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**Fathers of children with adolescent mothers: Involvement and children's
developmental outcomes at 24 months of age**

By

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A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

Major: Human Development and Family Studies

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ABSTRACT

Adolescent pregnancy can create many stressors and difficulties for the adolescent mother, father, and the young child. The current study examines the impact that fathers of children with adolescent mothers can have on children's developmental outcomes as well as adolescent mothers reported satisfaction with life. Data were taken from the Parenting For the First Time Study with data on father involvement and maternal satisfaction taken at 4, 8, and 18 months, and child outcome data taken when the child was 24 months. Direct and indirect effects of father involvement were examined using Structural Equation Modeling. Despite an excellent-fitting model, regression weights were not significant and the overall hypothesis was not supported. Implications and future research are discussed based on current research and significant correlational data.

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CHAPTER 1: GENERAL INTRODUCTION

When considering adolescent parenting from a family systems standpoint, it is a complicated situation. At the simplest level, one will consider three individuals: the adolescent mother, fathers of children with adolescent mothers, and child of these parents. Each of these three individuals brings to this small group their own characteristics and has a reciprocal relationship among them. The adolescent mother must cope with the typical challenges and changes of adolescence (Campa & Eckenrode, 2006; Mollborn, 2007) while at the same time making an early transition to motherhood. In this case, two high-stress forces at work: the stage of adolescence is marked by many challenges and motherhood at any age is a difficult transition. The cumulative effect of these stressors can cause adjustment problems for the young mother (Mistry, Stevens, Sareen, De Vogli, & Halfon, 2007; Rolfe, 2008). This raises questions of mothers satisfaction with life, satisfaction with the way her life is going in general and how maternal satisfaction is influenced by help from the adolescent father.

Similarly, fathers of children with adolescent mothers may also be dealing with many stressors and challenges whether they are adult fathers or adolescent. They may be dealing with stressors of adolescence, socioeconomic status issues, job issues, and the adjustment of becoming a father (Mollborn & Lovegrove, 2011; Thompson & Crase, 2004). The fathers of children with adolescent mothers may have other disadvantages that coincide with being a non-resident father (Bronte-Tinkew, Ryan, Carrano, & Moore, 2007; Saleh & Hilton, 2011). For instance, he must decide whether or not to be involved on an interpersonal level with his child, and determine how to contribute financially for his child's welfare (Lin & McClanahan, 2007; Paschal, Lewis-Moss, & Hsiao, 2011).

Finally, the child is coming into a world already impacted by stressors in this family. The child's mother and father may not have sufficient knowledge about child rearing and child development to be equipped for raising a child (Dukewich, Borkowski, & Whitman, 1996). As a result, the child is at risk for poor parent-child interactions and other forms of child maltreatment (Huang & Lee, 2008; Lee, 2009). Children of adolescent parents tend to have poorer developmental outcomes, including lower cognitive, emotional, and social functioning than children from adult parent homes (Howard, Lefever, Borkowski, & Whitman, 2006).

At the individual level, the adolescent mother, father, and child have challenges that are uniquely combined into the family unit. One of the most common issues, on top of the individual challenges, is that the family often is of lower socio-economic status because of lack of education (Mollborn, 2007) and lower job quality (Pogarsky, Thornberry, & Lizzotte, 2006). The problems compound as living conditions tend to be of lower quality (Mersky & Reynolds, 2007), and stress is considerably higher than in adult family homes (Mistry et al., 2007).

These challenges may create an unhealthy living situation. It becomes necessary to examine ways in which these stressors and challenges can be lessened and ways these three individuals can be supported for more healthy functioning. Research has clearly indicated that adult father involvement is beneficial for children (Vogel, Bradley, Raikes, Boller, Shears, 2006), mothers, and fathers. When adult fathers are involved with their children they provide emotional support for mothers in caring for children and spending time with them. This alleviates much of the stress and responsibility that mothers feel in caring for their children (Coley & Schindler, 2008). Adult fathers benefit in caring for their children by

indicating better emotional and psychological feelings than fathers who are not involved (Schindler, 2010). Most importantly, children of involved fathers have higher grades in school, better cognitive functioning, fewer negative behaviors, and better socio-emotional health at all ages (Vogel, et al., 2006).

There is a clear lack of research around adolescent parenting and whether these findings hold true for fathers of children with adolescent mothers. Specifically, the question remains, whether father involvement directly benefits the child and mother and/or whether his involvement provides positive effects for the mother and therefore benefits the child indirectly. A main assumption of family systems theory is that parts of the system are interconnected (White and Klein, 2002) and this paper is in part founded on that assumption in considering father's direct and indirect effect on children. For instance, an example of a direct effect comes from the father-child system. One possibility is that when fathers play with children or take care of daily activities they will have a direct effect on children's outcomes because they directly interacted with the child. Another possibility comes from the father-mother system as it effects the overall family system. If fathers support the child's mother by being present and offering either financial or emotional support (or both) to the mother he may also be improving the overall environment of the family system, therefore having an indirect effect on the child's outcomes. Specifically, if fathers provide financial support to the mother and child, the adolescent mother may feel less stress creating a more balanced environment for their child.

Much of the research highlights the stressors and challenges of adolescent parenting and in the United States it is typically seen as a negative to become a parent during adolescence (Brubaker & Wright, 2006). This paper will highlight literature presenting the

potential risks typically observed in adolescent parenting with the purpose of examining potential resiliency factors that aid adolescent mothers, fathers, and the children of parents. This paper will examine the current research on adolescent mothers, adolescent and adult father involvement, and children's outcomes related to father involvement from a United States framework. This discussion will be followed by a study looking at these relationships with longitudinal, multi-site data from the Parenting for the First Time Project (Borkowski, Ramey, Ramey, Carta, Warren, 2001).

CHAPTER 2: REVIEW OF LITERATURE

Adolescent Pregnancy Statistics

Between 1991 and 2005 researchers and practitioners working with adolescents were encouraged by a decline in the number of adolescent births. During that time, births to mothers age 15-17 decreased by 45%, and births to mothers age 18-19 decreased by 26%. After such a great span of time with a decline in adolescent pregnancy, the trend shifted in 2006 when researchers have also reported a drop in contraceptive use (Santelli, Orr, Lindberg, & Diaz, 2009). That year the rate of adolescent pregnancy increased by about 3% in each age group (CDC, 2009). Over 400,000 births were to mothers between the ages of 10-19, which represents a birth rate of 20 births per every 1000 adolescents age 15-17, and 80 births per every 1000 adolescents age 18-19 (CDC, 2008). These statistics do not indicate a major spike in adolescent pregnancy. However, the numbers indicate that there are still a significant number of adolescent births, and this is a societal issue that needs continued investigation to support more positive outcomes for children of these mothers.

Adolescent Mothers

Precursors to Adolescent Pregnancy. Adolescent girls who become pregnant have several characteristics that set them apart from girls who do not become pregnant and serve as precursors to motherhood (Fergusson & Woodward, 2000; Mersky & Reynolds, 2007; Mollborn, 2007). These characteristics can be categorized into two types—maternal history of adolescent parenting and socioeconomic status (SES) characteristics—with more specific influences branching from these characteristics.

Maternal history of adolescent parenting. Research has shown that adolescent girls are more likely to experience a pregnancy if their own mothers were adolescent mothers.

Risk of an adolescent pregnancy increases further in this situation if her mother had never married (Campa & Eckenrode, 2006). Similarly, Mersky and Reynolds (2007) found that adolescent girls were at higher risk of pregnancy if their own mothers had not completed high school at the time of their birth. This may be due in part to demographic characteristics like socioeconomic status (SES) and education which are described below.

Demographic characteristics. Adolescent mothers may come from families that struggle financially, and often report lower SES than their non-parenting peers (Mollborn, 2007). Similarly, adolescent girls' risk of pregnancy is positively related to receiving public assistance at an early age (Mersky & Reynolds, 2007). These findings indicate a relationship between adolescent pregnancy and lower SES.

In addition to SES, research has found that those who become adolescent mothers are at an educational disadvantage before they become adolescent mothers. They are at a greater disadvantage because of their lower SES, have lower academic skills in 8th grade than non-parenting peers, and continue to achieve less education after the birth of their child (Mollborn, 2007). They tend to achieve lower grades in school and drop out before their non-parenting peers. A limited education also limits future employment opportunities, and leads to lower SES attainment, and lower family well-being (Pogarsky, Thornberry, & Lizotte, 2006).

Sexual Activity and Adolescent Girls. Sexual activity in adolescents typically takes place between the ages of 15 and 18, and is not usually for the purpose of reproduction (Benson, 2004). Adolescent girls report having sex to feel accepted and loved, to keep their partner in the relationship, and to become more popular, but rarely is it reported for intended pregnancy. They tend to report feeling disappointed with the discovery of their pregnancy

and the news of their pregnancy is then accompanied by many negative responses from friends and family members (Brubaker & Wright, 2006). In a study with adolescent mothers ranging from 14-19 years, researchers found that adolescent mothers describe and feel a great deal of loss including loss of physical attractiveness, loss of innocence and respect, and loss of childhood freedom (Brubaker & Wright, 2006). These precursors and characteristics of pregnancy are examples of early systems that influence the adolescent mother.

Cognitive Readiness to Parent. Adolescent mothers have limited life experiences and are not cognitively prepared for an unexpected pregnancy and the hardships that accompany it. Compared with adult mothers, adolescent mothers use harsh punishment (Lee, 2009) and more spanking with their children (Huang & Lee, 2008). Their lack of experience and knowledge about child development may create unrealistic expectations of their children resulting in harsh treatment (Dukewich, Borkowski, & Whitman, 1996). This lack of understanding of mothering and of their child has been shown to result in social and emotional setbacks for both mother and child (Hurlbut & McDonald, 1997).

Environmental and family stressors can compound these developmental risks and lower mother's psychological functioning. Mistry, Stevens, Sareen, De Vogli, and Halfon (2007) examined characteristics for mothers that may induce stress. Mothers who were younger were among those to experience greater stress. In addition to maternal age, mothers who were single and of a lower income were more likely to experience stress and be in poor mental health. The variables related to poorer mental health in the study by Mistry and colleagues are characteristic of adolescent mothers (Campa & Eckenrode, 2006). They are young, typically from a lower-income household, and single. They also may not receive a great deal of emotional support or help with daily routines and tasks once they are mothers,

which may put them at additional risk of poor mental health (Mistry et al., 2007). Adolescent mothers are truly in a compounded, stress inducing, situation, and are certainly in need of social support from people around them (Campa & Eckenrode, 2006).

