 2.9 Post-hoc Analysis for Hypothesis 1.....	75

LIST OF FIGURES

Figure 1. Conceptual Model Figure	10
---	----

Chapter I Introduction

Research over the past three decades has increasingly focused on the effects of father involvement in promoting children's developmental outcomes. Three components of father involvement have been presented by Lamb, Pleck, Charnov, and Levine (1987) and Lamb (2000). These include accessibility of the father, involvement of the father in shared interaction in caregiving or play activities, and fathers' responsibilities in fundamental childcare. Among these three dimensions, father involvement in caregiving and play activities, the focus of the current study, is related to the frequency of father-child activities and to the quality of father-child interactions during these activities. While some studies have focused on the effects of father involvement as it relates to infants' cognitive development (Yogman, Kindlon, & Earls, 1995), preschoolers' school readiness (Downer & Mendez, 2005), and adolescents' prosocial behavior (Flouri, 2008), we know little about the longitudinal effects of father involvement over time, particularly among low-income populations. However, father involvement may not only promote children's development directly, but also indirectly through the security of the father-child relationship that close father-child involvement would be expected to promote.

The current study utilizes data from the national Early Head Start Research and Evaluation (EHSRE) project (Love et al., 2005). Data were collected from primary caregivers and their children near children's 14th month, 24th month, 36th month birthdays, at children's transition to kindergarten (age 54 months), and in the 5th grade. This study utilizes additional father-child data from children's 36-month assessment, at the transition from

preschool to kindergarten (TPK), and at the 5th grade assessment to examine father involvement in early childhood (the 36 month and TPK assessments) and child outcomes at the end of the preschool period (sense of security) and at 5th grade (bullying experiences, internalizing and externalizing problems).

Organization of the Chapter

The current study, then, examines the role of father involvement in children's social-emotional outcomes. In this chapter, the statement of problem addresses the lack of research in current literature. A rationale for the study is presented as are the research questions and hypotheses. Then, the conceptual model is presented and discussed. Finally, conceptual and operational definitions of key study variables are identified.

Statement of Problem

The research on the effects of father involvement on children's developmental competencies is still in its infancy. First, most studies have used cross-sectional data (e.g., Flouri & Buchanan, 2003; Yogman, et al, 1995) but few studies of the effects of father involvement on children's outcomes have taken a longitudinal perspective. Second, most research to date has examined the effects of father presence or absence on child developmental outcomes (e.g., Carlson, 2006; Sedlak & Broadhurst, 1996). However, important elements of fathering also include the frequencies of father involvement in caregiving activities (e.g., Deutsch, Servis, & Payne, 2001) and the effects of quality of involvement (Cabrera, Shannon, & Tamis-LeMonda, 2007; Kazura, 2000; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004) on children's outcomes. Third, most existing studies of

father involvement have examined the effects of involved fathers in infancy on outcomes such as infants' cognitive skills (Yogman, et al, 1995) or in adolescents' outcomes, such as psychological adjustment (Flouri, 2008). However, little research has examined the effects of father involvement on children's social-emotional outcomes at transitional stages of development at the transition from preschool to kindergarten, and the transition from elementary school to middle school (e.g., 5th grade).

Significance of This Study

This current study is the first father involvement study which examines the long term effects of the quantity and quality of father involvement as mediated by children's relationships with their fathers on children's social-emotional and cognitive outcomes at 5th grade.

Quality of Father Involvement. Previous father studies have looked at either the effects of father presence and absence (Mackey & Immerman, 2004; Sorenson & Zibman, 2001) or the amount of time and frequency of father involvement on children's development. However, the quality of fathers' time with their children is likely more influential on their children's outcomes than presence/absence or frequency of contact alone. Particularly, the eye contact, mutual attention, physical touch, and the supportiveness which fathers demonstrate during play activities and interactions, contribute to the father-child relationship, a key context for development (Kazura, 2000).

In addition to existing literatures focusing on father presence, this present study takes further step to examine the *quality* of father involvement, which includes father's interactions

and activities with their three-year-olds. Then at the end of the preschool period, children's sense of security was examined to see how father involvement at early childhood contributes to sense of security during this transition to kindergarten. We also take a further step considering previous father involvement in early childhood and preschool age as well as the sense of security achieved at preschool could contribute to father-child relationship, child's social-emotional competencies and protect children from peer bullying experience (Eliot & Cornell, 2009; Flouri & Buchanan, 2003). Insecure parent-child attachment contributes to bullying behaviors at 6th grade (Eliot & Cornell, 2009), but father involvement could protect adolescents from bullying experiences (Flouri & Buchanan, 2003).

Long-Term Effects of Father Involvement. Prior studies have shown the positive effects of father involvement on children's outcomes. For example, father involvement is related to children emotional regulation at 24 months of age and cognitive skills across 24th months, 36th months and 64th months (Cabrera, et al., 2007). Similarly, father involvement in infancy and toddlerhood has been linked with low income children's cognitive and language development at 24th months and 36th months of age (Tamis-LeMonda, et al, 2004). Additionally, the father-child relationship and attachment, likely supported by high quality father-involvement, lay the foundation in early childhood for children's later sense of security and developmental competencies, such as peer bullying and prosocial behaviors (Flouri & Buchanan, 2003; Flouri, 2008), internalizing problems and externalizing problems (Carlson, 2006). In Flouri and Buchanan's study (2003), adolescents from 14 to 18 years old in United Kingdom were asked whether they have been bullies and how their relationship was with

their fathers and mothers. The population of this study was a relatively low-income population because the proportion of unemployed people in family of reported by the participants was lower than the average proportion of unemployed people in UK. The results showed that adolescents' bullying behaviors were significantly associated with low levels of father involvement and mother involvement, and the closeness of mother- child relationship moderated the protective effect of father involvement on bullying behavior (Flouri & Buchanan, 2003). Another Flouri and Buchanan study showed the evidence that father involvement could protect children from victimization as a buffer effect (Flouri & Buchanan, 2002).

Preschoolers' Sense of Security. "A sense of security is derived from the maintenance of a bond in which confidence in the availability (accessibility and responsiveness) of the attachment figure(s) predominates over fears concerning unavailability of this figure (s) in times of need" (Armsden & Greenberg, 1987, p. 428). In Bowlby's (1973) model, the child with a strong sense of security has an "unconscious assurance" relating him/herself to others who are reliable and helpful, and also perceive him/herself as being loved and more likely to have self-reliance and explore the world for promoting capabilities (Armsden & Greenberg, 1987; Bowlby, 1973). Sense of security is core all through the life span, and also impacts developmental skills in the long term. Preschool age children experience the transition from family activities and interactions to school environment, where they will have new adventure to develop new relationships with peers and with teachers. Therefore, it is important to know whether and how father involvement at early childhood and preschool is related to

preschoolers' sense of security. As indicated in Kazura's study (2000), play contributes to better father-child relationships. These two studies showed that father involvement is related to attachment security, but they only measured this effect at a single time point in early childhood. Father involvement in early childhood might also influence the father-child relationship and sense of security in later stages, for example at the juncture of transitioning from family environment to school environment at the transition to kindergarten, and at the time before entering middle school. Moreover, the sense of security derived from early childhood could be maintained during transition to kindergarten, which may further contribute to father-child relationship in later elementary years at 5th grade and further influencing social-emotional competencies and peer bullying experiences at 5th grade.

Father-Child Relationship and Child Social-Behavioral Problems at 5th Grade.

Children who are transitioning to adolescence are also at a significant developmental juncture. During this period, both parent (Collins & Russell, 1991) and peer relationships (e.g., Parker & Asher, 1993) are influential on children's development. As a result, the strong father-child relationship does not only advance children's social-emotional competencies but also protects children from being involved in bullying experiences and peer victimization (e.g., Flouri & Buchanan, 2002 & 2003).

In conclusion, the current study findings will not only contribute to the father studies in early childhood, but also make a particular important contribution to longitudinal father study as well as add novel findings of child developmental outcomes in early childhood and in middle childhood.

Research Questions & Hypotheses

This study addresses the following research questions and hypotheses.

- i) Does father involvement at 36th month and time transitioning from preschool to kindergarten relate to preschoolers' sense of security at the end of the preschool period?

Hypothesis: Father Involvement over early childhood is related to child sense of security at the end of the preschool period.

- ii) Does early father involvement relate to children's perceptions of relationship quality with their fathers in 5th grade both directly and indirectly through the child's sense of security at the end of the preschool period?

Hypothesis: There are both direct effects of early father involvement and indirect effects of father involvement through (mediated by) the preschoolers' sense of security on the child's perception of father-child relationship.

- iii) Does sense of security both directly and indirectly through the 5th graders' perception of father-child relationship quality relate to social-emotional outcomes at 5th grade?

Hypothesis: There are both direct effects and indirect effects of sense of security through quality of relationship on 5th graders' social-emotional outcomes.

Conceptual Model

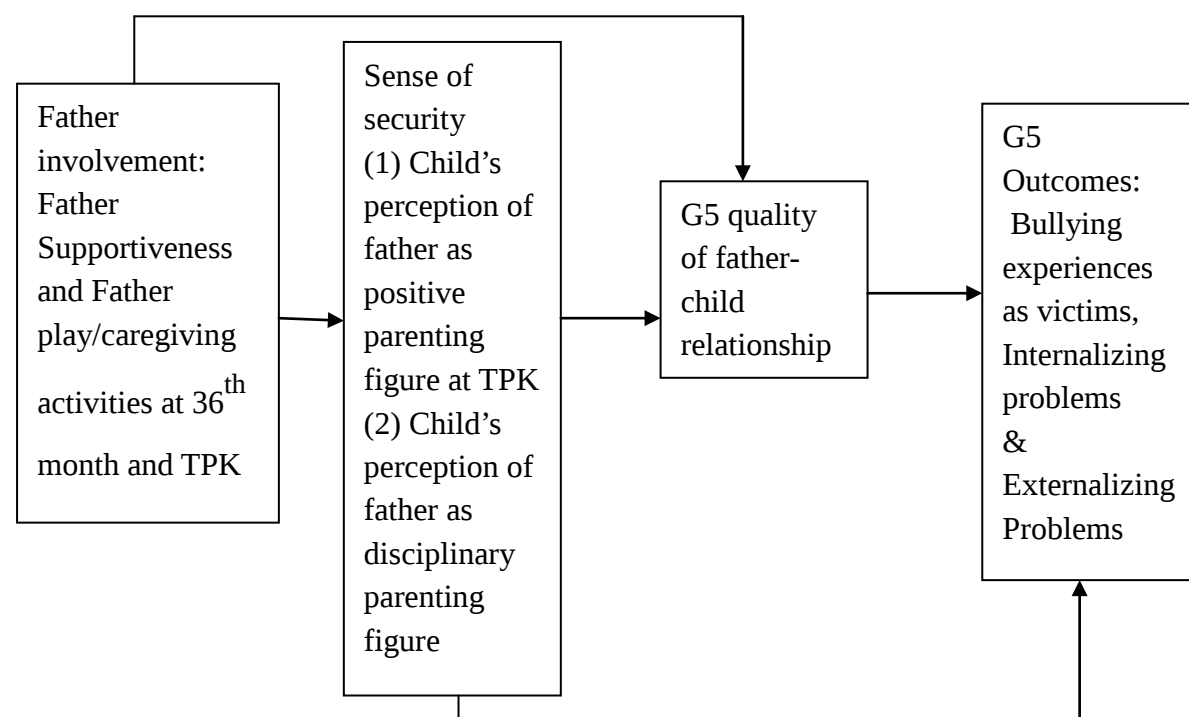
In recent years, father involvement has been of increasing interest to researchers and has gained its momentum as an influential factor for child developmental outcomes (e.g., Cabrera, et al., 2007; Flouri & Buchanan, 2002 & 2003; Tamis-LeMonda, et al., 2004). Young children

with quality father involvement are found to demonstrate stronger developmental competencies, such as fathers' supportiveness observed during videotaped semi-structured play contributes to child's language and cognitive development across age from 24 month to 64 month (pre-Kindergarten). It appears that positive father-child interactions at early stages of development play an important role in child's outcomes at the transition between preschool and kindergarten.

Paquette (2004) theorized that the relationship bonds between father and child are established during father-child play activities. Moreover, Paquette used "father-child activation relationship" (Paquette, 2004, p. 202) as equivalent to attachment bond according to Bowlby's (1969) attachment theory. Similar to attachment, father-child activation relationship helps children explore the outside world to meet their basic needs and be protected from dangers (Paquette, 2004). According to Grossmann and his colleagues' study (2002), fathers' sensitivity during play activities with their toddlers was strongly related with father-child attachment representation in later years at 10 and 16 years old (Grossmann, et al., 2002). As theorized by Bowlby (1973), children develop an "internal working model" of the father-child relationship that has "generalized attachment representations" (Bowlby, 1973), which further develop and stabilize the security of the attachment. The repeated experiences with caregivers were internalized and linked to the expectations and memories of how the child related with the attachment figures (Bowlby, 1969). Father involvement at the transitional period between preschool and kindergarten may serve as a stronger secure base for children to transit from home environment to school environment to reach out meeting

peers and experiencing adventures in the new situations. Children with this securely attached relationship have more positive social-emotional outcomes as compared to children who do not have such relationships (Newland, Coyl, & Chen, 2010). However, conflicting parent-child relationships (Finnegan, Hodges, & Perry, 1998) lead to child victimization among peers. Furthermore, quality involved father directly and indirectly through the sense of security in the late preschool period influence the child's perceptions of the father-child relationship. The child's sense of security, as displayed in Figure 1, may not only have a direct effect on children's perceptions of father-child relationships, but may also indirectly influence 5th graders' social-emotional functioning. Moreover, the secure base developed from the accumulated positive effects of previous father involvement may not only make children feel secure and confident while attaining social-emotional competencies but may also serve as a protective factor in keeping school-aged children from victimization. Lower father involvement might give rise to a higher possibility of being involved in peer bullying experiences (Flouri & Buchanan, 2003), but higher father involvement protects children from being bullied by peers (Flouri & Buchanan, 2002). Therefore, we hypothesized that high quality father involvement in early childhood (likely a proxy for secure attachment) promotes the child's the sense of security and influences father-child relationships in later years, such as 5th grade in the current study. A conceptual model is presented below including early father involvement, preschooler's sense of security, 5th graders' relationships with their fathers and 5th graders' social-emotional outcomes.

Figure 1. Conceptual Model Figure:



Conceptual and Operational Definitions

Father Involvement.

Three components of father involvement (Lamb, et al., 1987; Lamb, 2000) include father's accessibility, related with father's presence and availability; father's responsibility, referring to father's meeting child's financial and developmental needs; father involvement in shared interactions of care-taking or play activities. Among these three components of father involvement, the last component especially hinges on the processes of father-child activities and interactions, where father-child's attachment relationship is establishing. Therefore, this involvement dimension will be the focus of current study on how quality father involvement contributes to child's developmental outcomes at the transition to kindergarten and 5th grade.

