Fathering with Multiple Partners:

Links to Children's Well-being in Early Childhood*

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ABSTRACT

The claim that multiple partner fertility may pose a risk of adverse outcomes for children has not been tested. We test this argument using a sample of 4,027 resident fathers and children from the Fragile Families and Child Well-being Survey by examining the pathways through which fathers' multipartnered fertility is associated with children's externalizing behaviors and physical health status at 36 months. Path analyses indicate that multiple partner fertility exerted both a significant direct and indirect effect through paternal depression to influence children's externalizing behaviors. Fathers' multiple partner fertility also exerted a significant indirect effect through one mediator-father involvement-to influence children's physical health. This evidence suggests that the disruptions brought about by multipartnered fertility are important for understanding child well-being.

Child/adolescent outcomes Family Structure Father-child relations Fatherhood Fragile Families and Child Well-being (FFCW) Well-being

Recent trends in marriage and fertility suggest that some individuals may have biological children with more than one partner—a process referred to as "multiple partner fertility" (Furstenberg, 1995; Mincy, 2001). Estimates indicate that as many as 8% of U.S. men aged 15-44 report multiple partner fertility, and this percentage increases with age (Guzzo & Furstenberg, 2007; Logan, Manlove, Ikramullah, & Cottingham, 2006). A growing concern is the well-being of children who are the products of unions characterized by multiple partner fertility (Carlson & Furstenberg, 2006; Harknett & Knab, 2007). Although a larger body of research has examined how family complexities result from divorce, remarriage, and the creation of stepfamilies, and how these new families influence child well-being, several key distinctions between multiple partner fertility and stepfamilies exist: not all stepfamilies share a common child, not all multipartnered fertility couples have married, and men experiencing multiple partner fertility typically have repartnered earlier in the life course (Harknett & Knab, 2007). The trend toward family diversity, including multiple partner fertility, has led researchers to question the complexities and varieties of experiences that children in such contexts may face. Some researchers posit that changes in family configurations and parenting across multiple households may have a cumulative negative effect on children (Elder, 1974). Regrettably, however, researchers have yet to explore the question of *whether* and *how* parenting with multiple partners is associated with the well-being of young children.

Some scholars speculate that, in the context of multiple partner fertility, children may be at greater risk of adverse outcomes due to resource constraints in the form of temporal and economic supports for children (Carlson & Furstenberg, 2006; Furstenberg, 1995; Manning & Smock, 2000) and the number of competing demands that parents may have when children live across different households (Meyer, Cancian, & Cook, 2005). The stressors associated with the

complex family configurations that result from multiple partner fertility may also influence the quality of parenting provided by either parent as a result of modifications in family dynamics and organization across different households. These issues raise a generally important question: How do young children whose parents experience multiple partner fertility fare in terms of their well-being?

In this paper, we focus on the influence of fathers' multiple partner fertility on two aspects of young children's well-being in the preschool years: externalizing behaviors and physical health status. Our aim is to test the notion, suggested by Carlson and Furstenberg (2006), that young children may be at greater risk of adverse outcomes in the context of multiple partner fertility. We consider *whether* fathers' multiple partner fertility is associated with the social and emotional well-being of children, i.e., their externalizing behaviors, and physical health status; and examine *how* such effects come about by testing the mechanisms through which such associations may exist. Specifically, we ask the question: *What are the associations and direct and indirect pathways through which fathers' multiple partner fertility influences externalizing behaviors and the physical health status of young children?*

We focus on children's externalizing behaviors in the first years of life, which represent an important policy debate as early negative behaviors are precursors of later child outcomes, and preventing problem behaviors early is important for children's emotional stability and provides a springboard from which young children can explore and shape their environment through the development of self-regulatory strategies such as goal setting (Briggs-Gowan, Carter, Bosson-Heenan, Guyer, & Horwitz, 2006; Brody & Flor, 1996; Ejiri & Masataka, 2001). Health status is also an important predictor of children's social, emotional, and cognitive development, and an important predictor of subsequent academic progress, achievement and

behavioral adjustment (Baydar, Brooks-Gunn, & Furstenberg, 1993; Currie, 2005; Hamre & Pianta, 2001). We focus primarily on fathers' multiple partner fertility as previous research maintains that fathers' perspectives are "valid in and of themselves" and their fertility patterns are associated with parenting behaviors, family interactions and overall family functioning, with implications for child well-being (Arditti & Kelly, 1994; McBride & Rane, 1997). We limit the current analyses to resident fathers because the patterns and predictors of multiple partner fertility are structurally different for resident fathers versus non-resident fathers (Amato & Gilbreth, 1999; Amato & Sobolewski, 2004). By limiting our analyses to resident fathers, we are also able test whether multiple partner fertility has implications even for fathers with the strongest commitment to their partners and co-resident children.

BACKGROUND

Conceptual Framework

Because parents influence their children in varied ways, the theoretical mechanisms that explain the effects of fathers' multiple partner fertility on child outcomes are numerous and may work directly or indirectly. Multiple partner fertility may affect several mechanisms that in turn influence child outcomes, and some have been suggested in the literature, although not explicitly tested, including psychological well-being (stress and depression) and father engagement. These mechanisms are neither mutually exclusive nor exhaustive and can operate simultaneously (Carlson & Corcoran, 2001). We consider these mechanisms as indirect effects of fathers' multiple partner fertility on child well-being. Based on these mechanisms, Figure 1 provides the conceptual framework that guides the current analyses.