Support for adolescent mothers. Social support is a necessary protective factor for both children and adolescent mothers. The question then becomes who is providing support to these young mothers. Mothers with social support and functional support in their daily lives are psychologically healthier than those who do not receive any social support (Mistry et al, 2006), and children indicate better outcomes with outside support (Howard et al, 2007). Much of the current research focuses on the adolescent mothers own parents or family providing support by giving monetary contributions or providing essentials like food, clothing, medicine, and housing. Adolescent mothers' own mothers are often able to demonstrate proper care of infants and typically display greater sensitivity and knowledge than the adolescent mother (Barnett, et al., 2008).

Mothers of all ages at times need a great deal of support from the social networks in their lives (Gee & Rhodes, 2007). Not only are adolescent mothers dealing with typical mothering stressors such as lacking time, feeling drained and having constant responsibility, but they also face obstacles such as continuing education, pursuing goals, and pressure they may feel from friends. To help with these stressors, the adolescent mother's social network may offer a large source of resilience (Chen et al. 1995; Unger & Cooley, 1992). She may be able to continue to pursue her education and other goals, as well as learn from the examples around her for daily mothering tasks (Unger & Cooley, 1992).

Families can offer assistance by caring directly for the child as well as by giving assistance and direction for the adolescent to take care of the child herself. Studies have

shown that when adolescents received support from their mothers, and when the adolescent-mother relationship was of high quality, adolescents felt more competent in parenting their children (Oberlander, Black & Starr, 2007). Since most adolescent mothers live with their families of origin (Gibson-Davis, 2008) there are important support issues to be considered in research.

Social support is clearly beneficial for adolescent mothers, but little research has concentrated on the benefit of adolescent father involvement. For years, research has indicated a strong positive outcome for children and families when adult fathers are involved with their children (Goldberg, Tan, & Thorsen, 2009; Vogel, et al., 2006). It is logical that adolescent fathers may also play a beneficial role in the lives of their children and their children's mother. Much of the research on adolescent father involvement finds them to be absent or uninvolved (Coleman & Dennison, 1998). More research is needed to understand the potential role of adolescent fathers as a source of social support for adolescent mothers and their children.

Howard, Lefever, Borkowski, and Whitman (2006) examined adolescent fathers as a source of support to adolescent mothers. Over a span of 10 years they used interviews and observation to collect data about mothers and their well-being, father involvement, and children's outcomes. Results from this study indicate that children in situations of high maternal risk and high father involvement benefit both cognitively and behaviorally. Through interviewing children's teachers at 8 years and 10 years of age, researchers found that children were less likely to act out in school when father involvement was high (Howard et al., 2006).

Perceptions and expectations of father involvement. Feedback and perceptions are core concepts in family systems theory (White and Klein, 2002). In the case of adolescent pregnancy and parenting, these are very important concepts to consider. Adolescent mother's perceptions of father involvement may greatly influence her behavior toward the father as well as her satisfaction with him and her overall satisfaction. For instance, her perception may determine whether or not she allows his involvement. When mothers feel fathers are capable of taking care of the child, they are more likely to allow it (Knoester, Petts, & Eggebeen, 2007). This finding indicates that the feedback that mother's receive from fathers about their role, whether they are accurate or not, may affect the amount of time he is able to spend with children. Conversely, in studies of adult mothers with non-resident fathers, mothers indicate that they believe non-resident fathers are obligated to provide child support, and expected support to continue even after she had a new partner. The majority of women also agree that non-resident fathers have the right to see and spend time with their children (Lin & McLanahan, 2007). This indicates a perception that mother's have of father's and it may be that if her perception is not met her satisfaction with father involvement will drop.

In studies of adolescent parents, further research is needed to understand perceptions that adolescent mothers have of adolescent fathers. Adolescent mothers' and fathers' expectations may be different, and they may be sending conflicting feedback. For instance, mothers tend to interpret lack of adolescent father involvement as disinterest (Bunting & McAuley, 2004), but it may be that he feels unwelcome or afraid of being involved. Within a system like this the feedback from each parent may create a cycle of misperceptions from each parent. Mothers expect father involvement through monetary support and time spent with their children but little is known about mothers' satisfaction when fathers follow

through in their role and fulfill the perceptions that mothers have. This study will concentrate on mother's satisfaction as it relates to father involvement and children's outcomes.

Adolescent Fathers

Adolescent father characteristics. Adolescent men who become fathers at a young age are similar in characteristics to adolescent women who become young mothers. They experience economic hardship at home, live with a single parent who was also an adolescent at the time of their child's birth (Knoester, Petts, & Eggebeen, 2007), and have lower levels of academic achievement in school (Thompson & Crase, 2004). Other characteristics of adolescent fathers include higher levels of delinquency, greater substance use, and deviant peer groups (Sipsma, Biello, Cole-Lewis, & Kershaw, 2010). Adolescent fathers have many disadvantages that may keep them from being involved in their children's lives. Not only do they live apart from the mother and child and are part of an unplanned pregnancy, but they, like adolescent mothers, have educational and family setbacks that influence their ability to father their children (Thompson & Crase, 2004). These young fathers are in a conflict because they are continuing their education while faced with the necessity of supporting a family. Their jobs are inconsistent, low-paying, and offer few benefits for their families. In addition to this, their time to earn a living is shared with time in school (Larson, Hussey, Gilmore, & Gilchrist, 1996). Fathers' lack of education leads them to be less capable of providing for their children (Futris, Nielsen, & Olmstead, 2009).

Adolescent fathers tend to experience a great deal of internal turmoil. A study by Thompson and Crase (2004) compared adolescent fathers with their non-father peers to discover any psychological differences. Adolescent fathers were found to have a lower self-esteem and reported less social support than their non-father peers. A related finding was that

fathers reported lower satisfaction with their life in general. These more negative perceptions may make adolescent fathers less motivated to be involved with their children, especially if there is conflict in the father's relationship with the child's mother. Characteristics like these make fathering more difficult and less frequent (Saleh & Hilton, 2011).

Adolescent fathers are often involved in delinquent behavior. Sipsma, Biello, Cole-Lewis, and Kershaw (2010) report that adolescent fathers are more likely to take part in substance abuse, dangerous behavior, and risky sexual behavior. These issues raise the concerns about the appropriateness of some adolescent fathers caring for their very young children.

Adolescent fathers who reside with their children exhibit a higher level of involvement. Those who are older are also more involved. Coleman and Dennison (1998) discuss the difference between a parent who is 14- years old and a parent who is 18- or 19- years old. Typically in studies of adolescent parenting, these ages are lumped together, but in actuality they are in very different points of their lives and development. In this study, researchers found that older adolescent fathers were more likely to be involved, and that younger adolescent fathers had limited access to their children. Younger adolescents are forced to rely on their own parents for transportation to gain access to their children, which may hinder their involvement (Coley & Hernandez, 2006).

Perceptions and benefits. Similar to adolescent mothers, adolescent fathers have perceptions about the fathering role that influences their involvement. A study by Paschal, Lewis-Moss, and Hsiao (2011) examined adolescent fathers beliefs about what it means to be a father. These young fathers described two main roles of fathers: the provider and the nurturer. The provider was the most supported by adolescent fathers' perceptions of what a

father should be like. They believed it was most important for fathers to provide an income or other necessities like diapers, baby food, and clothes even if they were not able to do so. Some fathers felt the need to provide for their young family so much that they would resort to illegal means of making money.

Fathers also expressed a desire and a need to be a nurturer to their families. Being there and spending quality time with their children was an important element to their idea of how a father should behave. They also discussed ways that they could and wanted to support their child's mother and wanted to be more than just a paycheck for the family (Paschal et al., 2011).

Although adolescent fathers may display some more negative characteristics, taking part in fathering can benefit their overall well-being. Their involvement in parenting and making financial contributions has been found to improve their psychological well-being over time (Schindler, 2010). As fathers' financial contributions grew over time, they experienced increases in self-esteem and self-efficacy and decreased psychological distress. Fathers may experience a greater feeling of control and success as they become more equipped to provide for their children (Schindler, 2010). It appears that having an increasingly crucial role in the life of their child gives fathers a psychological boost and sense of importance to their own lives.

Non-resident fathers. Adolescent fathers are often non-resident, and fathers of children with adolescent mothers are oftentimes non-resident; therefore, it is important to consider research that has been conducted concerning non-resident fathers. In a comparison of fathers of all ages, researchers found that fathers who do not live in the same home as their children are at a disadvantage with the amount of time they can spend with their children and

the number of activities and routines in which they can take part. The youngest group of nonresident fathers, ages 13-15 has great difficulties being actively involved with their child (Saleh & Hilton, 2011). It is easiest for the child's resident mother to oversee most care activities such as eating, getting ready for school, and helping with homework because she is more available. With non-resident fathers, residency and access are factors affecting their availability.

Another common indicator of father involvement is the mother-father relationship. When they are in a romantic relationship, adolescent fathers are more likely to be involved with their children. Alternatively, when the mother and father are not in a relationship, father involvement and co-parenting drop significantly (Herzog, Umaña-Taylor, Madden-Derdich & Leonard, 2007). After the relationship has ended, mothers report feeling less satisfied with the father's involvement and do not want him to be present anymore (Herzog et al., 2007). There are several reasons why fathering and co-parenting changes when the relationship status changes. While in a relationship time spent together is more frequent and is easier for adolescent fathers to be involved with their children. With the end of a romantic relationship conflict also increases between the adolescent mother and adolescent father (Coley & Hernandez, 2006). The transition from a relationship may be even more pronounced if mothers do not want the complication of a past boyfriend in their lives, or they are protecting their children from potentially dangerous circumstances. Regardless of the reasons, the end of the relationship coincides with less father presence, and they do not feel as welcome to be involved with their child (Herzog et al., 2007).

In studies of adult fathers, non-resident and unmarried fathers may see themselves as being less capable, and therefore report less involvement with their children (Flouri, 2007).