In current study, father involvement with three year olds was measured in "Parent Behavior during Parent-Child Semi-structured Play" (Brady-Smith, Ryan, Berlin, Brooks-

Gunn, & Fuligni, 2001), where observations were videotaped and coded to assess parent supportiveness (the composite of parental sensitivity, cognitive stimulation, and positive regard in the task). Another latent component will be frequencies that fathers were involved in play/caregiving; this composite score was drawn from Father Interview conducted at 36th month and at transition to kindergarten (TPK). Both quality involvement and play/caregiving were measured at 3 years old and 5 years old.

Sense of Security at TPK.

John Bowlby believed that “a child’s ongoing experience with a primary caregiver resulted in the development of an internal working model of that relationship” (Bowlby, 1973, pp. 322-323). Internal working model, related to a form of representation of relationship with caregiver, narratives reflect this representation (Emde, Wolf, & Oppenheim, 2003).

In present study, MacArthur Story Stem Battery (MSSB) was used to measure child’s sense of security (Bretherton, Oppenheim, Buchsbaum, Emde, & the MacArthur Narrative Group, 1990). The MSSB is a narrative technique in which the interviewer started a story and encouraged the focus child to complete story telling in a variety stressful family contexts. For example, parents argued about who lost the key and the target child was asked to finish this story. Child’s responses to each scenario were videotaped and coded to achieve the content themes and internal representations of parent-child relationships. Child’s perception of father as positive parenting figure and child’s perception of father as disciplinary parenting figure were derived from child’s narratives representing parent/father-child relationship. Child’s sense of security could be discerned through child’s representation of parent/father in the

narratives (Bascoe, Davies, Sturge-Apple, & Cummings, 2009).

Child's Perceptions of Father-child Relationships at 5th grade.

Australian Self-Description Questionnaire SDQ-I was designed to measure multidimensional aspects including three areas of academic self-concept and four perspectives of nonacademic self-concept including physical ability, physical appearance, peer relations, and parent relations in preadolescence, particularly the age and sex effects on these aspects in this developmental stage (Marsh, 1989, 1990, 1994; Craven, Marsh, & Debus, 1991). Questionnaire I (Marsh, 1988, 1990) (SDQ-I) was used to assess academic and non-academic dimensions of preadolescents. In the non-academic scales, Parent Relationships was included, which was “defined by responses to the 8 positively worded items” (Marsh, Craven, & Debus, 1991). Children were asked about the relationship with father on an 8-item Scale drawn from ECLS-K SDQ Parent Relationship Scale. Children responded to the eight items such as “My father understands me” on a 4-point scale from 1 to 4, the higher the score is, the better the relationship is (West, et al., 2010).

Children's Peer Bullying Experiences at 5th Grade.

Bullying is an aggressive behavior and abusing power among peers at different developmental stages (Juvonen and Graham, 2001; Olweus, 1991). In bullying experiences, there are victims, bullies, and victim-bullies in terms of differential power, but this experience has negative physical and emotional impacts on all children involved. Bullying is “a form of social interaction in which a more dominant individual (the bully) exhibits aggressive behavior which is intended to and does, in fact, cause distress to a less dominant individual

(the victim)” (Stephenson & Smith, 1989).

In current study, 4-item Panel Study of Income Dynamics-Child Development Supplement, Wave 2 (PSID-CDS2) Bullying Scale was used for children to self-report how often they were bullied from 1 never to 4 many times in the past months. Responses were summed cross the 4 items (West, et al., 2010).

Children’s Socio-Emotional Functioning at 5th Grade.

The concept of social-emotional functioning include two layers of meaning, 1) behavior problems, specifically internalizing behavioral problems and externalizing behavioral problems; 2) emotional problems, such as anxiety and depression. In this study, Child Behavior Checklist for 6-18 Year Old Children (Achenbach and Rescorla, 2001) reported by parents about child behavioral and emotional problems. The sums of raw scores were calculated for each subscale. Parents responded on a scale ranging from 0 (not true) to 2 (very true) (West, et al., 2010).

Chapter II Literature Review

History of Research in Father Involvement

Most previous studies have focused on the effects of father absence and presence on child outcomes. The limited financial resources that stem from father absence resulted in child poverty (Sorenson & Zibman, 2001) and father absence has also been linked to youths' substance abuse (Bronte-Tinkew, Moore, Capps, & Zaff, 2006), juvenile delinquency (Bush, Mullis, & Mullis, 2000), teen pregnancy (Quinlan, 2003; Teachman, 2004), and to youth drug and alcohol abuse (Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Hoffman, 2002). The presence of father has been shown to contribute to adolescents' having fewer behavioral problems (Carlson, 2006), and to prevent young males from engaging in violence (Mackey & Immerman, 2004). However, the existing literature has not thoroughly examined the effect of father involvement on child social-emotional and cognitive outcomes.

The Importance of Father Involvement

It is of great importance to study father involvement, which contributes to children's developmental competencies in early childhood (e.g., Cabrera, et al., 2007; Tamis-LeMonda, et al., 2004) and in school age (e.g., Nord & West, 2001; McBride, Schoppe-Sullivan, & Ho, 2005). Moreover, fathers' emotional investment is a critical factor to children's academic achievement (Cabrera, et al., 2007; Hawkins, Amato, & King, 2007) and social-emotional competencies (e.g., Kelley, Smith, Green, Berndt, & Rogers, 1998; Shannon, Tamis-LeMonda, & Cabrera, 2006).

As Tamis-LeMonda and Cabrera (1999) reviewed Lamb and his colleagues' framework

of involvement (1987):

A father's engagement with his child will likely exert a direct influence on development, fathers like mothers, establish an important attachment relationship with the child. They directly offer advice, information, guidance, and emotional and intellectual support, thereby inculcating knowledge, self-esteem, and a sense of security in children (p. 9).

Father's engagement in Tamis-LeMonda and Cabrera's review (1999) is termed as father involvement in present study. According to their review, closeness, security, and confidence in the relationship will enhance the overall attachment relationship. During the close contact and positive interactions, the child learns and internalizes the information, knowledge, and problem solving strategies either in daily routines or in symbolic play. The sense of security demonstrated by the child reflects a secure attachment, which was promoted by father involvement.

Definitions, Processes and Theorizing Father Involvement

Lamb and his colleagues delineated three key dimensions of father involvement (Lamb, et al., 1987; Lamb, 2000): accessibility, which is related to the father's presence and availability and responsibility, which refers to the father's meeting child's financial and developmental needs, father involvement in shared interactions in care-taking or play.

Among these three components of father involvement, the third dimension especially hinges on the process of father-child activities and interactions, in which father-child attachment could be established (Paquette, 2004). Research has shown that father child play

is an important form of involvement. For example, in Kazura's study (2000), play was found to be a contributor to father-child relationships, and to the father-child secure attachment in early childhood. Another father involvement study conducted in Finland also took into considerations the physical activities with preschool age children (Halme, Astedt-Kurki, & Tarkka, 2009).

This current study will focus on the dimension of father involvement in play and caregiving activities. The father-child activities have been considered an important measure assessing the quality of father involvement in early childhood. Also the quantity interaction and frequency of involvement will be treated as two components of father involvement in the present study.

Longitudinal Father Study

Most recently, researchers have begun examine how involved fathers in low-income populations contribute to their children's cognitive achievement (Cabrera, et al., 2007; Tamis-LeMonda, et al., 2004) and development of social-emotional functioning (Cabrera, et al., 2006; Kelley, et al, 1998; Shannon, et al., 2006). There is limited research focusing on longitudinal father effects on children's outcomes. One example was conducted by Cabrera and her colleges (2007) on the topic of fathers' supportiveness associated with child's language and cognitive development from 24 months to 64 months (pre-Kindergarten) (Cabrera, et al., 2007). This two-time-point study demonstrated that father involvement has a long-term effect across early childhood and preschool age; this study which laid a foundation for longitudinal father studies and the effect of fathers in later childhood.

Based upon the evident effects of father involvement in those cross-sectional studies and Cabrera and her colleagues' longitudinal study (2007), the further research is needed and is helpful for researchers, practitioners and parents to understand how father involvement in early childhood is related to children's later outcomes and what the effects of involved fathers might have on these outcomes during transitional periods at the beginning of elementary school and during late elementary school age. Compared to cognitive abilities achieved in preschool and school age, it is also critical to understand how children attain the sense of security at transition to preschool as well as how children develop social-emotional competencies.

Effects of Father Involvement

Father involvement in early childhood. The current study is informed by important findings on the effects of father involvement in early childhood from previous studies. Research shows that father involvement has effects on child's social and emotional development at 2 and 3 years as well as on child's social and communicative behaviors (Kelley, et al, 1998; Shannon, et al., 2006). Fathers' supportiveness during videotaped semi-structured free play contributes to child's emotional regulation at 24 months (Cabrera, et al., 2007). In a two-time-point longitudinal study, low-income fathers' involvement had positive effects on child's language and cognitive development when children were 24 months and 36 months of age and when they were preparing to transition to kindergarten (Cabrera, et al., 2007; Tamis-LeMonda, et al., 2004).

Father involvement at preschool age. Compared to the number of studies conducted in

early childhood, research that focuses on the transition to preschool is quite underrepresented.

One study shows that African American fathers' child care involvement contributes to children's self-regulation and school readiness in the late preschool period (Downer & Mendez, 2005). Also, fathers' supportiveness contributes to child's language and cognitive development from 24 months to 64 months (pre-K) (Cabrera, et al., 2007). In addition to academic achievement, father contributed to preschoolers' emotional regulation (Cabrera, et al., 2006).

However, the relation between father involvement in early childhood and preschoolers' sense of security has not been studied. Previous studies about attachment security have found that marital quality is related to attachment security for preschoolers (e.g., Frosch, Mangelsdorf, & McHale, 2000).

Preschoolers' attachment security and child social-emotional outcomes. Attachment security is not only related with previous paternal involvement but also contributes to later outcomes. For example, preschoolers with secure attachment tend to perceived more social support, which is positively related with prosocial behaviors rather than aggressive behaviors. Children with insecure-avoidant attachment (at 4.5 years old) reported more behavior problems than children who were securely attached with their parents and parents of insecure-avoidant children reported internalizing problems two years later (Anan & Barnett, 1999). These findings suggest that children with secure attachments to their parents tended to develop positive behaviors in early elementary school. However, this has not been tested at a much later time point, such as 5th grade. Whether preschoolers' sense of security could also

contribute to 5th graders' social-emotional outcomes is still understudied.

Gaps in literature of preschoolers' outcomes. Most of previous research on preschoolers' attachment security has examined how attachment security was related with maternal effect, such as maternal report of stress and mother-child interaction were mediating mother-child attachment and preschool age child's adaptation (Moss, Rousseau, Parent, St-Laurent, & Saintonge, 1998). Security is significantly related with temperament, and both attachment security and temperament explained the quality of peer relationships in preschool (Szewczyk-Sokolowski, Bost, & Wainwright, 2005). Additionally, even though a few studies have considered paternal effect, the outcomes are not about security, but other social-behavioral outcomes. For example, research has found that fathers' behavioral problems are related to child's internalizing and externalizing problems (Schacht, Cummings, & Davies, 2009), and child temperament is associated with father involvement (McBride, Schoppe, & Rane, 2002). Not much has been studied on the relations between previous father involvement and preschoolers' sense of secure father-child relationship. This present study examined how father involvement in early years related to child's sense of security at TPK by using MacArthur Story Stem Battery (MSSB), which serves as a more comprehensive measure of child's representation of father's parenting figure compared to interviews and questionnaires (Robinson, 2007) and also an effective measure on child's sense of security by measuring parent/father-child representation (Bascoe, et al., 2009) which was derived from child's narratives at a relatively older stage.

Father (Parent)-Child Relation and Social-Emotional Outcomes in Late Elementary

School

Among current father studies, most research examines either early child development (e.g., Cabrera, et al., 2007) or adolescents' functioning (Carlson, 2006). Not much research has specifically been focused on middle childhood, such as 5th grade, when preadolescents are transitioning from elementary school to middle school, from middle childhood to puberty. In the existing literature, the studies available are about the associations between parent-child relationship and child's social, behavioral, and emotional problems at kindergartner or in adolescence. For example, conflicting parent-child relationship might result in peer victimization (Finnegan, et al., 1998).

Father-child relationship and child social-emotional outcomes. Even though there is limited research on child social-emotional outcomes at later elementary age, evidence of father-child relationship contributing to child social-emotional outcomes could also be drawn from the many adolescent-parent relationship studies. Higher level of parent-to-child hostility was more related to boy's internalizing and externalizing problems (Gordis, Margolin, & John, 2001). Nonresident father-child shared activities, interactions, and sense of intimacy were associated with adolescents' externalized and internalized well-being and academic attainment (Hawkins, et al., 2007). In addition to the child's internalizing and externalizing problems, other developmental outcomes were found to be related with father-child relationship. The parent-child relationship is related to children's adjustment problems and social and psychological development during adolescence (e.g., Booth, Johnson, Granger, Crouter, & McHale, 2003). Another study found that the quality of parent-child (6 to 18 years

old) relationship has a negative association with testosterone-related adjustment problems, such as risk-taking behavior and depressive symptoms (Booth, et al., 2003). All these findings lend support to the current study that father-child relationship does influence child's social-emotional outcomes in adolescence, but whether this holds true for preadolescents in later elementary school is yet to be seen. The present research will examine the relation between child's perception of their relationship with father and child's social-emotional outcomes, specifically internalizing problems and externalizing problems at 5th grade.

Father-child relationship and child bullying experiences. Another aspect of child outcome which could be related with father involvement and father-child relationship is peer bullying. A British study found that low father involvement leads to adolescents' bullying behaviors and peer victimization (Flouri & Buchanan, 2002 & 2003). Most studies on peer bullying and victimizations focused on peer influences and school environment (Estell, Farmer, Irvin, Crowther, Akos, & Boudah, 2009). For example, students with aggression and perceived-popularity are more likely to be a bully, while students with social isolation from others have higher likelihood to be bullied (Estell, et al., 2009). One study about mother-child relationship found that mother-child interaction is related with peer victimization– boys tend to be more likely to be bullied with an overprotective mother, and girls had higher possibility of being victims if their mothers behaved aggressively in coping with child-mother conflict (Finnegan, et al., 1998). However, limited research has discussed how father-child relationship could be related with peer victimization and how fathers could serve as protectors to keep middle childhood children from such negative experiences.

Gaps in literature on child outcomes in middle childhood. Previous research of 5th graders' outcomes has focused more on their school performance, such as spatial ability and geometric ability (Xu & Shi, 1992), reading problems (González, Ciuffreda, Hernandez, & Escalante, 2008), and visual-motor skills and psycholinguistic abilities (Duffy, Clair, Egeland, Dinello, 1972). A few studies have also examined 5th graders' self-esteem, particularly related to the effect of play therapy (Post, 1999). However, the effects of father were not considered in those studies. How father involvement at prior stages could contribute to developmental functioning at 5th grade and how father-child relationship is related with 5th graders' social-emotional outcomes is quite understudied. Children at 5th grade are facing a key juncture as they approach puberty and the beginning of middle school. The current study will take a step in examining how previous father involvement and concurrent father-child relationship relate with 5th graders' social emotional outcomes and also peer bullying experiences.