[Figure 1 about here]

Direct Associations between Multiple Partner Fertility and Child Outcomes

One possible explanation for the direct association between fathers' multiple partner fertility and child outcomes is that fathers that have children with multiple partners have unique characteristics that increase their likelihood of experiencing multiple partner fertility (Carlson & Furstenberg, 2006; Manlove, Logan, Ikramullah, & Holcombe, 2008), which may alter men's ability to manage their family obligations and responsibilities, and the ability to provide both time and economic resources to their children. Decreases in financial and social investments resulting from larger family sizes that extend across various households limit children's chances for success and diminish parents' ability to provide supportive, consistent, and involved parenting (Blake, 1981; Downey, 1995; Harris & Morgan, 1991; Mayer, 1997), a critical ingredient for positive child development (De Wolff & van IJzendoorn, 1997). Previous research has identified a number of factors associated with multiple partner fertility among fathers including being older, having a first sexual experience or a first child at a young age, fathering a child outside of marriage or cohabitation, and being Black or Hispanic (Manlove et al., 2008). These factors are also likely to influence fathers' resources, time, and ultimately child well-being. On the basis of prior research, we anticipate that fathers' multiple partner fertility will be *directly* and positively associated with child externalizing behaviors and directly and negatively associated with their health status outcomes. Specifically, fathers reporting fertility with multiple partners will have young children with higher levels of externalizing behaviors and poorer physical health.

Indirect Associations between Multiple Partner Fertility and Child Outcomes

Parenting Stress as a Mediator

Multiple Partner Fertility → Parenting Stress. Parenting stress is a distinct form of stress that reflects the anxieties, fears, and negative feelings that are evoked by the caregiving role (Crnic & Low, 2002; Scher & Sharabany, 2005) and stems from parents' perception of their child or children, the demands the child makes of them, and the demands of being a parent (McBride, 1991). To the best of our knowledge, no studies to date have examined associations between men's multiple partner fertility and parenting stress. However, everyday coping with complex changes in family configurations across different households and showing allegiance to old as well as new partners or children is likely to be stressful. Fathers who have children with multiple partners are likely to have less time to devote to separate families in different households and some studies suggest that having a larger number of children (even with one mother) is positively associated with parenting stress (Lavee, Sharlin, & Katz, 1996). Prior work done on stepfamilies suggested that repartnering represents a stressful shift because of the incorporation of new individuals into a new family unit and that stepparents often have unique stressors in the face of boundary ambiguity and unrealistic expectations about family relationships across different households (Cherlin & Furstenberg, 1994; Crosbie-Burnett, 1989; Fine, 1995). Resident fathers with children by different mothers across different households are similarly likely to have difficulty navigating complicated family relationships and may be unclear about their expected role with each child, making parenting more stressful for these men. The experience of having children with multiple partners is expected to be especially stressful for fathers as they attempt to balance responsibilities and obligations not only across a larger number of children, but also across multiple households.

Parenting Stress → Father Engagement. Engagement measures the extent to which fathers engage in direct contact and shared interactions with their children in the context of care-

giving, play, or leisure (Lamb, 1997; Lamb, Pleck, Charnov, & Levine, 1987). Early evidence using small select samples of fathers, primarily from white middle class households, suggests that fathers do experience childrearing stress (Seginer, Vermulst, & Gerris, 2002), which is associated with lower levels of father-child engagement (Bronte-Tinkew, Horowitz, & Carrano, Under review; Halme, Tarkka, Nummi, & Astedt-Kurki, 2006). Other studies also suggest that external stressors such as those experienced due to changes in family configurations and parenting across different households may have a significant influence on father-child relationships, and parenting stress may be accompanied by harsher parenting behaviors (Almeida, Wethington, & Chandler, 1999) and less responsive parenting practices (Almeida et al., 1999; Crouter, Bumpus, Head, & McHale, 2001; Short, 1997). Parenting stress is therefore expected to be negatively associated with levels and the quality of father involvement.

Parenting Stress → Depressive Symptoms. Parenting stress is also likely to be associated with men's overall psychological well-being. Prior research suggests that higher levels of stress may contribute to depression (National Institute of Mental Health, 2002). Studies on the associations between parenting stress and parents' psychological well-being, however, are scant, and the majority of those that do exist focus on maternal stress in parenting to the exclusion of fathers (Mowbray, 2002). We anticipate similar patterns for men, such that higher levels of parenting stress will be linked to higher paternal depressive symptomology.

Parenting Stress → Child Outcomes. A large body of research suggests that parenting stress is associated with poorer social and emotional development for young children (Abidin, 1995; Benzies, Harrison, & Magill-Evans, 2004; Crnic, Gaze, & Hoffman, 2005; Magill-Evans & Harrison, 2001). A handful of studies have examined associations between parenting stress and children's health status, finding that parenting stress is associated with an increased number

of sick visits and traumatic injury visits for two- to four-year-old children (Abidin, 1982), and some studies have also found that parenting stress is higher among parents of children with chronic illnesses and/or disabilities (Anastopoulos, Guevremont, Shelton, & DuPaul, 1992; Goldberg, Morris, Simmons, Fowler, & Levison, 1990; Kazak & Marvin, 1984). Given existing evidence, we anticipate that parenting stress will *mediate* the association between multiple partner fertility and child externalizing behaviors and physical health status. In the context of multiple partner fertility and parenting across different households, fathers will have higher levels of parenting stress, which will directly reduce father involvement, resulting in poorer child outcomes. Higher levels of parenting stress will also be associated with higher levels of depressive symptoms, which in turn may also have a negative influence on children's well-being.