In this instance, fathers remove themselves from the situation because they do not see themselves as being fit to be a father, or they do not want to be a father. A second reason for these findings is that non-resident fathers do not feel welcome in the parenting process. Mothers limit non-resident father contact with their children, and decide whether they believe fathers are capable. When mothers believe fathers are able to care for their children, they are more likely to allow fathers to take part in daily routines and care (Knoester, Petts & Eggebeen, 2007; McBride, Brown, Bost, Shin, Vaughn, & Korth, 2005). Even as early as prenatally, mothers can find ways to keep fathers from being involved and greatly influence later involvement (Cabrera, Fagan, & Farrie, 2008).

Father Involvement and Child Outcomes

As discussed above, adolescent mothers are under a great deal of stress and have more disadvantages than adult mothers. Especially when adolescent mothers lack support from their families, they may need an additional source of support from the father. Fathers can offer both direct and indirect benefits for their children. They directly influence children by their interpersonal interactions with their children. With these interactions children have shown improved behavior, lower levels of externalizing behavior, and better academic performance (Howard et al., 2006). Indirect benefits include lowering stress for mothers and financial provisions, which act as a stabilizer for the child's home and elicits many similar positive outcomes. Both direct and indirect benefits are important to consider in studies of father involvement.

Direct effects. Various studies have concentrated on several outcome variables for children with involved fathers. In general, academic, social, and emotional outcomes are better for children with involved fathers compared with children who do not have involved

fathers. One of the clearest examples of the benefits of father involvement was shown in Howard et al (2006). In this study, researchers considered the adolescent mother's maternal risk, father involvement, and children's outcomes. They found that when maternal risk was high, and father involvement was high, children displayed less externalizing behavior, lower levels of internalizing behavior, and lower academic benefits than when maternal risk was high and father involvement was low. Foster and Kalil (2007) reported that mothers in single-family homes where mothers were solely responsible for taking care of and providing for their children, had much less time to work with their children. Father involvement may alleviate some of this allowing for a partnership between the two parents.

Other studies have shown behavioral benefits for children. Children with involved fathers are reported to have fewer internalizing and externalizing behaviors (Carlson, 2006). Supporting these results, Flouri (2007) find that children with involved fathers also display more pro-social behaviors. These benefits continue into adolescence. King and Sobolewski (2006) found that adolescents' frequency of acting out in school, externalizing behavior and internalizing behavior were lower when fathers were involved in situations of a poor mother-adolescent relationship. These direct effects go back to the father-child system and the direct interactions the father has with the child. This may come from talking with the child, taking care of daily needs, and playing with the child.

Indirect effects. Indirect effects from father involvement are a result of contributions that fathers make to the child or to the child's environment. Benefits can come from fathers providing things like diapers, clothes, financial assistance, transportation, and help with childcare. Offering these things can create a more homeostatic environment for children and may also alleviate maternal stress (Futris et al, 2009). Father involvement in this indirect

manner may balance the pressure on the mother to provide for and take care of the child among both parents. Among the main characteristics of adolescent parents and their families are that they tend to have financial difficulties and mother's may be dealing with depression and stress (Knoche, Givens, & Sheridan, 2007; McLoyd, Toyokawa, & Kaplan, 2008). The pressure of not being able to provide for their children puts single mothers at additional risk of poor mental health and depression (Mistry, Stevens, Sareen De Vogli, & Halfo, 2007). In this stressful environment, children display more internalizing and externalizing behaviors (McLoyd et al., 2008), and lower scores on measures of overall development (Knoche, Givens, & Sheridan, 2007).

Fathers may also provide forms of emotional support to mothers. As indicated, emotional support is one of the most important forms of support young fathers use to describe the father role (Paschal et al., 2011). Fathers can contribute things like time with the family and responsibility for children when they are in a relationship (Herzog et al., 2007), and mothers benefit from being in this romantic relationship.

An alternative perspective to consider in studies of adolescent father involvement is that children may have better outcomes if their young father is not involved. Fathers may be involved in illegal or dangerous activities (Larson, et al., 1996) and by being present with their children may be exposing them to these behaviors. Additionally, if the adolescent mother and adolescent father are no longer in a relationship, they may not get along and their volatile relationship may have adverse effects on their children. From this alternative perspective, one may consider instances where mothers are happier with less father involvement, and children benefit indirectly from their mothers' satisfaction.

Guiding Research Questions

Based on the current research literature it is clear that there are still unknowns about how adolescent fathers influence their children's development. In the field of father involvement research much of the focus has been on the direct and indirect effects father involvement has on children's outcomes. An area of research that has emerged considers the positive and negative effects fathers have on their children with adolescent mothers. This study will move the field forward based on the foundation of research on both adult and adolescent father involvement and the need for more research on father involvement with an adolescent mother guided by these research questions:

- 1) Are outcomes of children with adolescent mother's at 24 months predicted by father involvement predicted by father involvement at 4, 8, and 18 months?

This research question examines the direct effects of amount of father involvement on children's outcomes. Stemming from research that has shown father involvement improves cognitive and social-emotional outcomes in children (Howard et al., 2007), we hypothesize that more involvement is associated with better child outcomes.

- 2) Does adolescent mother satisfaction with the way things are going in her life at the child's age of 4, 8, and 18 months predict child outcomes at 24 months?

This research question examines the direct effects of maternal satisfaction with the way things are going in her life and children's outcomes. It is hypothesized that satisfaction with the way things are going will be positively related to children's outcomes independent of his actual levels of involvement.

3) Does adolescent mother satisfaction with the way things are going in her life at 4, 8, and 18 months mediate the relationship between actual father involvement and child outcomes at 24 months?

This research question examines a possible interaction effect between actual father involvement, maternal satisfaction with the way things are going, and children's outcomes. It is hypothesized that maternal satisfaction with the way things are going in her life will mediate the direct relationship between fathers' actual involvement and child outcomes at 24-months.

CHAPTER 3: METHODS AND PROCEDURES

Participants

Data for this study were obtained from the Parenting for the First Time Study (Borkowski, Ramey, Ramey, and Carta, 2001) a 3-year longitudinal study of 684 first-time mothers and their infant children. Over the course of the study, two participants were dropped from analysis because of a lack of data leaving the total number of participants at 682. Participants for the original study were from an urban sample drawn from the following cities: Birmingham, Alabama; South Bend, Indiana; Washington DC, Kansas City, KS, and Kansas City, MO. Mothers were randomly selected from local educational centers and clinics and contacted to participate in the study. The original study included 3 groups: adolescent mothers, low-education adult mothers, and high-education adult mothers and was designed to identify early markers for child neglect among high-risk mothers. The current study used only adolescent mother data from 396 adolescent mother participants. Mothers were classified as being adolescent if they fell between the ages of 15 to 18 years at the time of the child's birth (some prenatal interviews occurred before they turned 15). Adolescent mothers younger than age 15 were not included in the sample because of unique circumstances that coexist with such young pregnancy. Mothers 19-21 years of age were not included in the sample because they are in a transitional stage between adolescence and adulthood that would not allow for a clean comparison between groups. Table 1 presents mother and father age and education statistics, Table 2 presents father residency statistics, and Table 3 presents mother and father ethnicity statistics. It is important to note that father age statistics indicate many father's who do not qualify as adolescent fathers. Therefore, from this point on father's will be referred to as fathers of children with adolescent mothers.

Table 1.

Maternal and Paternal Age and Education Level at Prenatal Interview

	<i>N</i>	Minimum	Maximum	Mean	Standard Deviation
Mother					
Age	396	14.72	19.38	17.38	1.23
Father					
Age	386	15	42	19.98	3.52

Table 2.

Father Residency Statistics at child age of 4, 8, and 18 Months.

	Frequency	Percent
4 months		
Resident	143	52.2
Non-resident	131	47.8
8 months		
Resident	116	48.1
Non-resident	124	51.5
18 months		
Resident	86	36.6
Non-resident	147	62.6

Table 3.

Adolescent Mother and Father Ethnicity and Education Information.

	Frequency	Percent		Frequency	Percent
Mother			Father		
Ethnicity			Ethnicity		
Black	277	69.9	Black	280	71.6
White	55	13.9	White	45	11.5
Hispanic White	53	13.4	Hispanic White	51	13.0
Multiracial-Multiethnic	6	1.6	Multiracial-Multiethnic	8	2.0
Hispanic Black	3	.8	Hispanic Black	5	1.3
American Indian	2	.5	Other Race	2	.5
Education			Education		
Less than 8th grade	8	2.0	Less than 8th grade	6	1.8
8th grade	11	2.8	8th grade	4	1.2
9th grade	58	14.8	9th grade	13	3.9
10th grade	89	22.7	10th grade	49	14.8
11th grade	97	24.7	11th grade	74	22.3
12th grade	104	26.5	12th grade	141	42.5
Not graded	19	4.8	Not graded	8	2.4
Community/Junior College	3	.8	Community/Junior College	8	2.4
Vocational Program	1	.3	Vocational Program	10	3.0
4 year college or university	2	.5	4 year college or university	19	5.7

Design and Procedure

Father involvement and maternal satisfaction data were collected via interview at 4, 8, and 18 months using the Parent Child Activities Interview (PCA; Lefever, Hughes, Lanzi, Guest, Ramey, et al., 2001). For the PCA, each participant was provided a cell phone for ease of contact by researchers and to diminish methodological issues that come with phone surveys (e.g. unable to reach participant because of disconnected phone). At each time point mothers were contacted via phone and administered the PCA several times (standard protocol was every 2 weeks). The PCA was administered to mothers an average of 2.7 times at four months, 2.61 times at eight months, and 2.5 times at 18 months. At each time mothers were given the same questions to obtain an accurate reflection of their typical lives. Mothers therefore have two or three responses to one question, which exemplifies a unique difference with the PCA data from other data collection methods. At 24 months, data on child outcomes including language, behavior, and social-emotional development were collected. For these outcomes the Preschool Language Assessment-4, the Mental Development Index from the Bayley Scales of Infant Development, and the Infant Toddler Social and Emotional Assessment (ITSEA) were used.