Chapter III Research Method

In this chapter, the sample recruitment, sample descriptions, data collection procedures measurements, and data analysis plan are presented.

Recruitment

The data used in current study come from an existing dataset drawn from Early Head Start Research and Evaluation (EHSRE) Project (Love, et al., 2005). Seventeen research sites both in rural and urban areas participated in the national evaluation of Early Head Start (EHS). Recruitment criteria were such that participants' family income had to fall at or below the poverty level. At least 10% of participants came from families with disabled children and up to 10% of families might be above poverty level. A total of 3,001 families were recruited across 17 EHS programs. They were randomly assigned either to the EHS program group ($n = 1,513$), who received Early Head Start services, or to a comparison group ($n = 1,488$), who did not receive Early Head Start services, but were free to access other community services (Love, et al., 2002; Love, et al., 2005). Data collection in the EHSRE occurred at the time of enrollment (when children were younger than 12 months), and subsequently at children's 14 month, and birthdays of 24 month and 36 month, during the late preschool period as children prepared to entered kindergarten, and when children were in the 5th grade. In the current study, data from the 36 month assessment, the transition to kindergarten (TPK) assessment, and the Grade 5 assessment are utilized.

Sample Descriptions

In current study, we selected cases ($N = 431$) in which the same fathers participated in

data collection at both the 36th month assessment and at the TPK assessment. Among the participants, 52% of the selected children were in the EHS program group ($n = 224$), and 48% ($n = 207$) were in comparison group.

At TPK assessment, child were 5 years and 9 months on average ($M = 68.96$ months old, $SD = 4.96$), fathers were almost 33 years old on average ($M = 32.78$ years old, $SD = 8.19$), with an average of 12 years of education ($M = 12.04$, $SD = 3.24$). Father type included residential biological fathers ($n = 309$, 71.7%), nonresidential biological father ($n = 51$, 11.8%), residential father figure ($n = 60$, 13.9%), and nonresidential father figure ($n = 11$, 2.6%). Regarding father and mother relationship, 349 (81%) participating fathers were living together with the focus child's mother, 53 (12.3%) were not living with the child's mother but the two parents were seeing each other, and 27 (6.3%) were not living with child's mother, and the two parents were seeing each other less than once a week. The majority of fathers in current study were White ($n = 219$, 50.8%), followed by Hispanic ($n = 91$, 21.1%) and Black ($n = 79$, 18.3). Most fathers were currently employed ($n = 350$, 82.2%), 44 were currently in school (10.2%), 28 were unemployed and not in school (6.5%), 27 were looking for work (6.3%), 16 were currently laid off (3.7%), and 16 were keeping house (3.7%) (See Table 2.1 in Appendices).

Data Collection Procedure

EHSRE data collection. Sample enrollment and random assignment started in July 1996 and was completed in September 1998. In 16 out of 17 research sites, data collection field staff were employed by local research teams under subcontract to Mathematica Policy

Research, Inc. (MPR) for data collection and monitoring the quality of data (one was collected by MPR itself). Staff with training and certified reliability collected data from families (N =3,001) on child developmental outcomes near the children's 14th month, 24th month, and 36th month birthdays, transition to kindergarten, and in the 5th Grade (Love, et al., 2002; Love, et al., 2005); the latter three of these waves are the major time points considered in current study.

In the spring of child's 5th grade year in school, the fifth wave of data collection was conducted. Three rounds of 5th grade data collection were conducted in the spring of 2007, 2008, and 2009 as each group of children reached 5th grade (West, et al., 2010).

In the 5th grade follow-up study, 2,701 out of 3,001 original children became the eligible sample. Prior to the start of data collection it was projected to complete 1,890 cases to achieve a response rate of 70 percent in the 5th grade follow-up data collection (West, et al., 2010).

Data collection in the 5th grade follow-up study was conducted during home visits. Families received a mailed letter before a home visit and the mailing address was found with the help of the locating department at Mathematica who used the Accurint system. After the most current addresses were found by Accurint system, the letter was sent out to the respondent entailing the purpose of 5th grade follow-up study and information of the home visit. The parents who participated in this follow-up study received \$30 and each child participant received \$10. Staff started contacting families for home visits schedule in the first weeks of each round (February of 2007, 2008, and 2009) of G5 data collection. The schedule

of home visits were either on weeknights or at weekends, so that the observations of child's completing homework and child's involved in other activities took place (West, et al., 2010). Home visits data collection included in order: direct child assessment, child interview, webcam recording of parent-child interaction, parent interview, and home observation. Respondents to parent interview included 89.46% biological mothers, 3.58% biological fathers and 6.97% other adults. It took an average of 3 to 3.5 hours to complete home visits, which included specifically child assessment battery 70-80 minutes, child interview 10 minutes, parent-child interaction 15 minutes, and parent interview 55 minutes. During the overall home visits, home observation was conducted by the home visitor, and another 5 minutes neighborhood observation was also included. Parents in the parent interview were asked about child's developmental characteristics including social skills and problem behaviors.

Data collections of father sub-study. Among 17 research sites, 12 sites collected father-child interaction data as part of the Father Involvement with Toddlers Study (FITS) (Boller, et al., 2006). The permission to contact fathers was gained at the end of mother interview at 24th and 36th month. Fathers ($N=727$) were interviewed in 12 sites and father-child interaction was videotaped in 7 sites when children were 24^h months ($n=318$) and 36 months ($n=340$) (Boller, et al., 2006; Raikes, et al., 2002). In the current study, father-child interaction at the 36th month will be used to examine the quality of father involvement.

Measures

Quality of father Involvement at 36th months and TPK.

Father behavior during parent-child semi-structured play. At the 36th month and TPK waves, parent and child were videotaped in a semi-structured play task in which they were given three bags of toys and were asked to play with these interesting toys in sequence. The whole process was videotaped and coded with standard protocols. This three bag assessment was adapted from Three Box coding scales (NICHD Early Child Care Research Network, 1999). Parent's behavior was rated on a seven-point scale, including parent supportiveness (the composite of parental sensitivity, cognitive stimulation, and positive regard), detachment, intrusiveness and negative regard (Love, et al., 2002). Cronbach alpha coefficient for supportiveness inter-rater reliability is .82 at 36th month.

The overall supportiveness composite for the current study was obtained by taking an average of supportiveness scores at these two time points in father behavior during parent-child semi-structured play.

Father involvement in play/caregiving activities. In the father interviews conducted at the 36 month and TPK assessments, fathers were asked how often they were engaged in the play/caregiving activities with children, such as singing songs with child, dancing with child, reading stories to child, taking child on outings, taking child to a museum, playing together with toys, giving child a bath, etc.. These items scored on the ratings from 1 (not at all) to 6 (more than once a day). Separate composite scores of play/caregiving were created for each time point, (36th month and TPK) by taking an average score based on these individual frequencies of father involvement in play/caregiving. The overall play/caregiving composite was obtained by taking an average of play/caregiving scores at these two time points.

Child outcomes.

Preschoolers' sense of security in MacArthur Story Stem Battery. The MacArthur Story Stem Battery (MSSB) (Bretherton, et al., 1990) was used to measure preschoolers' sense of security in the parent-child relationships (Bascoe, et al., 2009; Schermerhorn, Cummings, & Davies, 2008). The MSSB was designed as a narrative story completion approach to assess the child's security of internal representations of the parent-child relationship (Bretherton, et al., 1990). To start off, the interviewer introduced the child to a set of dolls, named the dolls, and explained the relationships and the context. The interviewer started the story, and once the story encountered a dilemma or came to a stressful situation, the interviewer then encouraged the child to finish the story-telling with an open-ended question, such as "What will happen next?" Stories are in different contexts and with a variety of stressors, such as (1) Mother's headache: mother has headache and the child invites a friend to watch something on TV; (2) Three's a crowd: two children argue about including a third child to play football together; (3) Hot soup: child does not follow mother's direction of not touching the hot soup and hurt himself/herself; (4) Lost keys: parents argue who lost the car keys; (5) Stealing candy: child steals a candy after mother refuses to buy more candy for him/her; (6) Departure: parents are going for a trip leaving kids with Grandma and one child is upset about parents' leaving; (7) Reunion: parents come back from the trip; (8) Bedtime: child wants to watch TV in late evening when it is time for bed. The whole processes of assessing story completion was videotaped, including child's responses to each vignette, and trained coders with strict protocol would code the security on the representations of parent-child

relationships (Bascoe, et al., 2009).

The child's perceptions of father as positive parenting figure was defined by "paying attention to the tone of voice—a gentle, soothing parental tone of voice will be coded as positive parental representation," such as "Give Mother and Father a kiss" and "Be careful with the scissors" (Robinson, et al., 2004). The child's perception of father as disciplinary parenting figure was indicated by child's "description of the parent as an authority figure who disciplines and controls the child," which may involve physical punishment as long as it is well regulated and limited." For example: "I told you NO!" and "Don't do that" (Robinson, et al., 2004, MacArthur Narrative Coding Manual). The narrative process and story completion task in MSSB were used to examine the associations between child's narratives and child's representations of parents (Schermerhorn, et al., 2008).

Child's narratives were coded and scores were achieved and concluded on child's representations of parents: child's perception of father as positive parenting figure and child's perception of father as disciplinary parenting figure. Child's perception of mother as positive parenting figure and child's perception of mother as disciplinary parenting figure will be treated as control variables. The mental representation of children could be derived from child's narratives in MSSB (Schechter, et al., 2007). The representation of parent-child relationship through MSSB narratives was related to child's relationship security with parent (Bascoe, et al., 2009). Overall, the MSSB has some advantages in measuring children's perceptions of parents, compared to a questionnaire or interview. Narrative story stem technique has been considered as more comprehensive when measuring the representations at

different levels of awareness (Robinson, 2007).

Child's perceptions of father-child relationships. The Self-Description Questionnaire I (Marsh, 1988, 1990) (SDQ-I) was used to assess academic and non-academic dimensions of preadolescents' perceptions of themselves. In the non-academic scales, the Parent Relationships subscale, drawn from ECLS-K SDQ Parent Relationship Scale, included eight positively worded items (Marsh, et al., 1991). Children responded to the eight items such as "Father understands me" on a 4-point scale in which the higher the score is, the better the relationship is (West, et al., 2010).

Parent report of child's social-emotional outcome. The Child Behavior Checklist (CBCL), as a standardized assessment is used for parents to describe their child's social-emotional behaviors (Achenbach & Ruffle, 2000). The CBCL is self-explanatory and can be completed with assistance in flexible settings, such as a waiting room and home environment. Parents were asked about their child's social-emotional development and behaviors on a 113-item Child Behavior Checklist (CBCL) for ages 6-18 (Achenbach & Rescorla, 2001), which included child's aggressive behaviors, activity level, and other behavioral or emotional problems. Subscales include Anxious/Depressed (13 items), Withdrawn/Depressed (8 items), Somatic complaints (11 items), Social Problems (11 items), Thought Problems (15 items), Attention Problems (10 items), Rule-Breaking Behavior (17 items), and Aggressive Behavior (18 items). The scale ranges from 0 (not true, as far as you know), to 1 (somewhat or sometimes true) and to 2 (very true or often true). For each subscale, raw scores were calculated as the sum of all items with no more than 8 missing items (West, et al., 2010). The

Internalizing Problems variable is the sum of the Withdrawn, Somatic Complaints, and Anxious/Depressed scales; it has a Cronbach's alpha coefficient of .68 based on the subscales of Withdrawn, Somatic Complaints, and Anxious/Depressed scales (Achenbach, 1991). The Externalizing problems variable is the sum of the Rule-Breaking Behavior and Aggressive Behavior scales with the Cronbach alpha coefficient as .70 based on the subscales of Aggressive Behavior and Rule-Breaking Behavior (Achenbach, 1991).

Child's peer bullying victim experiences. The Bullying Scale collected in the EHSRE came from the 4-item Panel Study of Income Dynamics-Child Development Supplement (PSID-CDS2) Peer Bullying scale (Loeber, Green, Lahey, & Stouthamer-Loeber, 1989). Children self-reported how often they were bullied from 1 never to 4 many times in the past month. Responses were summed across the 4 items to create a single bullying (victim) score.

Covariates. In this father involvement study, in addition to child age, child gender, father age, and father education, maternal effects were controlled by including two measurements which are parallel to the two measures of father-child relationship. The two measures are the representation of mother-child relationship, (child's perception of mother as positive parenting figure and child's perception of mother as disciplinary parenting figure) in MSSB, and the child's perceptions of mother-child relationship at 5th grade from the SDQ-I.

Analysis Plan

Multiple Regression was used to test the study hypotheses regarding relations between early father involvement at 36th months and at the preschool age and child development

outcomes, including: 1) the child's sense of security at TPK; 2) the child's perceptions of father-child relationships; 3) the child's peer bullying experiences at 5th grade; and, 4) the child's internalizing and externalizing problems at 5th grade. Specifically, this study examined the effect of prior father involvement on child's sense of security. It also tested the direct effect of prior father involvement on child's perceptions of father-child relationships and indirect effect, mediated by sense of security at TPK, on the child's perceptions of father-child relationships at 5th grade. Moreover, child social-emotional outcomes were examined in the full model, which included prior father involvement, preschoolers' sense of security, and 5th graders' perceptions of father-child relationship, which was hypothesized to mediate relations between the preschoolers' sense of security and 5th grade outcomes.

To test hypothesis 1, that father involvement predicts children's sense of security, the predictors were father involvement at 36th month and father involvement at TPK; the dependent variable was the child's sense of security at TPK; and control variables included (1) child age, (2) child gender, (3) father age, (4) father's years of school, and (5) the representation of mother-child relationship in story stems at TPK.

To test hypothesis 2, that child's sense of security in preschool mediates between early father involvement and the father-child relationship in 5th grade, the predictors were father involvement at the 36 month and TPK assessments and child's sense of security at TPK; the dependent variable was father-child relationship at 5th grade; and the control variables included (1) child age, (2) child gender, (3) father age, (4) father's years of school, (5) the representation of mother-child relationship in story stems at TPK, and (6) child-mother

relationship at 5th grade.

To test hypothesis 3, that father-child relationship at 5th grade mediates between child sense of security in preschool and children's social-emotional outcomes in 5th grade, dependent variables were (1) child bullying experiences (2) child internalizing problems, and (3) child externalizing problems; each of these were tested in separate regression models which each had the same set of predictors and controls. The predictors were child sense of security at TPK and father-child relationship at 5th grade; control variables included (1) child age, (2) child gender, (3) father age, (4) father's years of school, (5) the representation of mother-child relationship in story stems at TPK, and (6) child-mother relationship at 5th grade.

Separate models were run for each of the child outcomes. To test the first question regarding relations between father involvement and the child's sense of security, a three step model was employed. Each model was evaluated for change in R^2 with each addition to the model, the total R^2 (variance explained by the model), and the coefficients β for each predictor. Specific steps of each model are described in Chapter IV. However, to test models of mediation, Barron and Kenny's (1986) four-step approach was utilized. The four steps are summarized in Table 1.1 below.