Depression as a Mediator

Multiple Partner Fertility → Depressive Symptoms. While no prior studies have directly examined the association between men's multiple partner fertility and fathers' psychological well-being, research on the mental health of fathers of newborns and infants suggests that there is reason to suspect an association. Some studies find that depression is highest among fathers experiencing changes in relationships, such as divorce or separation (Bronte-Tinkew, Moore, Matthews, & Carrano, 2007), suggesting that men who experience relationship changes brought on by multiple partner fertility due to fathering across households may have poorer psychological well-being. Multiple partner fertility is often accompanied by changes in established family relationships, and so we expect that a father's subsequent birth with a new partner in a different household would be associated with a decline in psychological well-being, especially among resident fathers who have a child with a new partner while still residing with the mother of their previous children. Fathers that have children with multiple partners are also

likely to have less time to devote to separate families in different households (Harknett & Knab, 2007) and their psychological well-being may suffer as a result of competing obligations across multiple households.

Depressive Symptoms → Father Engagement. A recurring theme in the literature is that men facing impending and new fatherhood confront a set of adjustments and challenges (Henderson & Brouse, 1991; Strauss & Goldberg, 1999). The literature linking paternal depression to father's functioning suggests that paternal depression affects a father's ability to engage his child in activities (Ballard, 1996; Bronte-Tinkew, Moore et al., 2007). When fathers have negative emotion or moods (both of which are symptoms of depression), engagement with children becomes more conflictual (Larson, 1999), and levels of positive engagement decrease (Pleck, 1997). Also, fathers experiencing psychological distress are more likely to be unresponsive to their children, or even to become hostile (Almeida, Wethington, & McDonald, 2001; Cohn, Cowan, Cowan, & Pearson, 1993). In the context of fathering across households as is likely the case when fathers experience multiple partner fertility, paternal depression may be accompanied by less caring and nurturing behavior towards children.

Depressive Symptoms → Child Outcomes. In general, poorer parental mental health has been shown to be strongly associated with an increased risk for the development of emotional and behavioral problems in children (Black et al., 2002; Bronte-Tinkew, Zaslow, Capps, Horowitz, & McNamara, 2007; Cohn, 1986; Lovejoy, Graczyk, O'Hare, & Neuman, 2000). Studies of mothers have also found that depression is associated with higher rates of multiple unintentional injuries (Russell, 1998) and with poorer health status (Casey et al., 2004) for young children. Taken together, the available research leads us to believe that fathers' depressive symptoms will *mediate* the association between multiple partner fertility and child externalizing

behaviors and physical health. Specifically, multiple partner fertility and fathering across different households will be associated with higher levels of depressive symptoms for fathers, which in turn will be associated with higher levels of externalizing behaviors and poorer health status for children.

Father Involvement as a Mediator

Multiple Partner Fertility → Father Engagement. A handful of recent studies suggest that men's multiple partner fertility may reduce contact between fathers and young children as it has effects on the structure and quality of ties and relationships (Manning, Stewart, & Smock, 2003). In large families, fathers have less time during which they can interact with each child (Harris & Morgan, 1991). Fathers with multiple partner fertility face additional demands (often conflicting) due to the need to invest their time and money across different households (Hamer, 1998; Harknett & Knab, 2007), thus reducing their involvement with all children, and especially their previous children. Fathers may "swap" families, reducing investments in former children when they form new relationships, especially if these new relationships involve new children (Furstenberg, Nord, Peterson, & Zill, 1983; Manning & Smock, 1999, 2000). Fathers who have children with multiple partners across different households may decrease their involvement with children from previous relationships for two additional reasons. First, involvement with previous children (especially nonresident children) may decrease stability in the new relationship (Monte, 2007), and so fathers may consciously reduce involvement with former children in order to strengthen their new relationship. Furthermore, mothers of children from previous relationships may increasingly restrict fathers' access to, and thus involvement with, these children as fathers form new relationships and attempt to parent across different households (Monte, 2007). In short, father's involvement with existing children will decline as men father additional children

with new partners in different households.

Father Engagement → Child Outcomes. A large body of research suggests that, across developmental domains, father involvement is associated with positive outcomes for children (Bronte-Tinkew, Carrano, Horowitz, & Kinukawa, 2008; Lamb, 1997; Lamb, Hwang, Ketterlinus, & Fracasso, 1999; Shannon, Tamis-Le Monda, London, & Cabrera, 2002). Fewer studies, however, have examined associations between father involvement and child health outcomes. As a whole, this body of research is mixed. One study of fathers of preterm infants, for example, found fathers' frequency of visits with the child in the hospital after birth to be associated with increased weight gain during hospitalization (Levy-Shiff, Hoffman, Mogilner, Levinger, & Mogilner, 1990). Another study found fathers' prenatal involvement to be positively associated with the use of prenatal care and negatively associated with maternal use of cigarettes and alcohol during pregnancy (Teitler, 2001), which in turn may be associated with better health outcomes. However, this same study found no association between fathers' prenatal involvement and children's birth weight (Teitler, 2001). On the basis of available evidence, we anticipate that father involvement will *mediate* the association between multiple partner fertility and child outcomes. Specifically, fathers with multiple partner fertility who parent across different households will have lower levels of father involvement with children and this will be associated with higher levels of child externalizing behaviors and poorer child health.

Additional Factors Associated with Multiple Partner Fertility and Child Outcomes

Additional father, mother, and child characteristics are likely to influence men's multiple partner fertility and/or child outcomes. To better isolate the relationship between multiple partner fertility and child outcomes, we account for these potentially confounding factors.