Measures

Parent-Child Activities Interview. The Parent-Child Activities Interview is a semi-structured interview that covers a range of daily parenting activities in the preceding 24 hours. The PCA is not an instrument in which the mother generalizes about her and her child's life: rather the mother reports actual events that have happened that day. There are three main sections in the PCA. The first section covers the people the child has been with and the types of supports the mother may have received in the previous 24 hours. The second

part includes the types of daily activities in which the mother and child have taken part (e.g., bathing and diapering in the previous 24 hours). Finally, the third section focuses on mother's satisfaction with her life in general and with the way things have gone in the past day. As a whole, the PCA pieces together the mother's life as it relates to her child and sources of support in the last 24 hours. For this study, the focus is on items dealing with the child's father and maternal satisfaction with the way things are going in her life. For father involvement variables, mothers were asked if the father was present in the previous 24 hours ("Was the child's biological father present in the previous 24 hours?"), and how much time he spent with the child ("How many hours was your child's biological father present with your child?"). Maternal satisfaction variables were taken from the 3rd section of the PCA. Mothers were asked to respond about their satisfaction with the previous 24-hours ("How satisfied are you with the way things went in the previous 24 hours?"), how things went with the child in the previous 24 hours (How satisfied are you with the way things went with the child in the previous 24 hours?), and overall satisfaction with life ("How satisfied are you with the way things are going in your life?"). For each maternal satisfaction variable, mothers rated their satisfaction on a scale of 1 to 5 (1 = very difficult, 5 = very good).

Because the PCA covers only the previous 24 hours, data for the PCA were collected multiple times across time points to avoid bias. In a study of reliability the PCA was compared with two other parenting measures and was found to be a sensitive and valid measure for parenting, and had an overall Cronbach's alpha of .85 (Lefever et al., 2008).

Since mothers responded multiple times at each assessment period, the data from each phone call were aggregated. For instance, a mother indicated during phone call number one that within the past day her child's father was present for four hours, in phone call number

two he was there for five hours, and at time three he was there for six hours. These three responses, four hours, two hours, and six hours were averaged to yield an overall average time of four hours for this participant. This same process was done for all scale/rating responses within the data. Other scale/rating variables included the mother's overall rating of the day (1 = very difficult, 5 = very good), and mother's rating of how well she believes things have gone with her child in the last 24 hours (1 = very unhappy, 5 = very happy). For this study, when these variables are reported they are an average of mother's responses based on the last 24 hours in the mother's and child's lives.

Items for the current study also include yes/no responses. These variables were whether or not the father was identified as being actively involved in the child's life, and if the child spent time with the father in the previous 24 hours. The yes/no responses could not be averaged because they are not scale data. To combine across phone calls these variables were aggregated into new variables that reflected a percentage of the time across calls that mothers responded "yes" to the question. An example of this would be at time 1 a mother responded "yes", her child spent time with his/her father in the last 24 hours, at time two she responded "no", and at time 3 she responded "yes". In this instance the aggregated score would be 66%. All yes/no responses in the PCA are averaged percentages.

Child outcomes. Child outcomes were collected via in-home interviews and included language development, intelligence, and social and emotional functioning. Data for child outcomes were collected at the child's age of 24 months.

Language development. The Preschool Language Scale-4 (PLS-4; Zimmerman, Steiner, & Pond, 2002) was used to measure language development. The measure includes subscales measuring auditory comprehension, expressive comprehension, as well as a

combined total score. The PLS-4 is normed for children from birth to 7 years and measures total language, auditory comprehension, and expressive communication standard scores and language age equivalents. For children birth to 3 years 11 months, internal consistency ranged from .67 to .94 for auditory comprehension, .73-.95 for expressive communication, and .81-.97 for total language scores. Retest stability ranged from .90 to .97. Correlations for test-retest reliability for children 2-3 years ranged from .87-.95 for auditory comprehension, .82-.94 for expressive communication, and .90-.97 for total language. Concurrent validity with previous editions of the PLS was .65 for auditory comprehension, and .79 for expressive communication for children ages 2-6 years. Construct validity between auditory comprehension and expressive communication was .74 across all ages.

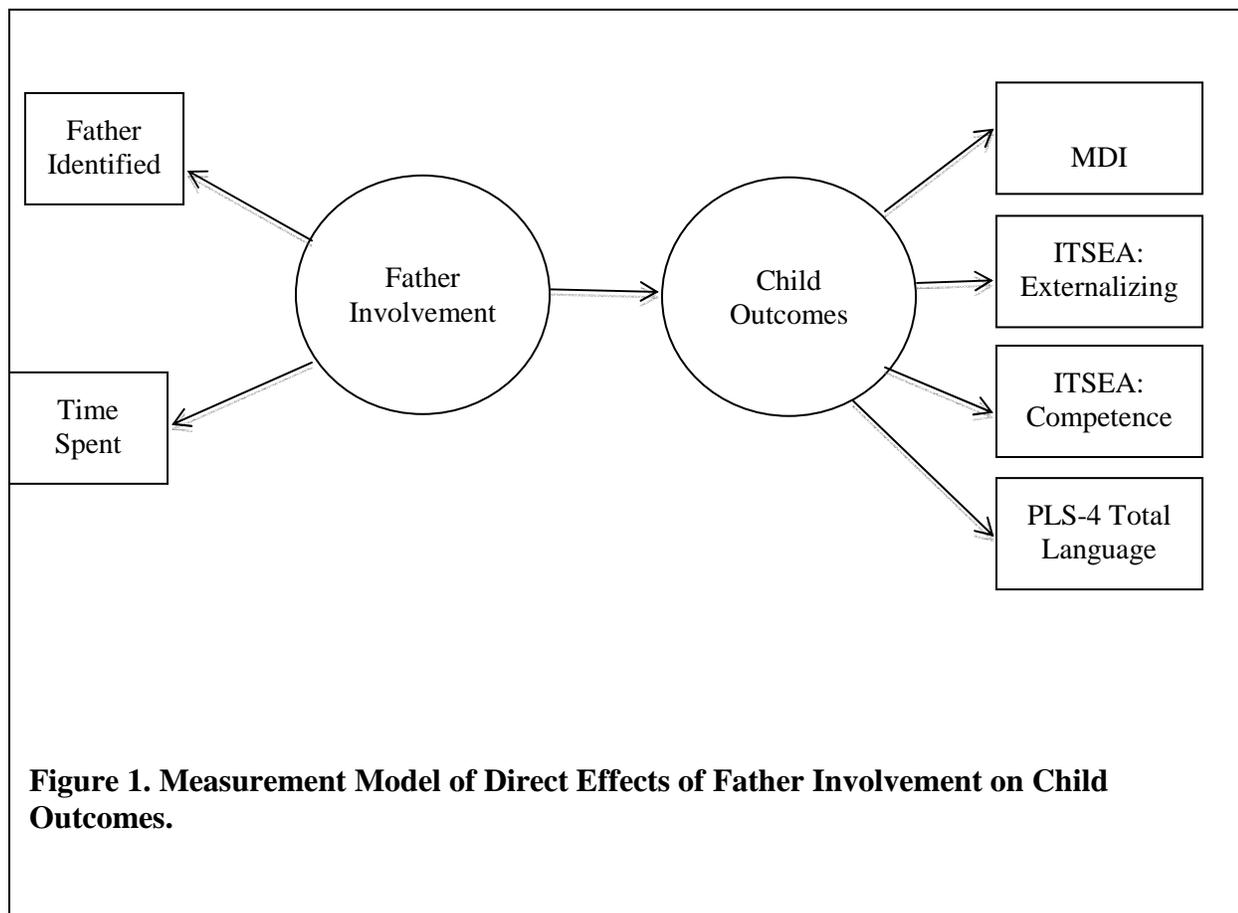
Intelligence. The Mental Development Index (MDI) from the Bayley Scales of Infant Development (Bayley, 1969) was used to measure children's intelligence at 24 months. Using the MDI, children were assessed on sustained attention, purposeful manipulation of objects, imitation, comprehension, expressive language, and problem solving. Internal consistency for this was .88 and test-retest reliability for children ages 1-12 was .83 (Bayley, 2005).

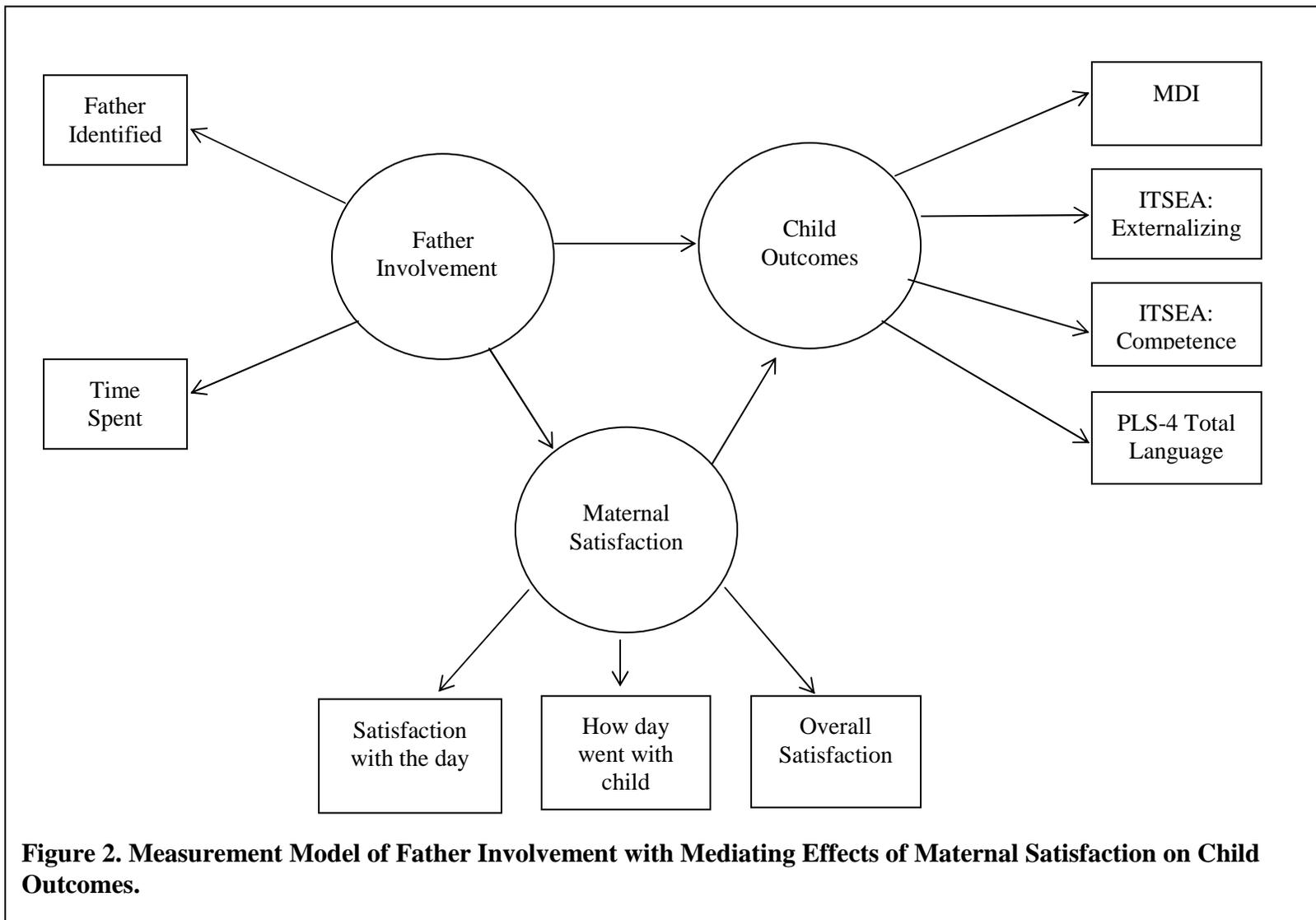
Social and Emotional Functioning. The Infant Toddler Social and Emotional Assessment (ITSEA; Briggs-Gowan & Carter, 2005) was used to measure children's social and emotional functioning. The main scale consists of 139 items with additional scales for atypical and clinical problems. Parents responded to items on a 3-point scale to indicate how often the child exhibits a certain behavior, with codings of 0 for not true/rarely, 1 somewhat/sometimes true, or 2 very true/often. Fifteen sub-scales were utilized as necessary pieces to regulatory functioning: activity-impulsivity, aggression, depression-withdrawal,