Table 1.1

Barron and Kenny (1986) Method for Testing Mediation

Step	Analysis
Step 1	Conduct a simple regression analysis with X predicting Y.
Step 2	Conduct a simple regression analysis with X predicting M.
Step 3	Conduct a simple regression analysis with M predicting Y.
Step 4	Conduct a multiple regression analysis with X and M predicting Y.

Note. X = the predictor, Y = the outcome, M = the mediating variable

Missing Data

In the current dataset, sample sizes were different for each variable included in this study. Independent sample T-test was used to examine the mean differences between fathers who didn't have videotape data at 36th month assessment and fathers who had videotape data at 36th month assessment. The results showed that fathers who didn't have videotape data when their child was 36 months had lower play/caregiving activities scores at both 36 months and TPK, and had less education; thus, fathers who didn't have video data at the 36month assessment were different from fathers had video data in age or supportiveness scores at TPK. Differences in variable sample size are summarized in Table 1.2 (See Table 2.2 in Appendices for details).

Table 1.2

Sample Size for Each Measure

Variables		N
Father Involvement	36 th month father supportiveness	166
	36 th month father play/caregiving activities	422
	TPK father supportiveness	348
	TPK father play/caregiving activities	431
Child Sense of Security TPK	TPK child's perception of father as positive parenting figure	109
	TPK child's perception of father as disciplinary parenting figure	109
G5 Father-child relation	Child's perception of their relationship with father at 5 th grade	261
G5 Outcomes	Bullying experiences	259
	Internalizing problems	348
	Externalizing problems	348

Chapter IV Study Findings

A series of simple and multiple regressions were used to test the three study hypotheses. Simple regression was used to test the relation between father involvement at the 36th month and TPK assessments, and sense of security at TPK; multiple regression were employed to test the mediation effect of TPK sense of security on relations between father involvement (36 month and TPK composite involvement) and the G5 father-child relationship; the second multiple regression was used to test whether the G5 father-child relationship mediates relations between TPK sense of security and G5 child outcomes.

A description of all independent variables, dependent variables, and covariates is provided in the next section; correlations among independent variables, dependent variables, and covariates are also explained in the preliminary analysis section. Regression Models will be separately explained according to each of the three hypotheses.

Preliminary Analyses

Bivariate correlations were used to examine the relations among variables (See Table 2.3 in Appendices). Results showed that key predictors were significantly correlated with each other. The child's perceptions of the father as a positive parenting figure at TPK is positively related with 36th month supportiveness ($r = .36, p = .05$) and TPK supportiveness ($r = .18$), but negatively related with 36th month father play/caregiving activities ($r = -.17$) and TPK father play/caregiving activities ($r = -.13$). The child's perceptions of the father as disciplinary parenting figure at TPK was positively related with 36th month supportiveness ($r = .36, p = .05$), positively related with TPK supportiveness ($r = .08$), negatively related with

36th month father play/caregiving activities ($r = -.05$), and positively related with TPK father play/caregiving activities ($r = .07$). Fifth graders' perceptions of their relationships with their fathers was positively, significantly correlated with their perceptions of the mother-child relationship ($r = .55, p = .01$), but negatively correlated with bullying experiences ($r = -.28, p = .01$), internalizing problems ($r = -.14, p = .05$) and externalizing problems ($r = -.21, p = .01$) (See Table 2.3 in Appendices).

Regression Models

To address the three research questions and test the three hypotheses, three sets of regression models were used in analysis process with (1) Multiple regression to test a direct relation between child's sense of security and father involvement in Hypothesis 1 (2) mediation test used via multiple regression to test whether TPK sense of security mediated between father involvement and G5 father-child relation as presented in Hypothesis 2, and (3) mediation test via multiple regression to test whether G5 father-child relationship mediated between TPK sense of security and G5 child outcomes as presented in Hypothesis 3. In the three regression models, child gender and child age were entered in Step 1, followed by father age and father years of school in Step 2. The covariate of mother effects, including the child's perception of the mother as positive/ disciplinary parenting figure or the 5th graders' perception of the relationship with the mother was entered in the next step. The last step included the key predictor in each model. For key predictors of father involvement, the average supportiveness of 36th month and TPK, and the average father-child play/caregiving activities from both time points were treated as separate predictors. Separate models for

parental supportiveness and father play/caregiving activities were employed because the sample sizes were quite different (See Table 1.2 in Chapter III for differences in sample sizes by measure. Also see the section on missing data in Chapter III).

Before proceeding to research findings, an overview is presented in Table 1.3 below including key predictors and outcomes in each multiple regression model to test research hypotheses.

Table 1.3

Overview of Multiple Regression Models for Each Hypothesis Testing

	Regression Models for Hypotheses	Independent variable (s)	Dependent variable
Hypothesis 1			
	Model 1	Father Supportiveness	Child's perception of father as positive parenting figure at TPK
	Model 2	Father Supportiveness	Child's perception of father as disciplinary parenting figure at TPK
	Model 3	Father Play/Caregiving Activities	Child's perception of father as positive parenting figure at TPK
	Model 4	Father Play/Caregiving Activities	Child's perception of father as disciplinary parenting figure at TPK
Hypothesis 2			
Mediation Step 1	Model 5	Father Supportiveness	Father-child relationship at 5 th grade
	Model 6	Father Play/Caregiving Activities	Father-child relationship at 5 th grade
Mediation Step 2	Model 7,8, 9, & 10	Same with Model 1, 2, 3, & 4	
Mediation Step 3	Model 11	Child's perception of father as positive parenting figure at TPK	Father-child relationship at 5 th grade
	Model 12	Child's perception of father as disciplinary figure at TPK	Father-child relationship at 5 th grade
Hypothesis 3			
Mediation Step 1	Model 13	Child's perception of father as positive parenting figure	Bullying experiences as victims at 5 th grade
	Model 14	Child's perception of father as positive parenting figure	Internalizing problems at 5 th grade
	Model 15	Child's perception of father as positive parenting figure	Externalizing problems at 5 th grade
	Model 16	Child's perception of father as disciplinary	Bullying experiences as victims at 5 th grade

parenting figure

Table 1.3 (cont'd)

	Model 17	Child's perception of father as disciplinary parenting figure	Internalizing problems at 5 th grade
	Model 18	Child's perception of father as disciplinary parenting figure	Externalizing problems at 5 th grade
Mediation Step 2	Models 19&20	Same with Models 11&12	
Mediation Step 3	Model 21	Father-child relationship at 5 th grade	Bullying experiences as victims at 5 th grade
	Model 22	Father-child relationship at 5 th grade	Internalizing problems at 5 th grade
	Model 23	Father-child relationship at 5 th grade	Externalizing problems at 5 th grade

Note:

1. TPK means data collection was conducted when the target child was during the time of the transition from preschool to kindergarten.
2. 5th grade means data collection was conducted when child was at 5th grade in elementary school.

Multiple Regression Models for Hypothesis 1

Hypothesis 1 stated that father involvement over early childhood would be related to child sense of security at TPK. As shown in Table 2.4 in Appendices, Regression Model 1 with the average father supportiveness as a predictor of the child's perception of the father as a positive parenting figure was statistically significant, $F(6, 20) = 2.61, p < .05$, together the predictors and controls accounted for 27.1 % of variance in the child's perception of the father as positive parenting figure ($\beta = .08, p < .05$). Also, the control variables of child gender ($\beta = -.14, p < .05$), father age ($\beta = -.01, p < .05$), and child's perception of mother as positive parenting figure ($\beta = .23, p < .05$) were significant predictors in this model. However, the model 2 predicting child's perception of the father as a disciplinary parenting figure was not significant; further, there was no evidence in Regression Model 2 that father supportiveness predicted child's perception of the father as a disciplinary parenting figure.

The Model 3 with father play/caregiving activities predicting the child's perception of the father as positive parenting figure was significant, $F(6, 96) = 12.19, p < .001$, and together the predictor and control variables accounted for 40 % of the variance in the child's perception of the father as positive parenting figure. Father play/caregiving activities was a significant predictor within this model, although in the opposite direction expected ($\beta = -.06, p < .01$). Father years of school ($\beta = .01, p < .05$) and child's perception of mother as positive parenting figure ($\beta = .40, p < .001$) were also significant predictors in this model.

Regression Model 4 was significant with father play/caregiving activities predicting the child's perception of the father as disciplinary parenting figure, $F(6, 96) = 3.36, p < .01$, and accounted for 12.2 % of variance in the child's perception of the father as a positive parenting figure. In this model, child's perception of mother as a disciplinary parenting figure ($\beta = .35, p < .001$) was a significant predictor, but father play/caregiving activities was not a significant predictor.

Therefore, Hypothesis 1 was partially supported (See Table 2.4 in Appendices). Also as presented in the correlation table (See Table 2.3 in Appendices), correlations between the child's perception of the father as positive parenting figure and father supportiveness became weaker from the 36th ($r = .36, p < .05$) month assessment to the TPK assessment ($r = .18$). The correlation between the child's perception of the father as disciplinary figure and father supportiveness changed from 36th months ($r = .36, p < .05$) to TPK ($r = .08, p > .05$). The correlation between the child's perception of the father as disciplinary figure and father play/caregiving activities changed from 36th months ($r = -.05, p > .05$) to TPK ($r = .07, p > .05$). The separate effect of 36th month supportiveness, 36th month father play/caregiving activities, TPK supportiveness and TPK father play/caregiving activities was further tested in later Post-Hoc analysis reported later in this section.

Testing Mediation in Hypotheses 2 and 3

The following two regression models used Baron & Kenny's four-step mediation test (See Table 1.3). An overview of mediation tests for hypotheses 2 and 3 are summarized in Table 1.4 below.

Table 1.4

Overview of Hypothesis Testing

Research Q	Steps in Mediation testing $X \rightarrow Y$; $X \rightarrow M$; $M \rightarrow Y$	Results of Tests
Research Question 2		
Does children's sense of security/warmth (M) in preschool mediate relations between paternal supportiveness in early childhood (X) and 5 th graders' perceptions of their relationships with their fathers (Y)?	Support $\rightarrow$ G5 Relationship Support $\rightarrow$ Sense of Security/warmth Sense of Security/warmth $\rightarrow$ G5 Relationship	Not significant Significant Not significant
Does children's sense of security/warmth (M) in preschool mediate relations between paternal caregiving (X) and 5 th graders' perceptions of their relationships with their fathers (Y)?	Caregiving $\rightarrow$ G5 Relationship Caregiving $\rightarrow$ Sense of Security/warmth Sense of Security/warmth $\rightarrow$ G5 Relationship	Not significant Significant Not significant
Does children's sense of security/discipline (M) in preschool mediate relations between paternal supportiveness in early childhood (X) and 5 th graders' perceptions of their relationships with their fathers (Y)?	Support $\rightarrow$ G5 Relationship Support $\rightarrow$ Sense of Security/discipline Sense of Security/discipline $\rightarrow$ G5 Relationship	Not significant Not significant Not significant
Does children's sense of security/warmth (M) in preschool mediate relations between paternal caregiving (X) and 5 th graders' perceptions of their relationships with their fathers (Y)?	Caregiving $\rightarrow$ G5 Relationship Caregiving $\rightarrow$ Sense of Security/discipline Sense of Security/discipline $\rightarrow$ G5 Relationship	Not significant Not significant Not significant
Research Question 3		
Do 5 th graders' perceptions of their relationships with their fathers (M) mediate relations between children's sense of security/warmth in (X) and 5 th graders' outcomes/Bullying (Y)?	Sense of Security/warmth $\rightarrow$ G5 Bullying Sense of Security/warmth $\rightarrow$ G5 Relationship G5 Relationship $\rightarrow$ G5 Bullying	Not significant Not significant Significant

Table 1.4 (cont'd)		
Do 5 th graders' perceptions of their relationships with their fathers (M) mediate relations between children's sense of security/warmth in (X) and 5 th graders' outcomes/Internalizing Problems (Y)?	Sense of Security/warmth→G5 Internalizing Problems	Not significant
	Sense of Security/warmth→G5 Relationship	Not significant
	G5 Relationship→G5 Internalizing Problems	Not significant
Do 5 th graders' perceptions of their relationships with their fathers (M) mediate relations between children's sense of security/warmth in (X) and 5 th graders' outcomes/Externalizing Problems (Y)?	Sense of Security/warmth→G5 Externalizing Problems	Not significant
	Sense of Security/warmth→G5 Relationship	Not significant
	G5 Relationship→G5 Externalizing Problems	Significant
Do 5 th graders' perceptions of their relationships with their fathers (M) mediate relations between children's sense of security/discipline in (X) and 5 th graders' outcomes/Bullying (Y)?	Sense of Security/discipline→G5 Bullying	Not significant
	Sense of Security/discipline→G5 Relationship	Not significant
	G5 Relationship→G5 Bullying	Significant
Do 5 th graders' perceptions of their relationships with their fathers (M) mediate relations between children's sense of security/discipline in (X) and 5 th graders' outcomes/Internalizing Problems (Y)?	Sense of Security/discipline→G5 Internalizing Problems	Not significant
	Sense of Security/discipline→G5 Relationship	Not significant
	G5 Relationship→G5 Internalizing Problems	Not significant
Do 5 th graders' perceptions of their relationships with their fathers (M) mediate relations between children's sense of security/discipline in (X) and 5 th graders' outcomes/Externalizing Problems (Y)?	Sense of Security/discipline→G5 Externalizing Problems	Not significant
	Sense of Security/discipline→G5 Relationship	Not significant
	G5 Relationship→G5 Externalizing Problems	Significant

Note.

1. Step 4 in testing mediation was not conducted given that no mediation was evident in prior tests of mediation tests.
2. G5 means 5th grade in elementary school (same explanation applies in the following tables).

Multiple Regression Models for Hypothesis 2

Hypothesis 2 stated that there would be both direct effects of early father involvement and indirect effects of father involvement on the child's perception of the father-child relationship in 5th grade mediated by the preschoolers' sense of security. As proposed by Baron & Kenny (1986), a Four-Step mediation test was used in Regression Models to test Hypothesis 2 (See the Mediation step table 1.5 below).

Table 1.5 *Mediation Step for Hypothesis 2*

	Analysis	Visual Depiction
Step 1	Conduct a simple regression analysis with father involvement predicting G5 father-child relationship.	Father involvement → G5 father-child relationship
Step 2	Conduct a simple regression analysis with father involvement predicting child's sense of security at TPK.	Father involvement → TPK sense of security
Step 3	Conduct a simple regression analysis with child's sense of security at TPK predicting G5 father-child relationship.	TPK sense of security → G5 father-child relationship
Step 4	Conduct a multiple regression analysis with father involvement and child's sense of security at TPK predicting G5 father-child relationship.	Father involvement + TPK sense of security → G5 father-child relationship

In Mediation Step 1, the Regression Model 5 with father supportiveness predicting father-child relationship at 5th grade was significant $F(6, 83) = 12.23, p < .001$, and accounted for 43.1 % of variance in 5th graders' perception of their relationship with father. However, the statistical significance was driven by child's perception of their relationship with mother at 5th grade ($\beta = .89, p < .001$); paternal supportiveness was not a significant predictor (See Table 2.5). Likewise, while the overall Regression Model 6 with father play/caregiving activities predicting father-child relationship at 5th grade was significant $F(6, 220) = 16.54, p < .001$, and accounted for 29.2% of variance in the dependent variable, only

the control variables were significant predictors. Father age ($\beta = -.01, p < .05$) and child's perception of their relationship with mother at 5th grade ($\beta = .69, p < .001$) were statistically significant, but father play/caregiving activities was not a significant predictor (See Table 2.6 in Appendices).