Father Characteristics. We account for father's age as this has been found to be positively associated with multiple partner fertility (Carlson & Furstenberg, 2006; Logan et al., 2006). We also account for father's race/ethnicity, as some studies have found that multiple partner fertility is more likely to occur among black fathers (Carlson & Furstenberg, 2006; Sonenstein, Ku, & Pleck, 1997) and child behavior problems may be higher among non-Hispanic blacks than among other racial/ethnic groups (Zimmerman, Khoury, Vega, & Gil, 1995). Educational attainment is included because higher levels of education have been found to be associated with a lower likelihood of multiple partners (Carlson & Furstenberg, 2006), increased health knowledge (Blaylock, Variyam, & Lin, 1999) and lower levels of behavior problems among children (Kalff et al., 2001). We also consider the number of children fathered, as most studies suggest that men decrease subsequent fertility based on their parity (Schoen, Young, Nathanson., Fields, & Astone, 1997). We consider fathers' pregnancy intentions as fathers who report an unintended pregnancy have greater odds of multiple partner fertility (Carlson & Furstenberg, 2006). We include an indicator of men's income because less economically advantaged men generally have more births (Forste, 2002) and increased odds of a subsequent birth with a new partner (Guzzo & Furstenberg, 2006). Furthermore, poverty is associated with a host of poorer child outcomes (Dearing, Berry, & Zaslow, 2006; Eamon, 2000).

We consider father's residential status at 36 months to account for residential transitions since baseline as these transitions may have effects on fathers' psychological well-being and involvement (Amato & Gilbreth, 1999; Eggebeen & Knoester, 2001) as well as children's externalizing behaviors and physical health (Carlson, 2004; Cavanagh & Huston, 2006). We also include marital status since, compared to unmarried fathers, married fathers have been found to be more positively involved with children (Hofferth & Anderson, 2003), and children born to

unmarried parents show poorer cognitive, socio-emotional and health outcomes than children born to married parents (Acs & Nelson, 2002; Manning, 2002). Unmarried parents are also more likely to experience multiple partner fertility (Carlson & Furstenberg, 2006). We account for conflict in the father-mother relationship as having children outside the household is associated with high levels of relationship conflict among parents experiencing multiple partner fertility (Monte, 2007). Unmarried couples in which at least one parent has experienced multiple partner fertility are also less optimistic about the likelihood of marrying and are less likely to be married 12 to 18 months later (Waller & McLanahan, 2005), further suggesting that multiple partner fertility may act as a strain on relationship quality. Also, relationship conflict and hostility have been found to be associated with poor child outcomes (Gable, Belsky, & Crnic, 1992; Grych & Fincham, 1990; Howes & Markman, 1989; Katz & Gottman, 1996).

Mother Characteristics. We include the age of the focal child's mother because mothers who give birth for the first time at a young age are more likely to experience multiple partner fertility (Carlson & Furstenberg, 2006). Furthermore, lower maternal age at birth is associated with poorer child outcomes (Deijen et al., 2002; National Institute of Child Health and Human Development, 1997). We also consider mother's multiple partner fertility as this has potential effects on the structure and quality of ties to extended family networks and, in turn, affects children's access to social and economic capital (Harknett & Knab, 2007).

Child Characteristics. We account for child gender because research suggests that boys are more likely than girls to exhibit externalizing behaviors (Rescorla et al., 2007; Scher & Sharabany, 2005) and may have higher rates of chronic physical conditions (Newacheck & Halfon, 1998). Furthermore, unmarried parents are less likely to marry soon after the birth of a daughter than after the birth of a son (Lundberg & Rose, 2003), and so fathers of daughters may

be more likely to experience subsequent fertility with a new partner. We include child temperament because a difficult temperament is associated with later behavior problems and poorer physical health among infants and preschool-aged children (Carey, 1992; Crockenberg & Leerkes, 2005; Keenan, Shaw, Delliquadri, Giovannelli, & Walsh, 1998). Fathers of a child with a difficult temperament may also exhibit higher levels of parenting stress (Deater-Deckard, Smith, Ivy, & Petril, 2005). Finally, we consider child age because the ways in which children exhibit negative behaviors may vary by age (Loeber, 1982).

Prior Behaviors. We also account for father's depressive symptoms, father involvement and parenting stress at a prior time point (12 months) to control for the effects of fathers' earlier well-being on their current levels of depression, involvement, and paternal stress. Including these measures from 12 months ensures that any significant associations we observe between our other predictors and each mediating variable are net of the effects of prior levels of depressive symptoms, father involvement, and parenting stress, which may be strong predictors of later behaviors.

METHOD

Data

The current analyses are based on data from the Fragile Families and Child Well-being Study (Fragile Families) baseline, 12-month, and 36-month surveys. Fragile Families is a national longitudinal study designed to examine the characteristics of unmarried parents, their relationships, and consequences for children in cities with populations over 200,000. Data collection began in 1998 and was completed in 2005. The study provides information on the characteristics and capabilities of new fathers, on the relationships between urban mothers and fathers, on the factors that push parents together or apart, and on how public policies (such as

welfare reform) affect parents' behaviors and living arrangements. The study follows a birth cohort of 3,712 children born to unmarried parents (and a comparison group of 1,186 children born to married parents) across 20 U.S. cities (McLanahan et al., 2001). Sample weights make these data representative of births in large U.S. cities with populations over 200,000.

Parents were first interviewed at the child's birth, and further interviews were scheduled when the child was one, three, and five years old. Sampled children were drawn from births at 75 hospitals in 20 cities. Both fathers and mothers were interviewed in the hospital, separately, following the birth of their child (Carlson, McLanahan, & Brooks-Gunn, 2008). At baseline, roughly 89% of eligible married fathers and 76% of eligible unmarried fathers responded to the interview. Response rates, however, were lower for fathers who were not romantically involved at the time of birth (38%) and higher for cohabiting fathers (90%) (Carlson, Mclanahan, & Brooks-Gunn, 2007). At three and five years, the In-Home Longitudinal Study of Pre-School Aged Children ("In-Home Module"), was fielded to collect information on physical environments, parenting, and children's outcomes through parent interviews and direct observations (Center for Research on Child Wellbeing, 2005). Of those respondents who took part in the 36-month core survey, more than 79% participated in the In-Home Module (Center for Research on Child Wellbeing, 2005).