general anxiety, inhibition to novelty, dysregulation sleep, dysregulation-negative emotionality, dysregulation eating, dysregulation sensory sensitivity, compliance, attention, mastery motivation, empathy, social approach, and social attention. From these 15 subscales 4 t-scores are figured including externalizing behavior, internalizing behavior, dysregulation, and competence. Intra-class correlations for test-retest reliability have been found to range from .74 to .88 (Carter & Briggs-Gowan, 2001). Inter-rater reliabilities comparing the parents' scores ranged from .43 to .78 (Carter & Briggs-Gowan, 2001).

Analysis

Structural Equation Modeling (SEM) was used to test the data because there were multiple indicators for each construct. Amos 19.0 (Arbuckle, 2010) was used to conduct SEM. Maximum likelihood is a commonly used method of estimation in SEM (Kline, 1998) and was used to estimate the models in this study. Measurement models can be seen in figures 1 and 2. To determine fit for each model the χ^2 square coefficient, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) were considered. A non-significant χ^2 statistic indicates a good fit, but can be problematic in that its magnitude is influenced by sample size (Kline, 1998). The CFI is less influenced by sample size and is therefore a compatible test of fit with the χ^2 index. Specifically a CFI index greater than .90 indicating a good fit. Finally, a RMSEA value close to .00 with anything less than .05 indicating a very good fit (Kline, 1998). In addition to these 3 fit indexes, regression weight estimates of the indicators to the latent variables are presented to further examine appropriateness of the models.





CHAPTER 4: RESULTS

Descriptive Statistics

Means, minimums, maximums, and standard deviations for all variables are presented in table form. Descriptives for child outcomes are presented in Table 4. Father involvement variable descriptives at 4, 8, and 18 months are presented in Table 5, and maternal satisfaction variables at 4, 8, and 18 months are presented in Table 6. From the PCA and 24-month outcome variables, correlations were reported for the percentage of time fathers were indicated as being present in the previous 24 hours, the average amount of time they were present in the previous 24 hours, mother's satisfaction with the day, mother's satisfaction with the way things have gone with her child, overall satisfaction with the way things are going, and the 4 child outcomes scores.

Table 4.

Child Outcome Descriptives at 24 Months.

	<i>N</i>	Range	Mean	Std. Deviation
Bayley MDI Scores	351	50-120	85.54	14.66
PLS-4: Total Language Standard Scores	272	50-140	92.65	14.97
ITSEA: Externalizing T-Score	350	34-89	57.77	10.73
ITSEA: Competence T-Score	341	13-73	46.05	10.34

Table 5.

Father Involvement Variable Descriptives at 4, 8, and 18 Months.

	N			Range			Mean			Standard Deviation		
	4	8	18	4	8	18	4	8	18	4	8	18
Percentage of Time Biological Father Was Identified As Present	318	265	241	0-100	0-100	0-100	85.04	82.14	75.69	33.72	37.01	41.76
Average Amount of Hours Father Spent With Child In Previous 24 hours	232	169	137	0-24	0-24	0-24	9.39	10.78	11.30	6.84	7.24	6.85

Table 6.

Maternal Satisfaction Variable Descriptives at 4, 8, and 18 Months.

	N			Range			Mean			Standard Deviation		
	4	8	18	4	8	18	4	8	18	4	8	18
Maternal Rating of Satisfaction With Day	321	264	240	1-5	1-5	1-5	4.33	4.32	4.25	.70	.67	.74
Maternal Satisfaction With the Way Things Went With Her Child in Previous 24 Hours	321	264	240	1-5	1-5	2.5-5	4.62	4.64	4.64	.56	.55	.51
Overall Maternal Satisfaction	321	264	238	1.67-5	1-5	1-5	4.26	4.23	4.23	.72	.81	.76

Pearson Correlations

Initially, correlations were run between each of the variables at each time point to test for relationships between the variables. Four-month correlations can be seen in Table 7. Children's externalizing behavior at 24 months is negatively correlated with father identified in previous 24 hours and with the average time spent with child in previous 24 hours. Children's competence scores were positively correlated with mother's rating of how things had gone during the day and mother's average satisfaction rating with how things were going. Neither children's MDI scores nor PLS-4 scores were positively related to father involvement variables or maternal satisfaction variables.

Eight-month correlations can be seen in Table 8. Average time father spent with child positively correlates with children's PLS-4 scores, but not with any other child outcomes. Maternal satisfaction did not significantly correlate with children's outcomes at 8 months.

Eighteen-month correlations can be seen in Table 9. Average time father spent with child positively correlates with children's PLS-4 scores, but not with ITSEA or MDI outcomes. Mother's rating of how things had gone with the child and her average rating of how things were going positively correlate with children's competence scores.

Table 7.

4 Month Variable Correlations

	1	2	3	4	5	6	7	8	9
1. PLS-4 Total Language	--								
2. ITSEA Externalizing T-Score	-.170**								
3. ITSEA Competence T-Score	.249**	-.044							
4. Mental Development Index Score	.587**	-.147*	.164**						
5. Father identified in previous 24 hours	.074	-.135*	.070	.092					
6. Average time spent with child in previous 24 hours	.064	-.149**	.066	.069	.370**				
7. Mother's satisfaction with the way things have gone during day	-.008	-.003	.126*	.025	-.033	.048			
8. Mother's rating of how things have gone with child during the day	-.067	.017	.063	.027	-.007	.021	.658**		
9. Mother's average satisfaction rating with how things are going	.050	-.037	.115*	.081	.091	.170**	.531**	.401**	--

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

Table 8.

8-Month Variable Correlations.

	1	2	3	4	5	6	7	8	9
1. PLS-4 Total Language Standard Scores	--								
2. ITSEA Externalizing T-Score	-.170**								
3. ITSEA Competence T-Score	.249**	-.044							
4. Mental Development Index	.587**	-.147*	.164**						
5. Father identified in previous 24 hours	.065	-.071	.036	.088					
6. Average time spent with child in previous 24 hours	.156*	-.079	.101	.081	.408**				
7. Mother's satisfaction with the way things have gone during day	.111	-.082	.023	.054	-.011	-.059			
8. Mother's rating of gone with child	-.007	-.102	.090	.033	.071	-.032	.594**		
9. Mother's average satisfaction rating	.057	-.024	-.012	-.022	.101	.041	.630**	.464**	--

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

Table 9.

18-Month Variable Correlations.

18 month correlations

	1	2	3	4	5	6	7	8	9
1. PLS-4 Total Language Standard Scores	--								
2. ITSEA Externalizing T-Score	-.170**								
3. ITSEA Competence T-Score	.249**	-.044							
4. Mental Development Index Score	.587**	-.147*	.164**						
5. Father identified in previous 24 hours	.043	-.046	.077	.096					
6. Average time spent with child in previous 24 hours	.204**	-.042	.117	.169*	.511**				
7. Mother's satisfaction with the way things have gone during day	.081	-.092	.103	-.017	.032	.088			
8. Mother's rating of how things have gone with child during the day	-.016	-.037	.139*	-.032	-.068	.044	.577**		
9. Mother's average satisfaction rating with how things are going	.092	-.111	.172**	.044	.096	.159*	.656**	.433**	--

* p < .05. **p < .01.

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was run to test that a relationship existed between the observed variables and the latent variables. For child outcomes the observed variables were the child's competence, externalizing, language, and social and emotional scores. Father involvement variables included father identified as present in the past 24 hours and amount of time fathers were present in the last 24 hours. Maternal satisfaction observed variables were satisfaction with how things went in the past 24 hours, satisfaction with the way things went with the child in the previous 24 hours, and overall satisfaction with the way things are going in her life. CFA results for child outcome variables, father involvement variables, and maternal satisfaction variables are presented in Table 10. The test of child outcomes at 24 months revealed that the 4 variables are good indicators of child outcomes. The regression weights were all significant indicating the observed variables were indicators of child outcomes, and CFI and RMSEA fit statistics indicate a good fit. CFA for father involvement variables resulted in significant regression weights and favorable fit statistics, but this is only a reasonable model because no p value could be produced because there are 0 degrees of freedom. Finally, CFA for maternal satisfaction variables indicated significant regression weights at each time point indicating that observed variables are good indicators of maternal satisfaction, and fit statistics indicate a reasonably well-fitting model.

Table 10.