Mediation Step 2 for Hypothesis 2 was conducted to test father involvement predicting child's sense of security at TPK, which was the same analysis and results as in regression Models (Models 7-10, which are the same as shown in Models 1 -4) for Hypothesis 1 (Table 2.4 in Appendices).

Mediation Step 3 tests relation between TPK sense of security and G5 father-child relation with 4 steps. The overall Regression Model11 was significant $F(7, 45) = 4.14, p < .001$, and accounted for 30% of variance in 5th graders' perception of their relationship with father, but the main predictor was not statistically significant. In this model, child's perception of their relationship with mother at 5th grade ($\beta = .94, p < .001$) was a statistically significant predictor. The overall Regression Model12 with predictor of child's perception of father as disciplinary parenting figure, was significant $F(7, 45) = 4.48, p < .001$, and accounted for 31.9% of variance in 5th graders' perception of their relationship with father, but the major predictor was not statistically significant. Similarly, child's perception of their relationship with mother at 5th grade ($\beta = .88, p < .001$) was statistically significant (See Table 2.7 in Appendices). Major predictors in Mediation Step 3 were not significantly related with 5th graders' perceptions of their relationships with father.

According to the Baron and Kenny (1986), if one of the first three steps is not significant, there was not mediation effect. Therefore, no significant mediation effect was found in the set of regression models for Hypothesis 2. Hypothesis 2 was not supported.

Multiple Regression Models for Hypothesis 3

Hypothesis 3 stated that there would be both direct effects and indirect effects of sense of security on 5th graders' social-emotional outcomes, mediated by the quality of father-child relationship at 5th grade. As proposed by Baron and Kenny (1986), a four-step mediation test was used to test Hypothesis 3 using a series of regression models (see the Mediation Test Table 1.6 below).

Table 1.6 *Mediation Step for Hypothesis 3*

	Analysis	Visual Depiction
Step1	Conduct a simple regression analysis with TPK sense of security predicting G5 child outcomes (Bullying, Internalizing Problems, and Externalizing Problems).	TPK sense of security→ G5 Child Outcomes
Step2	Conduct a simple regression analysis with TPK sense of security predicting G5 father-child relationship.	TPK sense of security→ G5 Father-child relationship
Step 3	Conduct a simple regression analysis with G5 father-child relationship predicting G5 child outcomes.	G5 father-child relationship→ Child Outcomes
Step 4	Conduct a multiple regression analysis with child's sense of security at TPK and G5 father-child relationship predicting G5 child outcomes	TPK sense of security+ G5 father-child relationship→ G5 child outcomes

In Mediation Step 1, the overall Regression Model 13 with child's perception of father as positive parenting figure predicting G5 bullying experiences, Regression Model 14 with child's perception of father as positive parenting figure predicting G5 Internalizing Problems, and Regression Model 15 with child's perception of father as positive parenting figure predicting G5 Externalizing Problems were not significant. The overall Regression Model 16 with child's perception of father as disciplinary parenting figure predicting G5 bullying experiences, Regression Model 17 with child's perception of father as disciplinary parenting figure predicting G5 Internalizing Problems, Regression Model 18 with child's perception of father as disciplinary parenting figure predicting G5 Externalizing Problems were not significant.

Mediation Step 2 was to test relations between TPK sense of security and G5 father-child relationship (Model 19 with child's perception of father as positive parenting figure predicting G5 father-child relationship & Model 20 with child's perception of father as disciplinary parenting figure predicting G5 father-child relationship). Analysis and results were the same as presented in Mediation step 3 (Models 11 & 12). (Please see results in Mediation Step 3 of Table 2.7 in Appendices).

Mediation Step 3 was to test the relation between 5th grade perceptions of the father-child relationship and 5th grader outcomes (bullying, internalizing, and externalizing problems which were each tested in separate models). Results showed that in Regression Model 21, the major predictor, 5th grade perception of the father-child relationship, negatively predicted 5th grade bullying experiences ($\beta = -.98, p < .01$). Child age ($\beta = -.07, p < .05$) was also a significant factor. All the factors together included in Mediation Step 3 accounted for 8 % of variance in 5th graders' bullying experiences, $F(6, 242) = 4.53, p < .001$ (See Table 2.8 in Appendices). In Regression Model 22, G5 father-child relationship was not related to 5th graders' internalizing problems, even though the overall model was significant $F(6, 243) = 3.25, p < .01$, with father age ($\beta = -.14, p < .01$) and all the other factors accounted for 5.2% variance in Internalizing Problems (See Table 13 in Appendices). In Regression Model 23, father-child relationship at 5th grade was negatively related to externalizing problems ($\beta = -2.71, p \leq .01$), $F(6, 243) = 4.49, p < .001$ and all the factors in this model accounted for 7.7% of variance in 5th graders' externalizing problems. Father age ($\beta = -.22, p < .001$) was also statistically significant (See Table 2.8 in Appendices).

According to the Mediation test results in the above three steps, there was no significant

mediation effect in the set of regression models for Hypothesis 3.

Summary of Analyses

In conclusion, Hypothesis 1 was partially supported. Regarding Hypotheses 2 and 3, no evidence was found for the hypothesized mediated relationships. However, some significant relationships were found among study variables as summarized below.

Statistically significant results. Both average supportiveness ($\beta = .08, p < .05$) and average play/caregiving activities ($\beta = -.06, p < .01$) were significant predictors of the child's perception of father as a positive parenting figure at TPK. In testing Hypothesis 3, concurrent importance of the father-child relationship was found; 5th graders' perception of father-child relationship was significantly related to bullying experiences ($\beta = -.98, p < .01$) and externalizing problem ($\beta = -2.71, p < .01$).

Statistically non-significant results. Early father involvement was not related to 5th graders' perceptions of their relationship with their fathers, nor related to 5th graders' outcomes. Preschoolers' perceptions of father as a positive parenting figure was not related with father-child relationship at 5th grade nor related to 5th graders' outcomes.

Post-Hoc Analysis

Post-Hoc Analyses were used to test the statistical relations between father involvement and TPK sense of security in Hypothesis 1.

Post-hoc analysis for Hypothesis 1. Because father play/caregiving was unexpectedly negatively related to preschool sense of security, post-hoc analyses were conducted to better understand this finding.

In the post-hoc analysis, each of the four variables—36th month supportiveness, 36th month play/caregiving, TPK supportiveness, and TPK play/caregiving – were tested as the individual predictor of father involvement—the composite supportiveness variable and the

composite of play/caregiving variable in each Post-hoc regression model. Post-hoc tests included five steps in the multiple regression analysis. Step 1 included Child gender and Child age. Step 2 added Father Age and Fathers' years of school. Step 3 controlled for mother effect by adding child's perception of mother as positive parenting figure or child's perception of mother as disciplinary parenting figure variable. Step 4 added 36th month quality of father involvement (supportiveness or play/caregiving), followed by step5 adding TPK quality father involvement (supportiveness or play/caregiving).

Results showed that the overall model with father supportiveness predicting child's perception of father as positive parenting figure at TPK was not significant. Father supportiveness predicting child's perception of father as disciplinary parenting figure was not significant either. The model with father play/caregiving activities predicting child's perception of father as positive parenting figure was significant, $F(7, 95) = 10.341, p < .001$, all factors accounted 39% variance in child's perception of father as positive parenting figure. Father age ($\beta = .014, p < .05$) and child's perception of mother as positive parenting figure ($\beta = .398, p < .001$) were significant. But father play/caregiving activities at 36th month and TPK were not significant predictor of child's perception of father as positive parenting figure. The model with father play/caregiving activities predicting child's perception of father as positive parenting figure was significant, $F(7, 95) = 3.098, p < .01$, all factors accounted 13% variance in child's perception of father as positive parenting figure. Child's perception of mother as a disciplinary parenting figure ($\beta = .345, p < .001$) was significant predictor for child's perception of father as positive parenting figure. But father play/caregiving activities at 36th month and TPK were not significant (See Table 2.9 in Appendices).

Chapter V Discussion and Conclusion

Previous studies have focused on the effects of father absence and presence on child well-being and developmental outcomes (e.g., Bush, et al., 2000; Carlson, 2006) rather than on how father involvement contributes to child social-emotional functioning during the preschool years and in later elementary school years. A paucity of research has been conducted with a consideration of the effects of fathers on preschoolers' sense of security and 5th graders' social, emotional, and behavioral outcomes. The purposes of this study were to examine the effects of father involvement in early childhood on children's sense of security at the transition to kindergarten; to test the mediation effect of preschoolers' sense of security on relations between father involvement in early childhood and the father-child relationship at 5th grade; and, to examine the mediation effect of the father-child relationship at 5th grade on relations between sense of security at the transition to kindergarten and 5th graders' social-emotional outcomes (bullying experiences, externalizing and internalizing behaviors).

Findings

Results indicated that Hypothesis 1 was partially supported. Specifically, father involvement, operationalized as paternal supportiveness during interactions in early childhood, predicted child sense of security, as measured by the child's sense of the father as a warm, positive parental figure. Early father play/caregiving activity was inversely related to the child's sense of security in the late preschool period. Contrary to study hypotheses, no mediation effects were evident. The quality of the father-child relationship in the 5th grade, however, was related to fewer bullying experiences and to fewer externalizing behavior problems.

Early father involvement and sense of security.

Father as a warm, positive parenting figure. Father supportiveness in early childhood

was found to be significantly related to preschoolers' sense of security, in particular the child's perception of the father as a warm positive parenting figure. One possible explanation for this finding is that fathers' emotionally supportive behaviors with their children during play contribute to children's emotional security. Fathers' supportiveness in play, as measured in the current study, reflected behaviors such as fathers being sensitive during play (Grossmann, et al., 2002), father-child social interactions, and fathers' directiveness in play activities (Kazura, 2000). Prior research has linked many of these behaviors with children's emotional security. In a study by Grossmann and colleagues (Grossmann, et al., 2002), fathers' sensitivity during play was found to be related to later child attachment security at 10 years and 16 years old. Fathers who were sensitive during the interactive play and responsive to their children's emotional expressions were more likely to provide emotional resources and availability to their children. Children who perceived that their needs and their expressions were attended to by fathers might feel more comfortable and confident in this father-child relationship, and feel their father is a trustworthy figure. Social interaction, according to Bowlby (1969, 1988) and Ainsworth, Blehar, Waters, & Wall (1978), is another important pathway for secure attachment. As presented in Kazura's study (2000), fathers' social interaction in play contributed to the child's secure attachment. In Kazura's study (2000), fathers were more directive than mothers in play activities, which might be beneficial for young children to develop their attention capabilities to engage in play (Kazura, 2000). Kazura suggests that paternal directiveness and interaction with their children promoted children's cognitive skills. Because of fathers' directiveness and all these engaged social interactions, children were showed more social instruction and achieved cognitive skills such as object mastery. In this learning process of attaining social instruction and cognitive strategies, children were experiencing a positive father-child relationship, and they might feel that their fathers were important social supports and resources for them. When this interactive one-on-

one communication happened, their internal working model was also shaping a supportive and reliable representation of a father figure, which further helped establish father-child secure attachment. Based on the evidence from the literature, it is reasonable that the supportiveness and secure feelings the children experienced with fathers in early childhood during interactive father-child play activities could help children shape positive representations of their fathers in their internal working models at a later stage. Children with such secure feelings are likely to perceive their fathers as positive parenting figures and take fathers as important resources for emotional security.

Preschoolers with positive support from involved fathers, such as the supportiveness they perceived during play interactions (Newland, Coyl, & Freeman, 2008) are likely to feel emotional support from fathers in those active play interactions. Newland and colleagues' (2008) study, therefore, suggested that physical play with fathers contributed to children's secure relationships with their fathers. Similarly, in those active play interactions of current study, children perceived emotional support and enjoyed the feelings of being loved, thus, they saw their fathers as positive parenting figures and were also securely attached with their fathers.

The current study also found a long-term effect of father play/caregiving on the preschoolers' perception of the father as a positive parenting figure, but in the unexpected direction. Preschoolers whose fathers engaged in more play/caregiving in early childhood had less positive perceptions of their fathers as positive parenting figures. It may be that the quantity of play/caregiving is positively enhancing child's well-being compared to the quality of those interactions. In Galinsky's (1999) study of youth and their parents, children's perceptions of their mothers' and fathers' parenting was related to the quality of interactions they shared with their parents and not to how much time parents reported spending with their children. Children's perceptions of feeling important and loved were critical in how they

perceived their parents (Galinsky, 1999). Unfortunately, in the current study, we do not know the quality of the play/caregiving activities about which fathers were asked; we only know the frequency that fathers reported doing each activity with the child. While paternal supportiveness was observed and coded during a live play interaction, fathers reported on only the type and frequency of play/caregiving during an oral interview. Moreover, the play interaction reflects one-on-one interactions with the child while play/caregiving activities, such as going to museums, reading stories to child, and playing together with toys might well involve other siblings, occur in crowded contexts, and reflect other characteristics that are different from one-on- interactions. In this case, the reported negative relationship between play/caregiving and perceptions of the father as a positive parenting figure (and the positive association between supportiveness and perceptions of the father) would seem to be in line with Galinsky's findings (1999) that quality of time with children is more critical to the child's perceptions of parents. The negative effect of father play/caregiving activities might be that fathers who reported such activities with their children focused on doing activities together without thinking of the interactive effects or taking child's emotional needs into consideration in those activities. Wical and Doherty (2005) note that father involvement needs to be understood in its various contexts and whether direct interaction occurs between father and child, rather than the general quantity of father-reported involvement (Wical & Doherty, 2005). According to Wical & Doherty's study (2005), it is helpful to understand the quality of father involvement as opposed to only examining the quantity of involvement. In light of the current study findings, then, one interesting area of future research would be to examine the quality of interactions during play/caregiving activities, such as those reported in the father interview, as compared to the quality and characteristics of one-on-one interactions.