Sample for Analyses. Our analytic sample includes those fathers who resided with the focal child at birth (resident). Regarding residential transitions, among the 4,027 resident fathers at baseline, 3,434 fathers were still residing with the focal child at the time of the 12-month survey and 3,548 fathers were resident at the time of the 36 month survey. This reflects that a small number of fathers transitioned into and out of resident status across the three waves of the study. To derive the sample for the physical health models, of the original sample of 4,898 cases

of mothers and children for which a baseline survey was completed, 871 fathers did not live with their child at baseline (non-resident) and so were excluded from our sample. An additional 861 cases were missing data on the physical health status outcome measure, leaving us with an analytic sample of 3,166 for the physical health model. For the models for externalizing behaviors, 1,907 cases did not have valid outcome data, leaving us with an analytic sample of 2,120 cases of resident biological fathers for models examining child externalizing behaviors.

For the analyses of externalizing behaviors, compared to the sample of fathers not included in the analyses, fathers in this analytic sample were slightly more likely to have completed education beyond high school (35.6%, compared to 30.8% excluded from the sample). Fathers in the analytic sample for externalizing behaviors were less likely to be black and more likely to be white than fathers excluded from the sample (32.6% black and 43.4% white, compared to 40.6% black and 33.3% white among excluded fathers). Fathers were slightly less likely to be Hispanic (20.5% Hispanic compared to 22.7% Hispanic among fathers excluded from the sample). Fathers in the analytic sample for externalizing behaviors had higher household incomes at 12 months ($44,000) compared to $39,000 among fathers excluded from the sample).

For the analyses of child physical health, compared to the sample of fathers not included in the analyses, fathers in this analytic sample were more likely to have completed education beyond high school (35.9%, compared to 26.6% excluded from the sample). Fathers in the analytic sample for physical health were less likely to be black and more likely to be white than fathers excluded from the sample (30.3% black and 43.4% white, compared to 52.0% black and 25.7% white among excluded fathers). Fathers were slightly more likely to be Hispanic (22.8% Hispanic, compared to 19.1% Hispanic among fathers excluded from the sample). Fathers in the

analytic sample for physical health had higher household incomes at 12 months ($44,000, compared to $34,000 among fathers excluded from the sample).

Measures

Dependent Variables

Externalizing Behaviors. Items from the Aggressive subscale of Achenbach's 1992 Child Behavior Checklist (Achenbach, 1992) were used to measure child externalizing behaviors. These items were derived from the 36-month In-Home module. The CBCL is the most widely used instrument for identifying and assessing problematic behavior in young children (Center for Research on Child Wellbeing, 2005). Parents were asked whether it is *not true*, *somewhat/sometimes true*, or *very/often true* that the child: is defiant; insists that his/her demands must be met immediately; cannot concentrate for long; cannot sit still; is cruel to animals; is disobedient; is easily frustrated; is easily jealous; gets in many fights; hits others; has angry moods; does not change his/her behavior after being punished; screams a lot; destroys his or her own things; destroys things belonging to his or her family or other children; gets into everything; is selfish or will not share; has sudden changes in mood or feelings; hurts animals or people without meaning to; quickly shifts from one activity to another; has temper tantrums or a hot temper; is unusually loud; and is whiny. Responses for each item were summed to create a single index, ranging from 0 to 46 (*mean* = 12.1, $\alpha = 0.86$), with higher scores indicating higher levels of externalizing behaviors.

Physical Health Status. Children's physical health status at the time of the 36-month follow-up survey is operationalized as a continuous variable based on the mother's report of whether the child is in *excellent*, *very good*, *good*, *fair*, or *poor* physical health. Higher scores

indicate better physical health (*range* = 0 – 4; *mean* = 3.5).

Independent Variable

Father's Multiple Partner Fertility. This measure captures whether the father ever had a child with a woman other than the focal child's mother at any time using both father and mother reports. This measure was derived from separate measures. First, at 12 months, the mother was asked whether the child's father had children with any other woman. In addition, at the time of the 36-month survey, fathers were asked if they were expecting another baby or if they had fathered another child since the focal child's first birthday. If so, fathers were asked if the focal child's mother was the mother of the new child(ren). If respondents answered affirmatively to at least one of these questions, fathers were coded as having experienced multiple partner fertility. If they responded negatively to both, they were coded as not having experienced multiple partner fertility. Using both mother and father reports, 33.2% of fathers had experienced multiple partner fertility.

Mediators

Paternal Depressive Symptoms. Depressive symptoms were measured at the 36-month follow-up using the Composite International Diagnostic Interview – Short Form (CIDI-SF) (Kessler, Andrews, Mroczek, Utsun, & Wittchen, 1998) and is a continuous measure created from seven items that indicate the way the respondent may have felt or behaved over a two week period of depression during the past year. Items include losing interest, feeling tired, a change in weight, trouble sleeping, trouble concentrating, feeling worthless and thinking about death. Scores on the CIDI-SF ranged from 0 to 7 (mean = 2.54; $\alpha = 0.87$), with higher scores indicating increased depressive symptomology.