Confirmatory Factor Analysis results for father involvement, maternal satisfaction, and child outcomes.

	Father Involvement				Maternal Satisfaction			Child Outcomes				
	4 mos	8 mos.	18 mos.		4 mos.	8 mos.	18 mos.	24 mos.				
Estimates	Father Identified → Father Involvement	12.57(.37)***	15.19(.41)***	21.34 (.51)***	Satisfaction with the day → Maternal satisfaction	.856 (.93)***	.73(.90)***	.84 (.91)***	MDI → Child Outcomes	9.71(.66)***		
									Competence → Child Outcomes	2.83(.27)***		
									Externalizing → Child Outcomes	1.00(.09)***		
	Time Spent → Father Involvement	3.28 (.96)***	7.69 (.99)***	7.55 (.99)***	How things went with child → Maternal Satisfaction	.56 (.83)***	.47 (.76)***	.43 (.74)***	PLS-4 → Child Outcomes	13.49(.90)***		
									Overall satisfaction → Maternal Satisfaction	1.00 (.85)***	1.00 (.88)***	1.00 (.88)***
										(df = 0, n = 682) = .00	(df = 0, n = 682) = .00	(df = 0, n = 682) = .00
χ^2												
CFI	>.99	>.99	>.99			.56	.77	.74		>.99		
RMSEA	<.001	<.001	<.001			<.001	<.001	<.001		<.001		

^aUnstandardized (Standardized)

***p < .001

Structural Equation Modeling

To examine the research questions a mediating model examining the direct effects of father involvement on child outcomes and the indirect effects of father involvement through maternal satisfaction on child outcomes were specified at each time point. Mediation occurs among three variables when the mediating variable describes the relationship between the other two variables. In this case maternal satisfaction is hypothesized to mediate the relationship between father involvement and child outcomes. Initial correlations indicate that at certain time points there are relationships between father involvement and child outcomes, father involvement and maternal satisfaction, and maternal satisfaction and certain child outcomes. Structural equation modeling (SEM) was conducted to further test the hypothesis.

The 4-month SEM can be seen in Figure 3. At 4 months goodness of fit indices indicated an excellent fit with the data with a non-significant χ^2 , a CFI coefficient of .978, and a RMSEA of .028. Despite a well-specified model, regression weights between each of the latent variables were not significant. Regression weights indicated that father involvement does not significantly predict child outcomes, father involvement does not predict maternal satisfaction, and maternal satisfaction does not significantly predict child outcomes.

Figure 5 presents the mediating model for father involvement, maternal satisfaction, and child outcomes at 8 months. An excellent fit was determined again with a non-significant χ^2 , a CFI coefficient of 1.00, and a RMSEA of .000. Regression weights were not significant for father involvement and child outcomes, father involvement and maternal satisfaction, and maternal satisfaction and child outcomes.

SEM results at 18 months are presented in Figure 6. Goodness of fit statistics indicate an excellent fit of the data with a non-significant χ^2 , a CFI coefficient of .983, and an RMSEA of

.023. Regression weights indicate that father involvement does not significantly predict maternal satisfaction or child outcomes, and maternal satisfaction does not significantly predict child outcomes. Table 12 presents the SEM results at each time point with the standardized and unstandardized regression weights as well as probabilities, and Figures 3-5 present resulting SEM models with standardized regression weights and fit statistics. Fit statistics at each time point indicate an excellent fitting model, but regression weights are not significant.

Table 12.

Structural Equation Modeling Standardized and Unstandardized Regression Weights.

Parameter	Estimate ^a	Probability
4-Month Path Coefficient		
<i>Effects on Child Outcomes</i>		
Involvement → Outcomes	.064 (.138)	.234
Satisfaction → Outcomes	-.057 (-.002)	.973
<i>Effects on Maternal Satisfaction</i>		
Involvement → Satisfaction	.001 (.034)	.681
8-Month Path Coefficient		
<i>Effects on Child Outcomes</i>		
Involvement → Outcomes	.095 (.155)	.054
Satisfaction → Outcomes	1.48 (.089)	.263
<i>Effects on Maternal Satisfaction</i>		
Involvement → Satisfaction	-.002 (-.047)	.491
18-Month Path Coefficient		
<i>Effects on Child Outcomes</i>		
Involvement → Outcomes	.346 (.115)	.171
Satisfaction → Outcomes	1.28 (.072)	.383
<i>Effects on Maternal Satisfaction</i>		
Involvement → Satisfaction	.014 (.081)	.346

^aUnstandardized (Standardized)

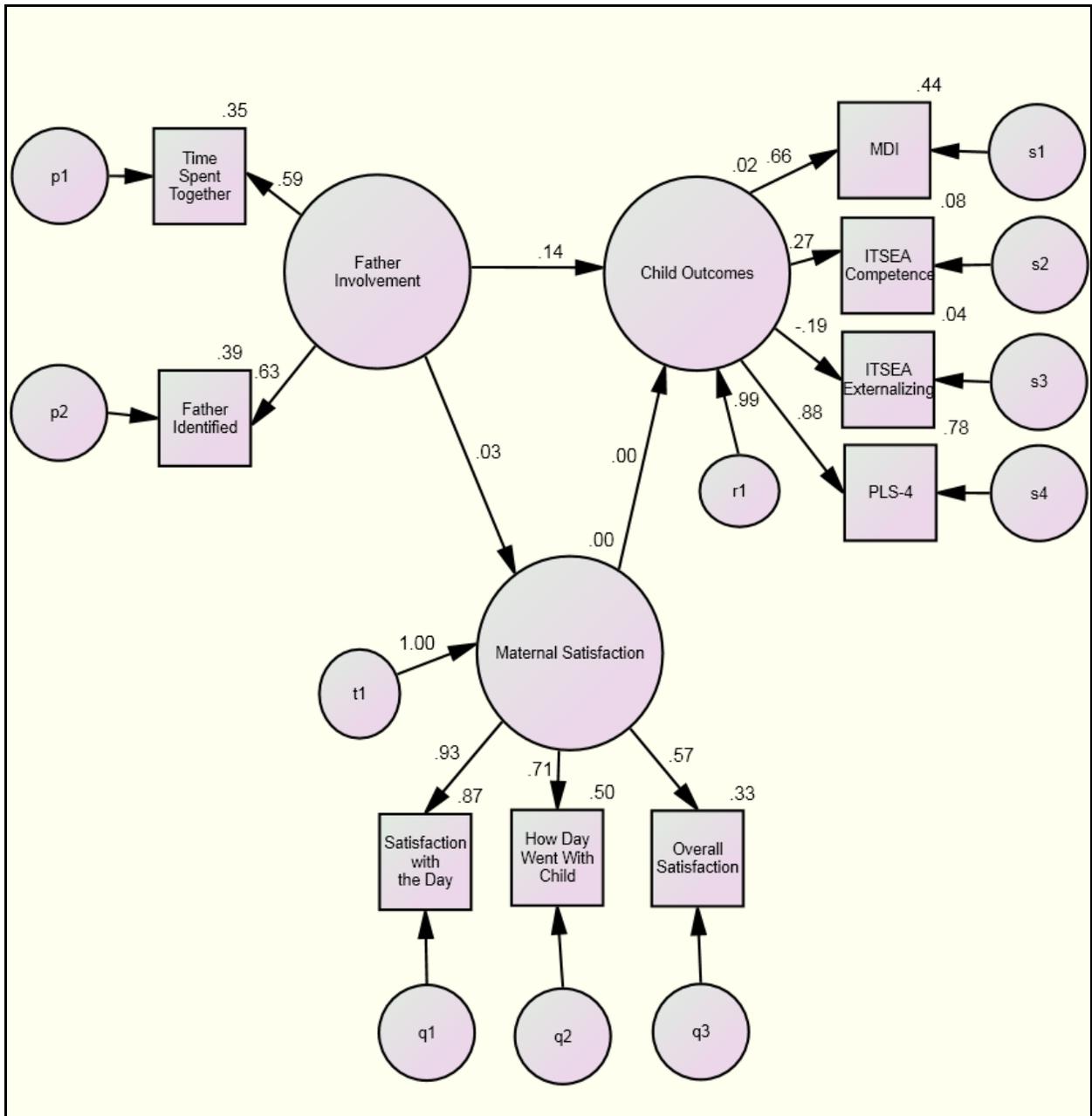


Figure 3. SEM Results of direct and indirect effects of father involvement on maternal satisfaction and child outcomes at 4 months