Father as a disciplinary figure. There was no statistically significant relationship between father involvement - in the form of paternal supportiveness in play, or type and

frequency of play/caregiving activity - and children's perceptions of fathers as positive figures. There was also no statistically significant relationship between father involvement and children's perceptions of fathers as disciplinary figures. The quantity of time spent with children was not related to how children perceived their fathers in terms of their roles as disciplinarians. According to Galinsky (1999), children value the quality of time they have with their parents above the quantity of time with their parents. However, the current study did not replicate this result in relation to child representation of father as a disciplinary figure. One possible reason could be the small sample size for the fathers who had both been involved in video-taped semi-structured play and those who participated in MacArthur Story Stem Battery assessment at TPK. Only a small portion of fathers have data at both assessment times, which means there could be a selection bias in the sample that makes the group who participated in both waves of data different from the others in this sample, and leaves interpretation of the results open to question. Additionally, sample characteristics could also explain this result; for example, fathers from low-income families perceived their father roles and responsibilities with more focus on modeling, teaching, guiding and protection, as suggested in a qualitative study of low-income fathers (Summers, et al., 1999). The issue that whether fathers from low-income families are more disciplinary or not, as compared to more economically advantaged fathers, is open to future research.

Lack of mediation between child sense of security and later father-child relationship and lack of mediation between concurrent father-child relationship and child outcomes.

Contrary to study hypotheses, sense of security at the age when child was transitioning from preschool to kindergarten did not mediate relations between early father involvement and perceptions of the father-child relationship in 5th grade. Likewise, perceptions of father-child relationships in 5th grade did not mediate relations between child sense of security in

the late preschool period and children's outcomes (victims in bullying experiences, internalizing and externalizing behaviors) in 5th grade.

We expected that sense of security likely reflected accumulated emotional resources in the child that would explain the process through which early father involvement continued to influence the child's development. There is, however, a wide time span between the time when they are transitioning to kindergarten and the time when the 5th grade assessment was completed in the current study. The effects of father involvement in early years might decrease over time, or fade out due to contextual changes and other increasingly influential effects from peers between the years from pre-kindergarten to 5th grade.

The effects of child's sense of security and their perceptions of their father as a positive parenting figure may decrease over time or be influenced by other possible effects in longitudinal studies. It may be that the effects on early sense of security on subsequent development simply fade over time as other influences on development become more prominent. In general, several longitudinal studies have found that the effects of early child and family factors on children's development fade somewhat over time. There is quite limited research on fading effects on father involvement. However, the findings could be drawn from studies of other kinds of parenting and family characteristics to help better understand the findings in the current study. For example, Harvey's (1999) found that while the effect of mothers working more hours was related to concurrent lower academic competencies for children at 7 years old, then it also predicted lower competencies at 9 years old, but this effect faded as the children became adolescents. The child's early secure relationship with the father might be fading away as time goes by, resulting in the earlier relationship exerting a weaker effect than the concurrent influence of the present father- child relationship. In the current study, the prior secure relationship at TPK might not be as strong an influence as the

concurrent effect of father-child relationship in 5th grade. The effects of early father involvement and early perceptions of the father may simply play a less important role in development as other influences begin to more prominently impact development in early adolescence. As summarized by Coll and Szalacha (2004), children in middle childhood are influenced in a greater number of contexts compared to early childhood, including school, neighborhood, popular media, and more direct exposure to the broader culture (Coll & Szalacha, 2004). It may be that these types of influences are more relevant to how the child perceives the father at the transition to middle school. The effects of father involvement on children might also fade out over time as the child has more time at school and with peers. Children are probably receiving increasing influences from peer relationship during early adolescence (e. g., Espelage & Holt, 2001; Gardner & Steinberg, 2005). Peers might be more influential than parents for these later child outcomes, such as internalizing and externalizing problems (Henricsson & Rydell, 2006), or peer victimization (Espelage & Holt, 2001). Peers might also mediate or moderate the effects of the father-child relationship on child outcomes (e.g., Chen, Chang, He, & Liu, 2005). In late elementary years, peer influences moderate the effects of parenting on child competences, so it may be that earlier influences, such as parent-child relationship or child's secure feelings about parents, decrease in effect over time as effects in other contexts besides the family environment become more important. In Chen's study (Chen, et al., 2005), supportive parenting was found to be strengthened by peer group influence on child's social and school competencies, and vice versa, suggesting that while early effects of father involvement and child subsequent sense of security at TPK may fade over time, the effects of concurrent parent-child relationships still remain influential on development.

Alternatively, it may be that the nature of the relationship between father and child

changes over time due to contextual characteristics. For example, demographic factors such as employment and socioeconomic status and father residential status may not only change over time but also influence the father-child relationship over time above and beyond any influences from the preschool period. Factors included employment, socioeconomic status, income and education, residential status and relationship with mothers might be changing over time and influence how actively the father could be involved (e. g., Aldous, et al., 1998; Coley & Chase-Lansdale, 1999). Among these factors, father residential status together with quality of father-child relationship might be a particularly salient set of characteristics (e. g., Booth, Scott, & King, 2010; Coley & Chase-Lansdale, 1999). For children born outside marriage, 40% fathers moved in and out between the time when child was born and when they became preschoolers (Coley & Chase-Lansdale, 1999). Another study showed that children who were close to nonresident fathers had higher self-esteem and less possibility in delinquency (Booth, et al., 2010). Children with a resident father but not in good father-child relationship were better off than children who had a nonresident father and did not have good relationship, in terms of academic performance (Booth, et al., 2010). The residency changes could happen in those years from the time during the transition to kindergarten to the time at 5th grade. The changes in residence might reduce the opportunities for fathers being as active parenting figure in daily contexts. It might be that in the present study, as fathers moved in or out of the family, the family structure and active parental support were always changing, which further made the time father and child spent together, as well as the social interactions between father and child unstable and open to uncertainty. These uncertain feelings and unstable father-child relationships made it with much instability on how the children perceive their relationship with their father. The quality father-child relationship might not be stable throughout early childhood and later years at the end of elementary school years in current study, and may have been vulnerable to any changes in family context. This might result in

the changes in how children perceived their relationships with their fathers.

Father-child relationships in 5th grade and concurrent outcomes.

Experiences as a bullying victim and externalizing problems. The father-child relationship at 5th grade was negatively related to the child's bullying experiences as a victim. Fifth graders' perceptions of their relationships with their fathers were related to their social development. Specifically, children who reported more positive relationships with their fathers in the 5th grade were less likely to report being victims of bullies, and they were less likely to demonstrate externalizing behaviors as perceived by their mothers. This finding is consistent with a considerable number of previous studies in adolescence, one of which showed that children's perceived father-child relationships were related to fewer externalizing problems (e.g., Besser & Blatt, 2007; Gordis, et al., 2001). In considering what it is about the father-child relationship that might promote such positive social-emotional outcomes, one explanation may be that father-child interactions promote communication skills. Existing research (Fagan & Iglesias, 2000) has linked father-child communication to child's communication skills around 4 years old and with fewer child behavior problems. Communication skills were found by Burleson, Delia, and Applegate (1992) are also related to peer acceptance, which might contribute to fewer bullying experiences (Hodges, Boivin, Vitaro, & Bukowski, 1999). Children with better communication skills and well-developed social-cognitive skills are likely to reach out and make friends with peers and might handle peer relationship better (Burleson, et al., 1992). Further, children with better communication and positive peer relationship are not likely to be involved in peer bullying, either as a bully or a victim (Hodges, et al., 1999). As Hodges and colleagues found, peer friendship could act as a protector, keeping children from victimization. If children's lack of communication with fathers hinder the development of communication skills with others, as indicated by

(Burleson, et al., 1986), then it may not be easy for them to establish positive relationship with peers. It might not be easy for children with poor communication skills to make friends, and they might be left out among peers or even become antisocial. Therefore, children with poor relations with parents are more likely to be bullies, to be victims of bullying, and to have more externalized problems (Cassidy, 2008).

A second explanation may be that good father-child relations serve as emotional security for the child, and thus as a protective factor for their social development. If children feel that they are loved and valued by their father, they might be able to share their emotions with others, and not feel isolated, reducing their experience of negative emotions, such as anger, resentment, or abandonment (e.g., Diamond & Liddle, 2004). If children feel they don't have positive relationship with their father and are not feeling supported in or warmth from this relationship, they might not share their feelings with their father. Children's feelings of sadness, isolation, or less esteem might then "spill out" in their relationships with their peers.

Internalizing problems. Perceptions of the father-child relationship were not related to children's internalizing problems. The lack of significant relations between the father-child relationship and children's internalizing problems may be explained in several ways. First, externalizing behaviors such as acting out, hitting, and fighting are simply easier to recognize than are more subtle internalizing problems, such as anxiety and depressive symptoms. Externalizing behaviors often demand more attention from parents and teachers, and are thus more salient to observe than are internalizing behaviors. It was the parents who rated internalizing and externalizing behaviors in the current study. But parents may not be able to have the full awareness of children's internalizing behaviors, particularly as children are entering early adolescence and they may begin spending more time with peers or alone than sharing their time or feelings with parents.

Second, parents and teachers often perceive behaviors differently (e.g., Youngstrom,

Loeber, & Stouthamer-Loeber, 2000). Youngstrom and colleagues' (2000) reported disagreement between parents', teachers', and adolescents' ratings of internalizing problems (Youngstrom, et al., 2000). Other informants, for example, parents might be affected by their own psychological well-being, such as depression, which might further impact how they evaluated child's internalizing problems (Youngstrom, et al., 2000). Even though the result from current study was unexpected that there were no father effects on child internalizing problems, internalizing problems are not as easily observed as externalizing problem are. Therefore, the lack of a significant relationship may be a result of how this outcome was measured. Future studies might be more concerned about validity of measures and informants' reports.

Summary

The current study found a short-term longitudinal effect of father involvement in early childhood on child's sense of security at the transition from preschool to kindergarten. Father supportiveness in play contributed to child's perception of father as positive parenting figure at the time transitioning to preschool. Additionally, concurrent father-child relationship in late elementary school years was related to child social-emotional outcomes at 5th grade. Fifth graders who had a positive father-child relationship were protected by this relationship from being bullied and also had fewer externalizing problems at this time.

Strengths

This study contributes to the current limited studies of fathering as the first study examining father involvement from early childhood to preschool age and child outcomes from preschool age to middle childhood. In general, there are few longitudinal studies from infancy to adolescence. Additionally, those longitudinal studies that do cover the period from infancy to adolescence tend to focus on mothers (e.g., Elder, 1985; Werner, 1990 & 1993), and the study of effects of fathering over time is more limited (e.g., Cabrera, et al., 2007).

The current study examined father involvement in early childhood and future outcomes at late preschool and 5th grade. Preschoolers experience transitions from home as the primary environment to school as the primary environment. Middle childhood, particularly at 5th grade, is the transition from childhood to adolescence. Children at this stage are experiencing social, emotional, and cognitive adjustments and fluctuations both biologically and psychologically. The current study has found important evidence that fathers are playing a significant role at 5th grade to protect children at this juncture from unhealthy peer relationship and harmful behavioral problems.

Second, this study focuses on the quality and quantity of father involvement rather than simply on father absence/presence. The current study also explored different measures of fathers' quality involvement.

Third, at preschool age, the McArthur Story Stem Battery (MSSB) was used to examine child sense of security and new relations were found between father supportiveness and child sense of security. The MMSB is a more comprehensive assessment of representation than questionnaire and interviews (Robinson, 2007); most attachment security is tested using the parent-reported Q-Set (e.g., Frosch, et al., 2000; Schneider, et al., 2001) or the Strange Situation (e.g., Anan & Barnett, 1999; Cox, Owen, Henderson, & Margand, 1992).

Finally, new findings on 5th graders contribute to the literature on the effects of fathers in middle childhood. The current study identified the significance of fathers as protectors for 5th graders, reducing bullying experiences and externalizing problems for both boys and girls. According to both regression Model 3 and post-hoc analysis, there were parent gender differences in the effect of parent-child relationship on 5th graders' social-emotional outcomes. Fathers tend to play a more influential role in child's bullying experience and

externalizing problem; and mothers present the significant effect for child's internalizing problem.

Limitations

Limitations on sample size. The current study included measurements across 36th month father involvement, TPK father involvement, TPK child's sense of security, 5th graders' relationship with father, and 5th graders' outcomes. Due to the attrition and the variations of measurement types (e.g., in-home observation, parent interviews, etc.), sample sizes by measure varied considerably. Disparities on sample size of the key variables are a concern for the validity of study findings.

Limitations on longitudinal study. No significant relations were found between father involvement at early stages and 5th grade father-child relationship and 5th graders' outcomes. In addition to the discontinuity of fathering, influences of peers and teachers in school environment and other developmentally related factors should be included in future studies to more fully examine the possible chain of longitudinal effects of early father involvement on later child outcomes.

Implications

The importance of fathers. A review of literatures in the importance of fathers by Cabrera, Tamis-LeMonda, Bradley, Hofferth, and Lamb (2000) found paternal parenting is playing an increasingly important role on child outcomes. As the gap between involved and uninvolved father seems to be widening, according to, father involvement becomes an important factor in child caregiving and for child developmental needs (Cabrera, et al., 2000). The current study found that, in both early stages of development and middle childhood, fathers are playing a crucial role in contributing to preschoolers' sense of security and in protecting pre-teen children from unhealthy experiences or behaviors. Both the longitudinal

effect from 36th month to preschool age and concurrent protection at 5th grade confirms that fathers are important in family and social environments.

The field in father studies is shifting the focus from father presence to quality of father involvement. More methodological issues, such as measures, long-term effects across infancy to adolescence, other factors in addition to fathers' effect, need to be addressed in later research.

Future Directions

More investigation is needed to discern the reasons for the different sample sizes of the key variables in current study, especially sense of security data in the late preschool period. Statistical effort and data imputation technique will be important to achieve a more complete dataset to enable stronger and more valid results.

Study findings with unexpected results will be further examined. Further steps will consider how other influential factors, such as residential status, quality of mother-father relationship, and peer influences between the time when they are transitioning from preschool to kindergarten and the time when they are at 5th grade might moderate prior effects of father involvement and child's sense of security on child outcomes at 5th grade. Moreover, measurements of father involvement and child's internalizing problems will also need to be considered thoughtfully. As indicated in the current study, quality interaction during play might have more influence than the frequencies of father-child activities, so further tests are needed to determine whether the quantitative father involvement is also effective and examine how those shared activities make a difference for father-child relationship and child outcomes. Regarding children's internalizing problems, future studies might consider using children as the primary informant due to the possible low visibility of child's internalizing behaviors. Multi-informants could also be utilized to check discrepancies of reported

internalizing problem outcomes.

Also, ethno-racial backgrounds should be included in the next steps to examine the possible differences in the hypothesized relationships in different racial/ethnic groups. Fathers of different ethno-racial cultures have different values of fathering and different approaches for relating with their children. A few studies have taken a further look at differences and similarities across racial groups. For White and Mexican American children, resident fathers or involved non-resident biological fathers promote children's self-regulation at 36th month and contribute to lower aggression. But this effect does not occur in African American families (Vogel, et al., 2006). A study conducted by Yogman and his colleagues (1995) has found that father involvement contributes to infants' cognitive development in African American families. The existing literature is not only sparse but with serious discrepancies of findings across different ethno-racial groups.