Parenting Stress To measure fathers' *parenting stress* at 36 months, a four-item index

was used from items adapted from the Parenting Stress Index (PSI) originally developed by Abidin (1983) as a screening and diagnostic assessment technique to yield a measure of the magnitude of stress in the parent-child system. The original PSI consists of 101 items which were originally designed to measure stress in four domains (total stress, child domain, parent domain, and life stress) (Abidin, 1995). In this study, a short form of the original index was used to specifically identify parenting stress, and this form does not include stresses associated with other life roles and events. The index was comprised of four items asking fathers to report how true it was that: being a parent is harder than they thought it would be; they feel trapped by their responsibilities as a parent; they find that taking care of their children is much more work than pleasure; and they often feel tired, worn out or exhausted from raising a family. The responses are measured on a four-point scale ranging from 0 = *strongly disagree* to 3 = *strongly agree*. Scores on the parenting stress scale range from 0 to 12 (*mean* = 4.2, $\alpha = 0.82$), with higher scores indicating increased levels of parenting stress.

Father Engagement. At 36 months, fathers were asked how many days per week, on average, they: play imaginary games with the child; sing songs or nursery rhymes to the child; read stories to the child; tell stories to the child; play inside with toys such as blocks or Legos with the child; take the child to visit relatives; hug or show physical affection to the child; tell the child that he loves him/her; help the child eat; let the child help with household chores; go out to eat with the child; tell the child that he appreciates something he/she did; and put the child to bed. Scores for each of these items were summed to create a single continuous index of father involvement (*range* = 0 – 91, *mean* = 55.4, $\alpha = 0.84$).

Additional Sociodemographic Variables (Controls)

We include several measures of father, mother, and child characteristics in our analyses

to control for potentially confounding influences.

Father Characteristics. We include a categorical variable for *fathers' education* (high school/GED or less or some college or more) and continuous variables for *father's age, number of children,* and *household income*, all measured at the 12-month survey. Fathers' *race* is measured as a categorical variable (non-Hispanic White, non-Hispanic Black, Hispanic, or other race/ethnicity) at baseline. Measures of fathers' *depressive symptoms* and *parenting stress* at 12 months were also included in the analyses, and are operationalized in the same manner as in the 36-month survey. We also control for father involvement at 12 months using an index based on fathers' responses to how many days per week they: play games like "peek-a-boo" or "gotcha" with the child; sing songs or nursery rhymes to the child; read stories to the child; tell stories to the child; play inside with toys such as blocks or Legos with the child; take the child to visit relatives; hug or show physical affection to the child; and put the child to bed. Scores for each of these items were summed to create a single continuous measure of father involvement (*range* = 0 – 56, *mean* = 35.8, $\alpha = 0.74$). We include a dichotomous variable of fathers' *resident status* at 36 months to indicate whether the father still resided with the focal child or had become a nonresident father. We include a dichotomous measure of *father-mother marital status* to indicate whether parents were married or cohabiting at baseline. We also include a measure of *father-mother relationship conflict* at 12 months using a continuous variable. Fathers were asked how frequently they argue with their child's mother: *always*, *often*, *sometimes*, *rarely*, or *never*. Responses on this measure ranged from 0 to 4, with higher scores indicating more frequent conflict (*mean* = 1.7).

Mother Characteristics. We include a continuous measure of *mother's age* at the time of the 12-month survey. We also include a dichotomous measure of *mother's multiple partner*

fertility by assessing whether the mother has children with partners other than the focal child's father to account for the additional family configurations faced by the mother and child.

Child Characteristics. We include a categorical variable indicating the *child's gender* (male or female). We also include a measure of *child temperament*, based on three items from the Emotionality, Activity, Sociability, and Impulsivity (EASI) scale (Buss & Plomin, 1975) as reported by mothers at the 12-month survey. For these items, the respondent indicated whether certain statements reflect his/her child's behavior, ranging from 1 = *not at all like my child* to 5 = *very much like my child*. We include the mean of three items that indicate difficult temperament: "he/she often fusses or cries," "he/she gets easily upset," and "he/she reacts strongly when upset." Scores for these items were averaged to create a 3-item scale (*range* = 0 - 5, $\alpha = 0.56$). Higher scores indicate a more difficult temperament. Maternal reports on this measure are shown to correspond with observations from independent reviewers obtained during the in-home study (Carlson et al., 2008). Last, we include a continuous measure of *child's age* (in months) at the time of the 36-month survey administration. We measure this at the 36-month survey because child outcomes vary depending upon when the child assessments were conducted.

Analytic Strategy

We first derived weighted descriptive statistics for our variables and samples of interest and ran correlation analyses to examine associations between variables. Second, we used path analysis with a covariance estimation for mediational analyses in MPLUS (Muthén & Muthén, 2006) that allowed us to test direct and indirect effects of men's multiple partner fertility on child outcomes. Results are presented in terms of nested models. Third, Sobel tests (Sobel, 1982)

were conducted to determine the statistical significance of each of the intervening, or mediating, variables on the physical health and externalizing behaviors outcomes.

Prior to estimating our models, we used multiple imputation techniques to obtain complete cases for all independent variables used in the analyses. We used Missing Values Analysis procedures in SPSS to impute missing cases for all mediating and control variables using the expectation maximization (EM) algorithm (Allison, 2001) in SPSS (SPSS Inc., 2007) to obtain complete cases for all fathers in the analytic sample on these variables. This approach is preferred to either deleting missing cases list-wise or pair-wise, or mean substitution, and produces less biased results (Allison, 2001; Byrne, 2001).