$\chi^2(df = 24, n = 548) = 34.194, p = .081; CFI = .978; RMSEA = .028$

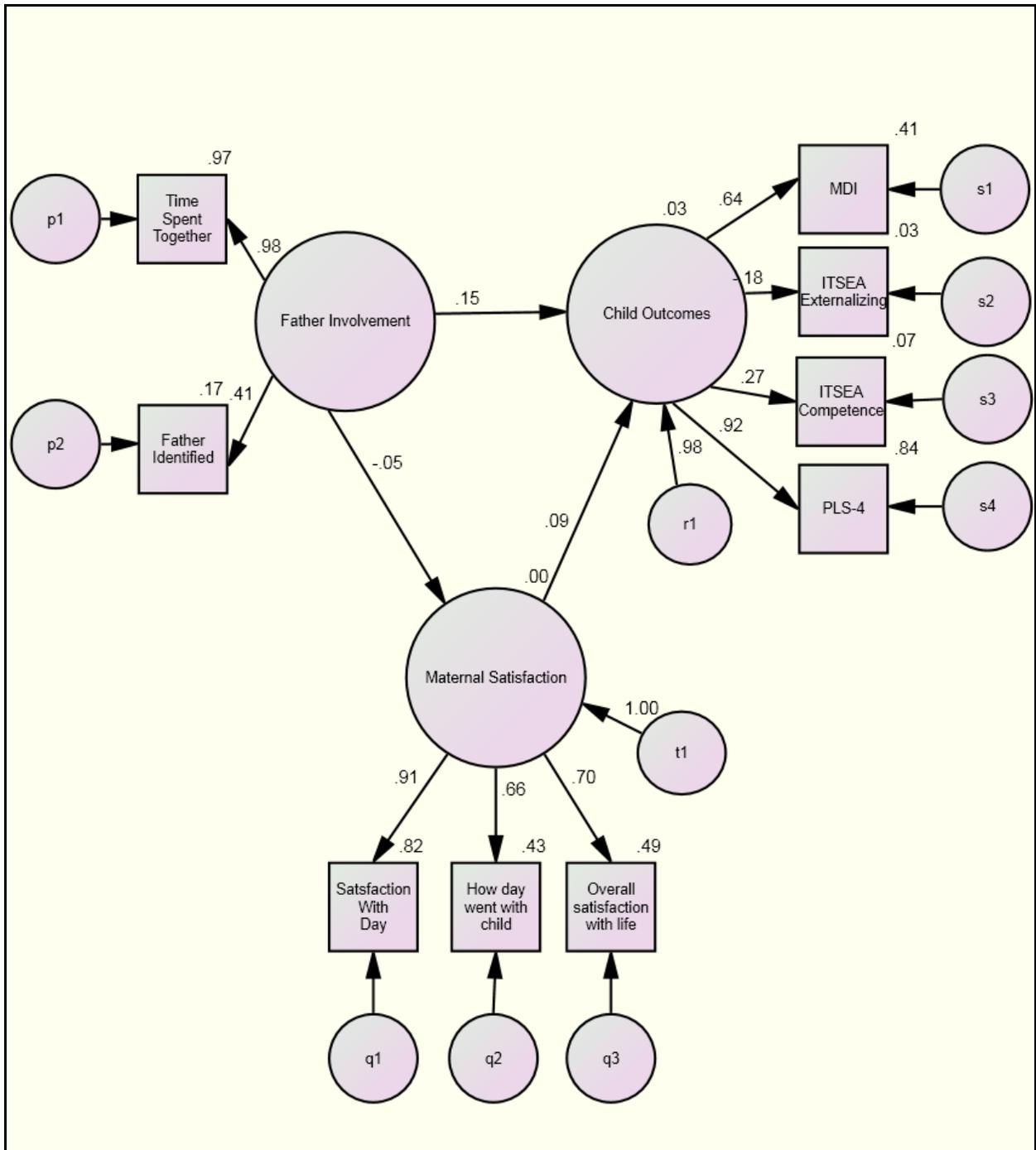


Figure 4. SEM Results of direct and indirect effects of father involvement on maternal satisfaction and child outcomes at 8 months

$\chi^2(df = 24, n = 548) = 23.64, p = .482; CFI > .999; RMSEA < .001$

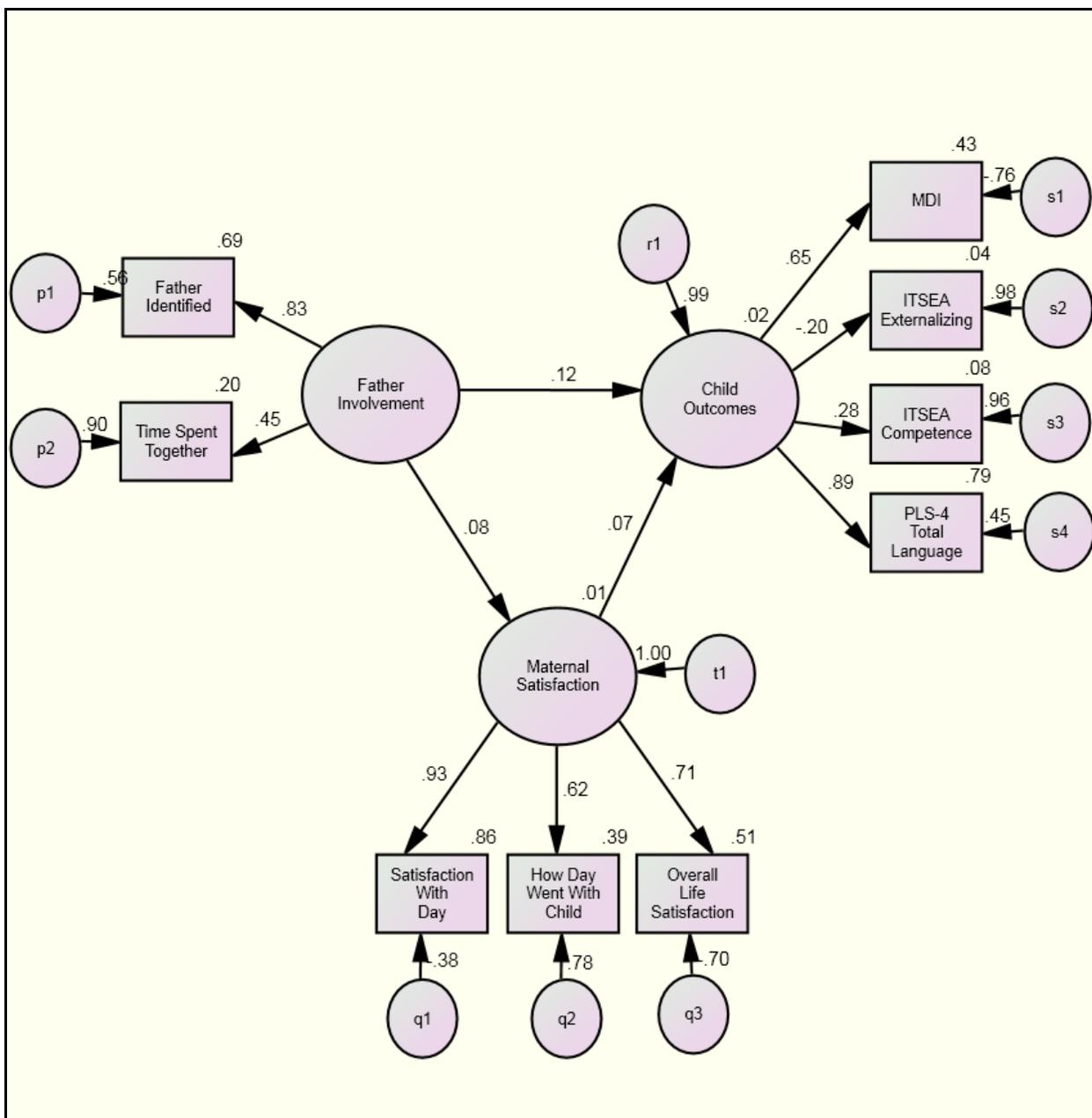


Figure 5. SEM Results of direct and indirect effects of father involvement on maternal satisfaction and child outcomes at 18 months

$\chi^2(df = 24, n = 548) = 30.897, p = .157; CFI = .983; RMSEA = .023$

CHAPTER 5: DISCUSSION

According to family systems theory, individuals in the family unit are influenced by the environment and each other, and they also have a unique influence on their environment (White and Klein, 2002). Based on this theory, the hypotheses of this study were testing whether fathers had a direct effect on their children by interacting with them on a daily basis, or whether fathers presence alleviates environmental stressors and boost maternal satisfaction. Initial correlations indicate that there are relationships between father involvement measured by percentage of time father was present in the previous 24 hours and average amount of time father spent with child in the previous 24 hours, and children's externalizing behaviors and language scores at 24 months. The importance of this study is emphasized by the lack of current research on father involvement and the possible benefits that adolescent mothers, fathers of children with adolescent mothers, and their children can receive by his involvement. A discussion of implications, limitations, and future research will follow.

The conceptual model is a good fit for the data at each time point indicating the model was congruent with the data and the latent variables fit well with the indicators. Therefore, I was confident the test of the hypotheses were valid with this sample. Despite the excellent fitting models based on the fit indexes outlined previously, non-significant regression weights between the latent variables indicate the overall hypothesis of maternal satisfaction as a mediator of father involvement on child outcomes was not supported. However, significant correlational results indicate a need for further discussion of these results.

Father Involvement and Child Outcomes

One of the original research questions for this study examined the direct effects of father involvement on child outcomes. Based on significant correlations it is evident there is a

relationship between father involvement and children's outcomes. The average number of times fathers were identified as present in the previous 24 hours and the average amount of time fathers spent with the child in the previous 24 hours (when children were 4 months) were negatively correlated with children's externalizing behaviors at 24 months. These results are consistent with those in previous father involvement studies (Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2007). Most research on father involvement consistently reports improved behavioral outcomes (Carlson, 2006; McLoyd et al., 2008), as well as academic benefits for children (Knoche, Givens, & Sheridan, 2008). Similar results indicate that when mother's are high-risk and adolescent fathers are more involved, children benefit by displaying fewer externalizing behaviors, and have better grades in schools than children with less involved fathers (Howard et al., 2006).

In addition to behavioral findings, previous research has found that greater levels of father involvement are influential on children's cognitive (Mollborn & Lovegrove, 2011) and language development (Pancsofar et al., 2010). Results from the current study are consistent with previous research. At 8 and 18 months, the average amount of time fathers spent with their children in the previous 24 hours was positively related with children's language scores at 24 months. Additionally, at 18 months the average amount of time fathers spent with their children was positively related to children's cognitive development at 24 months. The fact that this finding is significant only at 8 and 18 months could indicate that as children become more interactive, fathers are more inclined to talk to their children and encourage conversational turn taking. These results may be indicating a similar process in that fathers are more involved with their children as toddlers, facilitating more vocabulary as well as more play-based interaction, which would improve children's cognitive development.

Relationships between father involvement and child behavior, cognitive, and language outcomes could also stem from indirect effects of father involvement. Indirect effects would occur through another variable such as maternal satisfaction as hypothesized in this study. These effects may also occur if father presence allows the mother to spend more time with the child if he shares in various responsibilities. Foster and Kalil (2007) reported that when the mother was solely responsible for the child, she had less time to play or work directly with the child. When the father is present more frequently, it may allow the mother to take more time with the child, which may influence children's behavior, cognition, and language development. It may be that when mothers are the only parent responsible for caring for the child, the system is thrown out of balance, but when fathers are involved it spreads the responsibility among each parent. Further discussion about father involvement and maternal satisfaction follows.

Father Involvement and Maternal Satisfaction

Adolescent mothers rely on sources of social support such as their families and their own mothers to deal with many of the stressors and challenges of parenting. Adolescent mothers have many characteristics such as lower SES (Mollborn, 2007), lower educational attainment, and fewer job prospects (Pogarsky, Thornberry, & Lizotte, 2006) on top of typical mothering stressors. This study introduces fathers of children with adolescent mothers as an additional source of support to mothers by examining the relationship between father involvement and maternal satisfaction.