APPENDICES

Table 2.1

Description of Sample

		%	<i>N</i>
Program Status	Program Group	52.0	224
	Comparison Group	48.0	207
Father Employment (<i>n</i> = 426)	Currently Working	81.2	350
	Currently in School	10.2	44
	Currently Looking for Work	6.3	27
	Currently Unemployed	6.5	28
	Currently Laid Off	3.7	16
	Currently Keeping House	3.7	16
Father living with mother of the child (<i>n</i> = 429)	Living together	81.0	349
	Not living together but seeing each other	12.3	53
	Not living together, seeing each other less than once a week	6.3	27
Father's Residence Status (<i>n</i> = 431)	Resident Biological Father	71.7	309
	Nonresident Biological Father	11.8	51
	Resident Other Father Figure	13.9	60
	Nonresident Other Father Figure	11.8	51
Father Ethnicity (<i>n</i> = 419)	European American	50.8	219
	Hispanic	21.1	91
	African American	18.3	79
	Other	7.0	30
Child Gender (<i>n</i> =431)	Girl	51.3.	221
	Boy	48.7	210

Table 2.2
Description of All Variables

	N	M (SD)	Minimum	Maximum
Father Involvement				
36 th month supportiveness	166	4.15(.85)	2	6.33
36 th month play/caregiving	423	3.54 (.71)	1.42	5.74
TPK supportiveness	348	4.45 (1.10)	1	7
TPK play/caregiving	388	3.34 (.67)	1	5.79
Support (composite of 36 th month and TPK supportiveness)	152	4.32(.86)	1.83	6.67
Play/care (composite of 36 th month and TPK play/caregiving)	382	3.45(.60)	1.71	5.76
TPK sense of security				
Child's perception of father as positive parenting figure	109	.20 (.16)	0	.75
Child's perception of mother as positive parenting figure	109	.31(.24)	0	.88
Child's perception of father as disciplinary parenting figure	109	.15 (.16)	0	.75
Child's perception of mother as disciplinary parenting figure	109	.26 (.19)	0	.75
G5 parent-child relation				
G5 mother relation	314	3.56 (.41)	2.25	4
G5 father relation	261	3.52 (.51)	1.75	4
G5 child outcomes				
Bullying	329	6.54 (2.47)	4	15
Internalizing Problems	348	6.16 (5.69)	0	30.2
Externalizing Problems	348	7.62 (7.27)	0	42

Table 2.3
Correlations of Variables Table

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Child gender	1.00																
2. Child age	-.07	1.00															
3. father age	.05	.06	1.00														
4. father edu	.01	.08	.10*	1.00													
5.36 th supportiveness	.13	-.10	.09	.21**	1.00												
6.36 th play/caregiving	.00	-.08	-.14**	.09	.02	1.00											
7.TPK supportiveness	.03	.05	.13*	.27**	.42**	.06	1.00										
8.TPK play/caregiving	.01	-.11*	-.15**	-.08	-.04	.56*	-.05	1.00									
9. TPK pos perception of mother	.24*	.13	.02	.19*	.08	.02	.14	.12	1.00								
10. TPK pos perception of father	.08	.04	-.03	.29**	.36**	-.17	.18	-.13	.57*	1.00							
11.TPK dis perception of mother	.26*	.05	.10	.03	-.09	-.01	-.10	.08	.34*	.14	1.00						
12.TPK dis perception of	-.07	-.07	.02	.15	.36*	-.05	.08	.07	-.01	.21*	.36**	1.00					

father

Table 2.3 (cont'd)

13.G5 mother relationship	.06	.06	-.09	-.03	.09	.05	.02	.09	.05	.03	.00	-.04	1.00				
14.G5 father relationship	-.04	.06	-	-.02	.06	.03	.06	.03	-.01	.08	-.16	-.25	.55**	1.00			
15. G5 Bullying	-.02	-	.01	-.05	.01	.07	-.01	.01	-.08	.10	-.04	.14	-.23**	-	1.00		
16.G5 Internalizing Problems	.02	.00	-.10	.05	.01	-.02	-.02	.02	-.23*	.20	-.07	.16	-.14*	-.14*	.20**	1.00	
17.G5 Externalizing Problems	-.11*	-.06	-	-.00	-	.00	-.10	.02	-.19	-.06	-.12	.12	-.13*	-	.27**	.65*	1
			.17**		.09									.21**		*	.00

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

Note:

1. "36th" means variable measured when child was 36th month old.
2. "Pos" means child's perception of parent as positive parenting figure at TPK.
3. "Dis" means child's perception of parent as disciplinary parenting figure at TPK.
4. "Mother/father relationship" means child's perception of their relationship with mother/father at 5th grade.

Table 2.4

Regression Model: Father Involvement → TPK Sense of Security

	Variables	Child's Perception of Father as Positive Parenting Figure			Child's Perception of Father as Positive Parenting Figure			Child's Perception of Father as Disciplinary Parenting Figure		
		B	SE B	β	B	SE B	β	B	SE B	β
Step 1	Child Gender	-.14	.06	-.47*	-.01	.03	-.04	-.05	.03	-.15
	Child Age	.01	.01	.18	-.00	.00	-.07	-.00	.00	-.11
Step 2	Father Age	-.01	.00	-.45*	-.00	.00	-.13	-.00	.00	-.05
	Father Years in School	.01	.01	.09	.01	.00	.21*	.01	.01	.10
Step 3	Pos Perceptions of Mother	.26	.11	.44*	.40	.06	.58***			
	Perceptions of Mother as Disc							.35	.08	.41***
Step 4	Father Supportiveness	.08	.03	.40*						
	Father play/caregiving				-.06	.02	-.24**	-.00	.03	-.02
N		27			103			103		
R ²		.27			.40			.12		
ΔR^2		.14			.05			.00		
F		2.61			12.19			3.36		

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

Table 2.5

Regression Model: Supportiveness of Father Involvement → G5 Father-child Relationship

	Variables	B	SE B	β
Step 1	Child Gender	-.03	.09	-.02
	Child Age	.02	.01	.18*
Step 2	Father Age	-.01	.01	-.15
	Father Years in School	.03	.02	.14
Step 3	Child-mother relationship	.89	.11	.66***
Step 4	Average supportiveness of 36 th month and TPK	-.04	.06	-.06
N		90		
R ²		.43		
ΔR^2		.00		
F		12.23		

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

Table 2.6

Regression Model: Play/Caregiving Activities in Father Involvement → G5 Father-Child Relationship

	Variables	B	SE B	β
Step 1	Child Gender	-.06	.06	-.06
	Child Age	.01	.01	.05
Step 2	Father Age	-.01	.00	-.13*
	Father Years in School	.01	.01	.07
Step 3	Child-mother relationship	.69	.07	.53***
Step 4	Average play/caregiving of 36 th month and TPK	-.01	.05	-.02
N		227		
R ²		.29		
ΔR^2		.00		
F		16.54		

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

Table 2.7

Regression Model: TPK Sense of Security → G5 Father-Child Relationship

	Variables	Child's Perception of Father as Positive Parenting Figure			Child's Perception of Father as Disciplinary Parenting Figure		
		B	SE B	β	B	SE B	B
Step 1	Child Gender	-.01	.15	-.01	-.03	.15	-.03
	Child Age	.01	.02	.05	.01	.02	.04
Step 2	Father Age	-.01	.01	-.15	-.01	.01	-.14
	Father Years in School	.04	.03	.18	.05	.03	.20
Step 3	Pos Perceptions of Mother	.08	.35	.04			
	Perceptions of Mother as Disc				.08	.40	.03
Step 4	Child-mother relationship	.94	.19	.60***	.88	.19	.57***
Step 5	Pos Perceptions of Father	.17	.54	.05			
	Perceptions of Father as Disc				-.59	.46	-.17
N		53			53		
R ²		.30			.32		
δR^2		.00			.02		
F		4.14			4.48		

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

Table 2.8

Regression Model: G5 Father-child Relationship → G5 Outcomes

	Variables	G5 Bullying		G5 Internalizing Problems				G5 Externalizing Problems		
		B	SE B	B	B	SE B	β	B	SE B	β
Step 1	Child Gender	.10	.28	.02	1.11	.68	.10	-.53	.88	-.04
	Child Age	-.07	.03	-.14*	-.05	.07	-.04	-.12	.09	-.08
Step 2	Father Age	-.02	.02	-.06	-.14	.05	-.19**	-.22	.06	-.22***
	Father Years in School	-.03	.04	-.05	.09	.10	.06	.10	.13	.05
Step 3	G5 Child-Mother relation	-.51	.43	-.09	-1.76	1.04	-.13	-1.40	1.34	-.08
Step 4	G5 Father-child relation	-.98	.34	-.22**	-1.04	.81	-.10	-2.71	1.04	-.19**
N		249		250				250		
R ²		.08		.05				.08		
ΔR ²		.03		.01				.03		
F		4.53		3.25				4.49		

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

Table 2.9

Post-hoc Analysis for Hypothesis 1

	Variables	Child's Perception of Father as Positive Parenting Figure		Child's Perception of Father as Disciplinary Parenting Figure			β
		B	SE B	B	B	SE B	
Step 1	Child Gender	-.01	.03	-.04	-.05	.03	-.16
	Child Age	-.00	.00	-.07	-.00	.00	-.10
Step 2	Father Age	-.00	.00	-.13*	-.00	.00	-.08
	Father Years in School	.01	.01	.21	.01	.01	.09
Step 3	Pos Perceptions of Mother	.40	.06	.58***			
	Perceptions of Mother as Disc				.35	.08	.40***
Step 4	Play/Caregiving 36 th mon	-.03	.03	-.12	-.03	.03	-.14
Step 5	Play/Caregiving TPK	-.03	.02	-.14	.03	.03	.11
N		103			103		
R ²		.39			.13		
δR^2		.01			.01		
F		10.34			3.10		

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

Bibliography

BIBLIOGRAPHY

- Achenbach, T. M., & Rescorla, L.A. (2001). Manual for the ASEBA school-age forms and profiles. Burlington: University of Vermont Research Center for Children, Youth, & Families.
- Ainsworth, M. D.S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- Aldous, J., Mulligan, G. M., & Bjarnason, T. (1998). Fathering over time: What makes the difference? *Journal of Marriage and Family*, 60 (4), 809-820.
- Anan, R. M., & Barnett, D. (1999). Perceived social support mediates between prior attachment and subsequent adjustment: A study of urban African American children. *Developmental Psychology*, 35 (5), 1210-1222.
- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Relationships to well-being in adolescence. *Journal of Youth and Adolescence*, 16 (5), 427-454.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Bascoe, S. M., Davies, P. T., Sturge-Apple, M. L., & Cummings, E. M. (2009). Children's representations of family relationships, peer information processing, and school adjustment. *Developmental Psychology*, 45 (6), 1740-1751.
- Besser, A., & Blatt, S. J. (2007). Identity consolidation and internalizing and externalizing problem behaviors in early adolescence. *Psychoanalytic Psychology*, 24 (1), 126-149.
- Boller, K., Bradley, R., Cabrera, N., Raikes, H. H., Pan, B., Shears, J. & Roggman, L. (2006). The Early Head Start Father Studies: Design, data collection, and summary of father presence in the lives of infants and toddlers. *Parenting: Science and Practice*, 6 (2), 117-14.
- Booth, A., Johnson, D. R., Granger, D. A., Crouter, A. C., & McHale, S. (2003). Testosterone and child and adolescent adjustment: The moderating role of parent-child relationships. *Developmental Psychology*, 39(1), 85-98.
- Booth, A., Scott, M. E., & King, V. (2010). Father residence and adolescent problem behavior: Are youth always better off in two-parent families? *Journal of Family Issues*, 31 (5), 585-605.
- Bowlby, J. (1969). *Attachment and Loss*, Vol. 1: Attachment. London: Hogarth.

- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1988). *A Secure Base: Clinical Applications of Attachment Theory*. Routledge, London.
- Brady-Smith, C., Ryan, R. M., Berlin, L. J., Brooks-Gunn, J., & Fuligni, A. S. (2001). 36-month parent-child interaction rating scales for the puzzle task assessment. New York: Early Head Start Research and Evaluation Project, Center for Children and Families, Teachers College, Columbia University.
- Bretherton, I., Oppenheim, D., Buchsbaum, H., Emde, R. N., & the MacArthur narrative Group (1990). MacArthur Story-Stem Battery. Unpublished manual.
- Bronte-Tinkew, J., Moore, K. A., Capps, R. C. & Zaff, J. (2006). The influence of father involvement on youth risk behaviors among adolescents: A comparison of native-born and immigrant families. *Social Science Research*, 35 (1), 181-209.
- Burleson, B. R., Delia, J. G., & Applegate, J. L. (1992). Effects of communication and children's social-cognitive and communication skills on children's acceptance by the peer group. *Family Relations*, 41 (3), 264-272.
- Bush, C. A., Mullis, R. L., & Mullis, A. K. (2000). Differences in empathy between offender and nonoffender youth. *Journal of Youth and Adolescence*, 29, 467-478.
- Cabrera, N. J., Shannon, J. D., & Tamis-LeMonda, C. (2007). Fathers' influence on their children's cognitive and emotional development: From toddlers to Pre-K. *Applied Developmental Science*, 11(4), 208-213.
- Cabrera, N. J., Tamis-LeMonda, C. S., Bradley, R. H., Hofferth, S., & Lamb, M. E. (2000). Fatherhood in the twenty-first century. *Child Development*, 71 (1), 127-36.
- Cabrera, N. J., Tarkow, A., & Shannon, J. D. (2006). Fathers' and mothers' contribution to their preschoolers' emotional regulation. Presented at World Association of the Infant Mental Health, July, Paris, France.
- Carlson, M. J. (2006). Family structure, father involvement, and adolescent behavioral outcomes. *Journal of Marriage and Family*, 68 (1), 137-154.
- Cassidy, T. (2008). Bullying and victimisation in school children: The role of social identity, problem-solving style, and family and school context. *Social Psychology of Education*, 12 (1), 63-76.
- Chen, X., Chang, L., He, Y., & Liu, H. (2005). The peer group as a context: Moderating effects on relations between maternal parenting and social and school adjustment in Chinese children. *Child Development*, 76 (2), 417- 434.