Finally, in the analyses we were cognizant of the issues associated with bias resulting from the status of being a resident father. We relied on a Heckman 2-stage model designed to correct for selection bias due to both observed and unobserved heterogeneity (Heckman, 1979). In the two-equation model that was used, the first stage selection equation predicted being resident (compared to being non-resident) at the time of the focal child's birth based on respondents' age, race/ethnicity, income, education, substance abuse, and incarceration experience. The second-stage equation predicted our outcome variables. We calculated lambda, the probability of being resident, based on the selection variables and included it as a control variable in the multivariate analyses (models described below). The lambda values for the selection equation were not significant in the models, indicating that although the resident fathers in the analytic sample did differ on preexisting individual characteristics from the men excluded from analyses, selection may not be as serious a problem for these analyses.

RESULTS

Descriptive Statistics

Table 1 presents descriptive statistics for all variables used in the analyses. At 36 months, caregivers reported relatively low levels of behavior problems among children. Children scored a mean of 13.1 on the measure of externalizing behaviors (*range* = 0 - 41), and, on average, children were reported to be in very good to excellent health (3.5, on a scale of 0 – 4). About one-third of resident fathers had experienced multiple partner fertility. At 36 months, fathers reported a moderate level of involvement, with an average of 53.7 (*range* = 0 - 91). Levels of parenting stress at 36 months were also moderately low, with fathers reporting a mean of 4.4 on a scale of 0 - 12. Fathers also reported low levels of depression (2.54, on a scale of 0 - 7). Nearly half of resident fathers (44.9%) were white, 28.8% were black, 22.7% were Hispanic, and 3.6% were of another race/ethnicity. On average, fathers were 29.8 years old. One in three fathers (35.4%) had completed more than high school. Resident fathers had an average of 1.5 children at the time of the 12-month survey. Fathers reported relatively low levels of mother-father conflict at 12 months (1.8 on a range of 0 - 4).

[Table 1 about here]

Differences between Fathers Experiencing Multiple Partner Fertility and Fathers with Multiple Children with the Same Partner

To better understand how resident fathers experiencing multiple partner fertility differed from other fathers, we also compared our analytic sample to 1) a sample of fathers from the Fragile Families that had two or more children with the same partner, and to 2) fathers who had only one child (results not provided). These analyses show that across all three samples, resident fathers that experienced multiple partner fertility were slightly older, more likely to be white, and had lower levels of education and household income compared to fathers with two or more children with the same partner and fathers with only one child. Resident fathers in our analytic

sample that experienced multiple partner fertility were also less likely to report that the focal child's birth was unwanted, and had higher levels of parenting stress.

Correlation Analyses

Table 2 presents the correlations between the primary predictor (multiple partner fertility), the mediators, and the outcome variables. All correlations were in the expected direction. Fathers' experience of multiple partner fertility was significantly and negatively correlated with father involvement and positively correlated with children's externalizing behaviors. In terms of the mediators, father involvement was negatively correlated with paternal depressive symptoms (-0.054, $p < .05$) and parenting stress (-0.123, $p < .001$). Paternal depressive symptoms and fathers' parenting stress were positively correlated with each other (0.25, $p < .001$). Finally, the two child outcomes, externalizing behaviors and physical health were significantly and negatively correlated (-0.168, $p < .001$).

[Table 2 about here]

Multivariate Analyses

What are the associations and pathways through which fathers' multiple partner fertility influences externalizing behaviors and the physical health status of young children?

As a first step in the analyses (results not shown), we were interested in establishing an association between our primary predictor of fathers' multiple partner fertility and each of the proposed mediators. Net of controls, we found that multiple partner fertility was positively associated with paternal depression and parenting stress, and negatively associated with father involvement. The analyses that are presented in Tables 3, 4, and 5 focus on children's externalizing behaviors and physical health as the dependent variables.

Externalizing Behaviors. Table 3 presents results of the path analysis examining whether

fathers' multiple partner fertility is associated with children's externalizing behaviors at 36 months of age. *Model 1*estimated the overall direct effect of fathers' multiple partner fertility on children's externalizing behaviors (excluding mediators). This model showed that fathers' multiple partner fertility was directly and positively associated with children's externalizing behaviors, although the effect size was small (.058). This suggests that although the results are significant, the actual magnitude of the direct association between fathers' multiple partner fertility and children's externalizing behaviors was very small.

To evaluate the contribution of the mediators to the externalizing behaviors outcome, each mediator was entered one at a time in *Models 2* through *Model* 4. *Model 4* (the full model) shows the full effects of fathers' multiple partner fertility on externalizing behaviors including mediators (and net of controls); this model showed that after including the mediators, experiencing multiple partner fertility was still positively associated with children's externalizing behaviors at 36 months. The inclusion of paternal depressive symptoms, parenting stress, and father involvement however reduced the unstandardized coefficient for the relationship between fathers' multiple partner fertility and children's externalizing behaviors by 33%, suggesting that, cumulatively, these factors mediate the effects of multiple partner fertility on externalizing behaviors. Additional Sobel tests (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) to determine the significance of each of these mediators (Table 4) confirmed, however, that of the three mediators considered, only father's depressive symptoms was a significant mediator. In short, multiple partner fertility exerted both a direct and indirect significant effect through paternal depressive symptoms ($Z = 2.31$; $p = .01$), to influence children's externalizing behaviors. The effect size for paternal depressive symptoms was also very small (0.172).

[Table 3 about here]

[Table 4 about here]

Physical Health. Table 5 presents results of the path analysis examining whether fathers' multiple partner fertility is associated with children's physical health at 36 months. Again, *Models 1* through *Models 4* estimated the overall direct effect of fathers' multiple partner fertility on children's physical health, adding each of the mediators one at a time to evaluate the contribution of the mediators to the physical health outcome.