At 4 and 18 months, the average amount of time a father spent with his children in the past 24 hours was positively related to the mother's average satisfaction ratings with the way things were going in her life. There are several processes that could be at work in this instance. One is that father's presence may help mother with the child, daily responsibilities, financial

stressors, and other challenges that could detract from mothers overall satisfaction. This explanation would reflect back to the original hypothesis of this study.

Similarly, it is clear from previous research that adolescent father involvement is higher when he is in a relationship with the child's mother. If fathers are more involved because they are in a relationship with the child's mother (Herzog et al., 2007), the adolescent mother may not be more satisfied with the amount of time the father spends with the child, but rather because she is in a relationship and feels more satisfied with the direction of her life. If this was indeed the process behind the maternal satisfaction and father involvement correlations, one would expect maternal satisfaction to drop if father involvement drops. Previous research indicates adolescent father involvement does usually drop over time, especially when the romantic relationship ends (Herzog et al., 2007). In the present study, there was no test of relationship status and maternal satisfaction, but data do indicate that maternal satisfaction significantly correlated with the amount of time father spent in the last 24 hours at the earliest and latest time points, and rather than dropping father involvement increased over time.

Maternal Satisfaction and Child Outcomes

Maternal satisfaction and its effects on child outcomes may be a derivative of father involvement, or it may be a result of another factor not measured in this study. The current study hypothesized maternal satisfaction would act as a mediator between father involvement and child outcomes. Although that specifically was not supported, maternal satisfaction variables were significantly correlated with certain outcome measures at 24 months.

Significant correlations indicate maternal satisfaction is related to children's competence scores at 24 months. Specifically, at 4 months when mothers were more satisfied with the way the day went and more satisfied with how things were going, children scored higher on

competence scores at 24 months. Additionally, mother rating of how things have gone with the child in the previous 24 hours as well as average satisfaction rating with the way things are going in her life are positively related with children's competence scores at 24 months. This supports other research in the area of children's competence. Mothers who are more satisfied with their lives may have more time and patience in responding to their children. They may be more proactive and supportive of children and not resort to punitively responding to negative behaviors and emotions (Spinrad, Eisenburg, Gaertner, Popp, Smith, Kupfer, Grieving, Liew, & Hofer, 2007). Brophy and colleagues (2011) found similar results with a low-income sample where low income mothers impact children's competence abilities by providing emotional guidance and creating a responsive environment.

Limitations

Several limitations must be considered with these results. The first limitation is with the CFA results. For father involvement the regression weights are significant and indicate a good fit, but it is not possible to calculate a p-value for the chi square statistic because there are zero degrees of freedom. This is not an ideal situation for CFA results and indicates only a reasonable fit for the model. For the maternal satisfaction CFA regression weights were significant, but fit statistics indicate only a moderately well fitting model. It may be that the observed variables fit together well enough to result in significant regression weights, but that everything does not fit together ideally. Therefore, results should be considered in light of this limitation.

Another limitation with the data is many of the fathers were not present which limits the variance of the data. Mothers gave two responses about father involvement. The first was whether he was present in the past 24 hours. The second father involvement variable built upon the first. When fathers were identified as being present, mothers were then asked how much time

he spent with the child. Therefore, when fathers were not identified as present in the previous 24 hours, the amount of time they spent with children was by default zero hours. This characteristic limits the variance of the father involvement data and limits the overall findings of the study.

Another limitation of the study is that the father involvement variables may not completely represent father involvement. The father involvement variables in this study focus only on amount of time and overall presence. A more dimensional picture of father involvement may result from measures that directly measure what the father does with the child and the quality of his interactions. For instance, Hofferth, Cabrera, Carlson, Levine, Randel, and Schindler (2007) used father's engagement, accessibility, responsibility, warmth, and monitoring in a meta-analysis of father involvement. In the present study, interpretation can be made only in the context of whether the father was present and the amount of time he spent in the past 24 hours, and may be missing the depth of the types of interactions and activities that took place in that amount of time.

Finally, there was no direct variable of maternal satisfaction with father involvement. For this study, maternal satisfaction was created from measures of satisfaction with the day, satisfaction with the way things had gone with the child, and overall satisfaction with the way things were going with her life. This limits the way the findings can be interpreted, and certainly no inferences of causation of father involvement on maternal satisfaction can be made.

Policy Implications

Research on the impact of father involvement as it relates to the adolescent mother and her child is in the early stages. There is more to be discovered about these systems and how each individual influences the system as a whole. What is evident from the current study is that father involvement is related to positive child outcomes and to maternal satisfaction and, intensified

interventions can improve outcomes for these young parents and their children. One focus of family systems theory is equilibrium or balance (White and Klein, 2002). Intervention is one way to help the family system achieve this balance. For instance, previous research has shown that interventions with adolescent mothers and grandparents are beneficial for family relations, maternal competence, and child well-being (McDonald, Conrad, Fairtlough, Fletcher, Green, Moore, & Lepps, 2008). The current findings indicate that it may be beneficial to include fathers of children with adolescent mothers in such interventions.

Research that has compared different types of intervention for adolescent mothers and fathers of children with adolescent mothers found individual intervention working solely with the father was beneficial only for him. Intervention that focused on the couple as a unit indicated long-term benefits for the family. Fathers were more likely to help with daily care activities and the couples reported higher levels of relationship satisfaction (Cowan, Cowan, Pruett, Pruett, & Wong, 2009). Indeed this study reported correlational data linking maternal satisfaction with the way things are going with the average amount of time fathers spent with the child in the previous 24 hours. It may be beneficial for intervention to work toward progress in improving the quality of the parent relationship as well as the length of the relationship creating a stable home environment for each individual. The romantic relationship is a very significant factor in adolescent father presence and father involvement (Herzog et al., 2007).

Fathers of children with adolescent mothers may not know how to approach being a father and do not insert themselves into the situation. They may not have much knowledge about taking care of a child and may be afraid of doing much to care for or interact with the child. Additionally, if family relationships are tense or if the adolescent mother and father are not in a relationship, fathers of children with adolescent mothers may be less inclined to be involved.

Intervention with the goal of integrating fathers and improving feedback between the adolescent mother and father, may help improve the unit as a whole, possibly alleviating tensions among family members and helping fathers understand ways they can help adolescent mothers.

Current public service organizations such as the National Fatherhood Initiative could begin to target fathers of children with adolescent mothers rather than just adult fathers. They could consider difficulties that specifically affect father involvement with adolescent mothers, and their children. It is through these types of initiatives that fathers in these situations could have easy links to suggestions and readings that would be beneficial for their growth as fathers.

Future Directions

A large body of research has indicated that father involvement in adult parenting has a significant impact on child outcomes, and an emerging body of research has begun to show the effects adolescent father involvement and father involvement in cases of adolescent mothering, can have on their children. The current study attempts to extend this literature by examining the processes of father involvement through maternal satisfaction on child outcomes. There are many stressors involved with becoming parents for the first time, and adolescent mothers and fathers of children with adolescent mothers are dealing with typical parenting stressors as well as their pre-existing risk factors and characteristics. Although there were no significant path coefficients, the good-fitting model indicates a need to continue similar research considering father involvement as it relates to child outcomes directly and through maternal satisfaction. Additional research solely examining the influence of adolescent fathers will be beneficial for improving research literature as well as guiding intervention.

There are many negatives involved with adolescent parenting, especially in United States society. Further research in this area can help to determine ways these challenging situations

could be made more positive for each individual involved. Although it is an emerging area of research, adolescent father involvement does appear to have a positive influence on children's outcomes (Howard et al., 2006). It would be beneficial for future research to consider more heavily what challenges and barriers keep all fathers of children with adolescent mothers, but specifically adolescent fathers, from being involved and what supports need to be put in place to help the father and adolescent mother maintain a long-term relationship, as their relationship appears to be critical to father involvement.

This growing area of research is one that may benefit from qualitative research with the purpose of gaining rich information from the father's perspective. By directly discussing these issues with strictly an adolescent father population, researchers could gain information that can inform support systems, for instance, Paschal et al. (2011) conducted qualitative research with adolescent fathers to learn more about their perceptions of what it means to be a father.

Qualitative research on father involvement and father perceptions would be a good way to gain more information directly from the father about what things prevent him from being involved, his relationship with the adolescent mother, and fathering intentions for the future.

The problem conducting research with an adolescent father sample is they are difficult to recruit and maintain in research. Non-resident fathers of all ages are a difficult population to draw from (Hofferth et al., 2007). If researchers can find a way to recruit adolescent fathers, it would be best to gain qualitative or quantitative data directly from the adolescent father. Mother report may not be accurate as mothers tend to over-report father involvement. Future research could use father report as well as data collection methodology used in the current study to determine actual involvement over the past 24 hours at several time points.

Another area of research involving the adolescent father would be to examine the benefits the father may receive from being involved with his child and the child's mother. Most research has focused on the benefits for the adolescent parents' children and the adolescent mother, but more could examine the psychological benefits for adolescent fathers. Schindler (2010) reported that fathering can improve psychological functioning over time by improving self-esteem, self-efficacy, and psychological distress. It may be that fathers experience a sense of worth and empowerment from being involved with their children. Additional research in this area could expand upon these results.

One direction of future research could examine ways in which adolescent mothers may act as gatekeepers in blocking adolescent fathers from their children. Family systems theory puts a great deal of emphasis on feedback (White and Klein, 2002), and this perception of fathers may occur when she receives feedback from the father that indicates that he is not interested in being involved. She also may not perceive the father as a necessary part of the child's life, especially in cases where her own family and mother may play an integral part in helping with the child since it is common for adolescent mothers to reside with their own families (Gibson-Davis, 2008). The adolescent mother's family may influence the young woman to play this gate-keeping role if she has negative perceptions of the adolescent father.

The father, adolescent mother, and child of the young parents each contribute his and her own characteristics to the young family system. While there are many negatives that come about in research of adolescent pregnancy, there are also many directions for positive outcomes for each individual involved. The purpose of this study was to examine some of the effects of the adolescent mother and the father and the positive effects they can have on their children's

outcomes. It is clear fathers' involvement is related to children's outcomes and maternal satisfaction and that this is an area for continued research with many positive outcomes.

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