- Coley, R. L., & Chase-Lansdale, P. L. (1999). Stability and change in paternal involvement among urban African American fathers. *Journal of Family Psychology*, 13 (3), 416-435.
- Coll, C. G., & Szalacha, L. A. (2004). The multiple contexts middle childhood. *The Future of Children*, 14(2), 80-97.
- Collins, W. A., & Russell, G. (1991). Mother-child and father-child relationships in middle childhood and adolescence: A developmental analysis. *Developmental Review*, 11 (2), 99-136.
- Craven, R. G., Marsh, H. W., & Debus, R. L. (1991). Effects of internally focused feedback and attributional feedback on enhancement of academic self-concept. *Journal of Educational Psychology*, 83 (1), 17-27.
- Cox, M. J., Owen, M. T., Henderson, V. K., & Margand, N. A. (1992). Prediction of infant-father and infant-mother attachment. *Developmental Psychology*, 28 (3), 474-483.
- Deutsch, F. M., Servis, L. J., & Payne, J. D. (2001). Paternal participation in child care and its effects on children's self-esteem and attitudes toward gendered roles. *Journal of Family Issues*, 22 (8), 1000-1024.
- Diamond, G. S., & Liddle, H. A. (1999). Transforming negative parent-adolescent interactions: From impasse to dialogue. *Family Process*, 38 (1), 5-26.
- Downer, J. T., & Mendez, J. L. (2005). African American father involvement and preschool children's school readiness. *Early Education & Development*, 16 (3), 317-340.
- Duffy, O. B., Clair, T. N., Egeland, B., & Dinello, M. (1972). Relationship of intelligence, visual-motor skills, and psycholinguistic abilities with achievement in the third, fourth, and fifth grades: A follow-up study. *Journal of Educational Psychology*, 63 (4), 358-362.
- Elder, G. H. Jr. (1985). *Life course dynamics: Trajectories and transitions, 1968-1980*. Ithaca: Cornell University Press.
- Eliot, M., & Cornell, D.G. (2009). Bullying in middle school as a function of insecure attachment and aggressive attitudes. *School Psychology International*, 30 (2), 201-214.
- Emde, R. N., Wolf, D. P., & Oppenheim, D. (2010). *Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent-child narratives*. NY: Oxford University Press.
- Espelage, D. L., & Holt, M. K. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse*, 2 (2-3), 123-142.

- Estell, D. B., Farmer, T. W., Irvin, M. J., Crowther, A., Akos, P., & Boudah, D. J. (2009). Students with exceptionalities and the peer group context of bullying and victimization in late elementary school. *Journal of Child and Family Studies*, 18 (2), 136-150.
- Fagan, J., & Iglesias, A. (2000). The relationship between fathers' and children's communication skills and children's behavior problems: A study of Head Start children. *Early Educational and Development*, 11 (3), 307-320.
- Finnegan, R. A., Hodges, E. V., & Pery, D. G. (1998). Victimization by peers: Associations with children's reports of mother-child interaction. *Journal of Personality and Social Psychology*, 75 (4), 1076-1086.
- Flouri, E. (2008). Fathering and adolescents' psychological adjustment: The role of fathers' involvement, residence and biology status. *Child: Care, Health and Development*, 34 (2), 152-161.
- Flouri, E., & Buchanan, A. (2002). Life satisfaction in teenage boys: The moderating role of father involvement and bullying. *Aggressive Behavior*, 28 (2), 126-133.
- Flouri, E., & Buchanan, A. (2003). The role of mother involvement and father involvement in adolescent bullying behavior. *Journal of Interpersonal Violence*, 18 (6), 634-644.
- Frosch, C. A., Mangelsdorf, S. C., & Mchale, J. L. (2000). Marital behavior and the security of preschooler-parent attachment relationships. *Journal of Family Psychology*, 14 (1), 144-161.
- Galinsky, E. (1999). *Ask the children: What America's children really think about working parents*. New York: William Morrow.
- Gardner, M., & Steinberg, L. (2005). Peer influence on risk taking, risk preference, and risk decision making in adolescence and adulthood: An experimental study. *Developmental Psychology*, 41 (4), 625-635.
- González, S. R., Ciuffreda, K. J., Hernandez, L. C., & Escalante, J. B. (2008). The correlation between primitive reflexes and saccadic eye movements in 5th grade children with teacher-reported reading problems. *Optometry and Vision Development*, 39 (3), 1557-4113
- Gordis, E. B., Margolin, G., & John, R. S. (2001). Parents' hostility in dyadic marital and triadic family settings and children's behavior problems. *Journal of Consulting and Clinical Psychology*, 69 (4), 727-734.
- Griffin, K. W., Botvin, G. J., Scheier, L. M., Diaz, T., & Miller, N. L. (2000). Parenting practices as predictors of substance use, delinquency, and aggression among urban minority youth: Moderating effects of family structure and gender. *Psychology of Addictive Behaviors*, 14 (2), 174-184.

- Grossmann, K., Grossmann, K. E., Fremmer-Bombik, E., Kindler, H., Scheuerer-Englisch, H., & Zimmermann, P. (2002). The Uniqueness of the child-father attachment relationship: Fathers' sensitive and challenging play as a pivotal variable in a 16-year longitudinal study. *Social Development, 11* (3), 307-331.
- Halme, N., Astedt-Kurki, P., & Tarkka, M.-T. (2009). Fathers' involvement with their preschool-age children: How fathers spend time with their children in different family structures. *Child & Youth Care Forum, 38* (3), 103-119.
- Harvey, E. (1999). Short-term and long-term effects of early parental employment on children of the national longitudinal survey of youth. *Developmental Psychology, 35* (2), 445-459.
- Hawkins, D. N., Amato, P. R., & King, V. (2007). Nonresident father involvement and adolescent well-being: Father effects or child effects? *American Sociological Review, 72* (6), 990-1010.
- Henricsson, L., & Rydell, A.-M. (2006). Children with behavior problems: The influence of social competence and social relations on problem stability, school achievement and peer acceptance across the first six years of school. *Infant and Child Development, 15* (4), 347-366.
- Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology, 35* (1), 94-101.
- Hoffmann, J. P. (2002). The community context of family structure and adolescent drug use. *Journal of Marriage and Family, 64* (2), 314-330.
- Juvonen, J., & Graham, S. (2001). *Peer harassment in school: The plight of the vulnerable and victimized*. (Eds.) New York: Guilford Press.
- Kazura, K. (2000). Fathers' qualitative and quantitative involvement: An investigation of attachment, play, and social interactions. *The Journal of Men's Studies, 9* (1), 41-57.
- Kelley, M. L., Smith, T. S., Green, A. P., Berndt, A. E., & Rogers, M. C. (1998). Importance of fathers' parenting to African-American toddler's social and cognitive development. *Infant Behavior & Development, 21* (4), 733-744.
- Lamb, M. E. (2000). The history of research on father involvement. *Marriage and Family Review, 29* (2-3), 23-42.
- Lamb, M. E., Pleck, J., Charnov, E. L., & Levine, J. A. (1987). A biosocial perspective on paternal behavior and involvement. In J. B. Lancaster, J. Altman, A. Rossi, & L. R. Sherrod (Eds.), *Parenting across the life span: Biosocial perspective* (pp. 111-142). New York: Aldine de Gruyter.

- Loeber, R., Green, S. M., Lahey, B. B., Stouthamer-Loeber, M. (1989). Optimal informants on childhood disruptive behaviors. *Developmental and Psychopathology*, 1 (4), 317-337.
- Love, J. M., Kisker, E. E., Ross, C., Raikes, H., Constantine, J., Boller, K., ...Vogel. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents: Lessons for policy and programs. *Developmental Psychology*, 41 (6), 885–901.
- Love, J. M., Kisker, E. E., Ross, C. M., Schochet, P. Z., Brooks-Gunn, J., Paulsell, D... Brady-Smith, C. (2002). *Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start*. Washington, DC: US Department of Health and Human Services.
- Mackey, W. C., & Immerman, R. S. (2004). The presence of the social father in inhibiting young men's violence. *Mankind Quarterly*, 44 (3-4), 339-366.
- Marsh, H. W. (1990). The structure of academic self-concept: The Marsh/Shavelson Model. *Journal of Educational Psychology*, 82 (4), 623-636.
- Marsh, H. W. (1994). Using the national longitudinal study of 1988 to evaluate theoretical models of self-concept: The Self-Description Questionnaire. *Journal of Educational Psychology*, 86 (3), 439-456.
- Marsh, H. W. Byrne, B.M., & Shavelson, R. (1988). A multifaceted academic self-concept: Its hierarchical structure and its relation to academic achievement. *Journal of Educational Psychology*, 80 (3), 366-380.
- Marsh, H. W., Graven, R. G., & Debus, R. (1991). Self-concepts of young children 5 to 8 years of age: Measurement and multidimensional structure. *Journal of Educational Psychology*, 83 (3), 377-392.
- McBride, B. A., Schoppe-Sullivan, S. J., & Ho, M.-H. (2005). The mediating role of fathers' school involvement on student achievement. *Journal of Applied Developmental Psychology*, 26 (2), 201-216.
- McBride, B. A., Schoppe, S. J., Rane, T. R. (2002). Child characteristics, parenting stress, and parental involvement: Fathers versus mothers. *Journal of Marriage and Family*, 64 (4), 998-1011.
- Moss, E., Rousseau, D., Parent, S., St-Laurent, D., & Saintonge, J. (1998). Correlates of attachment at school age: Maternal reported stress, mother-child interaction, and behavioral problems. *Child Development*, 69 (5), 1390-1405.
- Newland, L. A., Coyl, D. D., & Chen, H.-H. (2010). Fathering and attachment in the USA and Taiwan: Contextual predictors and child outcomes. *Early Child Development and Care*, 180 (1-2), 173-191.

- Newland, L. A., Coyl, D. D., & Freeman, H. (2008). Predicting preschoolers' attachment security from fathers' involvement, internal working models, and use of social support. *Early Child Development and Care*, 178 (7-8), 785-801.
- NICHD Early Child Care Research Network. (2000). Factors associated with fathers' caregiving activities and sensitivity with young children. *Journal of Family Psychology*, 14 (2), 200-219.
- Nord, C. W., & West, J. (2001). *Fathers' and mothers' involvement in their children's schools by family type and resident status*. (NCES 2001--032). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 2001.
- Olweus, D. (1991). Bully/victim problems among school children: Some basic facts and effects of a school-based intervention program, in D. Pepler and K. Rubin (Eds.) *The development and treatment of childhood aggression*, (pp. 411-18). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Paquette, D. (2004). Theorizing the Father-Child Relationship: mechanisms and developmental outcomes. *Human Development*, 47 (4), 193-219.
- Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, 29 (4), 611-621.
- Post, P. (1999). Impact of child-centered play therapy on the self-esteem, locus of control, and anxiety of at-risk 4th, 5th, and 6th grade students. *International Journal of Play Therapy*, 8 (2), 1-18.
- Quinlan, R. J. (2003). Father absence, parental care, and female reproductive development. *Evolution and Human Behavior*, 24 (6), 376-390.
- Raikes, H., Boller, K., van Kammen, W., Summers, J., Raikes, A., Laible, D., ...Christensen, L. (2002). *Father involvement in early head start programs: A practitioners study*. Princeton, NJ: Mathematica Policy Research.
- Robinson, J. L. (2007). Story stem narratives with young children: Moving to clinical research and practice. *Attachment and Human Development*, 9 (3), 179-185.
- Robinson, J., Mantz-Simmons, L., MacFie, J., Kelsay, K., Holmberg, J. & the MacArthur Narrative Working Group. (2004). MacArthur Narrative Coding Manual.
- Schacht, P. M., Cummings, E. M., & Davies, P. T. (2009). Fathering in family context and child adjustment: A longitudinal analysis. *Journal of Family Psychology*, 23 (6), 790-797.

- Schechter, D. S., Zygmunt, A., Coates, S. W., Davies, M., Trabka, K. A., McCaw, J., ... Robinson, J. (2007). Caregiver traumatization adversely impacts young children's mental representations on the MacArthur Story-Stem Battery. *Attachment Human Development*, 9 (3), 187-205.
- Schermerhorn, A. C., Cummings, E. M., & Davies, P. T. (2008). Children ' s representations of multiple family relationships: Organizational structure and development in early childhood. *Journal of Family Psychology*, 22 (1), 89 -101.
- Schneider, B. H., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children's peer relations: A quantitative review. *Developmental Psychology*, 37(1), 86-100.
- Sedlak, A. J., & Broadhurst, D. D. (1996). *The Third National Incidence Study of Child Abuse and Neglect: Final Report*. US Department of Health and Human Services. National Center on Child Abuse and Neglect. Washinton, D.C.
- Shannon, J. D., Tamis-LeMonda, C.S., & Cabrera, N. J. (2006). Fathering in infancy: mutuality and stability between 8 and 16 months. *Parenting: Science and Practice*, 6 (2-3), 167-188.
- Sorenson, E., & Zibman, C. (2001). Getting to know poor fathers who do not pay child suport. *Social Service Review*, 75, 420-434.
- Stephenson, P., & Smith, D. (1989). Bullying in junior school. In Tattum, D. P. & Lane, D. A. (Eds.), *Bullying in schools* (pp. 45-58). Stroke-on-Trent, UK: Trentham.
- Summers, J. A., Raikes, H., Butler, J., Spicer, P., Pan, B., Shaw, S., ... Johnson, M. K. (1999). Low-income fathers' and mothers' perceptions of the father role: A qualitative study in four Early Head Start communities. *Infant Mental Health Journal*, 20 (3), 291-304.
- Szewczyk-Sokolowski, M., Bost, K. K., & Wainwright, A. B. (2005). Attachment, temperament, and preschool children's peer acceptance. *Social Development*, 14 (3), 379-397.
- Tamis-Lemonda, C. S., & Cabrera, N. J. (1999). Perspectives on father involvement: research and policy. *Social Policy Report-Society for Research in Child Development XIII* (2), 1-26.
- Tamis-LeMonda, C. S., Shannon, J. D., Cabrera, N. J., & Lamb, M. E. (2004). Fathers and mothers at play with their 2- and 3-year-olds: Contributions to language and cognitive development. *Child Development*, 75 (6), 1806-1820.
- Teachman, J. D. (2004). The childhood living arrangement of children and the characteristics of their marriages. *Journal of Family Issues*, 25 (1), 86-111.

- Vogel, C., Bradley, R., Raikes, H., Boller, K., & Shears, J. (2006). Relation between father connectedness and child outcomes. *Parenting: Science and Practice*, 6 (2), 189-209.
- Werner, E. E. (1990). High-risk children in young adulthood: A longitudinal study from birth to 32 years. *Annual Progress in Child Psychiatry and Child Development*, 180-193.
- Werner, E. E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study. *Developmental and Psychopathology*, 5 (4), 503-515.
- West, J., Ingels, J., Carlson, B.L., Luyegu, A., Dugger, M., Bloomenthal, A., ...& Martin, A., (2010). Early Head Start 5th-Grade Follow-Up User's Guide: Final Report.
- Wical, K. A., & Doherty, W. J. (2005). How reliable are fathers' reports of involvement with their children?: A methodological report. *Fathering*, 3 (1), 81-93.
- Xu, F., & Shi, J. (1992). A preliminary study on the correlation of spatial ability and geometric ability of 4th-and 5th-grade students. *Acta Psychologica Sinica*, 24 (1), 20-27.
- Yogman, M. W., Kindlon, D., & Earls, F. (1995). Father involvement and cognitive/behavioral outcomes of preterm infants. *Journal of the American Academy of Child & Adolescent Psychiatry*, 34 (1), 58-66.
- Youngstrom, E., Loeber, R., & Stouthamer-Loeber, M. (2000). Patterns and correlates of agreement between parent, teacher, and male adolescent ratings of externalizing and internalizing problems. *Journal of Consulting and Clinical Psychology*, 68 (6), 1038-1050.