Model 4 (the full model) showed the full effects of fathers' multiple partner fertility on physical health (including mediators and net of controls).This model showed that experiencing multiple partner fertility was not directly associated with children's physical health at 36 months. The inclusion of paternal depressive symptoms, parenting stress, and father involvement however reduced the unstandardized coefficient for the relationship between fathers' multiple partner fertility and children's physical health by 61%, suggesting that these factors partially mediate the effects of multiple partner fertility. Additional Sobel tests (MacKinnon et al., 2002) for these mediators showed that multiple partner fertility exerted a significant indirect effect, but only through one mediator-father involvement (Z = -1.47; p = .03), to influence children's physical health (Table 5). Father involvement had a small effect size (.125).

[Table 5 about here]

DISCUSSION

Using data from the Fragile Families and Child Well-being Study and a sample of resident fathers who lived with their infants at birth, the goal of the present analyses was to explore the associations and pathways through which resident fathers' multiple partner fertility was associated with the externalizing behaviors and health status of their children at 36 months. We tested Carlson and Furstenberg's (2006) notion that children in families experiencing

multiple partner fertility may be at greater risk for adverse outcomes. We found evidence to support some of our hypotheses. Overall, our findings suggest that the effects of the disruptions brought about by fathers' fertility with multiple partners are in general relatively small and work both directly and indirectly through depressive symptoms to influence children's externalizing behaviors, and work only indirectly through father engagement to influence the physical health status of young children, already by the age of three.

Direct Associations between Multiple Partner Fertility and Child Outcomes. We hypothesized that there would be a direct positive association between fathers' multiple partner fertility and child externalizing behaviors and a direct negative association with children's physical health status. This hypothesis was partially supported for only one outcome-externalizing behaviors, and the effects were very small. The significant direct association between multiple partner fertility and child externalizing behaviors supports the notion that the effects of multiple partner fertility are particularly detrimental to young children's social and emotional well-being, and support the "resource dilution" hypothesis (Blake, 1981, 1989). As is evident here, multiple children with different partners across households may dilute and deplete existing resources with negative consequences beginning in early childhood. Surprisingly, the lack of a direct significant association for the physical health outcome may suggest that the effects of multiple partner fertility on physical health are less detrimental. The lack of a significant association may also reflect the fact that physical health is a less susceptible or sensitive measure to multiple partner fertility than other aspects of child well-being. Nevertheless, these findings suggest that the negative effects of resource dilution due to fathering with multiple partners across different households has direct negative implications for children's socio-emotional outcomes.

Parenting Stress as a Mediator. We hypothesized that parenting stress would mediate the association between men's multiple partner fertility and child externalizing behaviors and physical health status, but, surprisingly, this hypothesis was not supported. Although multiple partner fertility was found to be associated with higher parenting stress, parenting stress was not associated with poorer externalizing behaviors or children's physical health. The lack of significant findings suggest that while resident fathers who have children with multiple partners and parent across different households face challenges that cause perceived difficulty and high levels of stress, this stress, however, does not translate into or adversely affect young children's behaviors and physical health. One likely explanation for this is that parenting stress influences other child outcomes not examined in the current study such as internalizing behaviors (Ashford, Smit, van Lier, Cuijpers, & Koot, 2008), or an alternative explanation is that the effects of parenting stress may have a stronger influence when children are older (Benzies et al., 2004). There may be a delay in the effect of early parenting stress, so that the negative consequences are not observed until children are older (i.e., older than 36 months), or parenting stress that occurs at later ages may be more directly associated with child well-being.

Depressive Symptoms as a Mediator. We hypothesized that depression would mediate the association between multiple partner fertility and child outcomes, and our analyses support this hypothesis, but only for the externalizing behaviors outcome. Multiple partner fertility was associated with higher levels of depressive symptomology, which in turn was associated with higher levels of child externalizing behaviors. This finding suggests that multiple partner fertility is associated with poorer psychological well-being for men, confirms previous research suggesting that parental depressive symptoms is negatively associated with child well-being (Cohn, 1983; Petterson & Albers, 2001), and adds to the small body of previous research

showing that paternal depressive symptoms, not only maternal depression, has consequences for healthy child development (Bronte-Tinkew, Moore et al., 2007).

The lack of depression as a significant mediator for the physical health outcome, on the other hand, suggests that children's physical health may not be susceptible to fathers' psychological well-being, but may depend more on fathers' direct contact with children, and their care-giving abilities (Teitler, 2001). The lack of a significant finding may also reflect the fact that the measure of physical health used in the analyses was a global measure of health based on mothers' reports, which may have resulted in an underreporting of children's actual health problems. Research that utilizes medical records or actual diagnoses to measures children's health problems may have yielded different results from the findings presented in the current analyses. However, physical health problems are also fairly rare at age 3, and very few children were found to have poor physical health in our analytic sample, which may also explain why there was no significant association. Future research using additional waves of the Fragile Families data may find a stronger association between fathers' depression and children's physical health when children have been exposed to fathers' depressive symptomology for a longer period of time, and as physical health problems become more evident in older children.

Father Involvement as a Mediator. We hypothesized that father involvement would mediate the association between multiple partner fertility and child outcomes. This hypothesis was supported for one of our two outcomes – physical health. This finding adds to a very small body of research suggesting that father involvement may be lower among men who experience multiple partner fertility (Manning et al., 2003). Even among resident fathers, men become less involved with each individual child as the overall number of children increases (Pleck, 1997), and this is especially likely when fathers have children across different households. For fathers

experiencing multiple partner fertility, remaining involved even with resident children (Furstenberg & Cherlin, 1991) is likely to involve a large time commitment (Cooksey & Craig, 1998; Seltzer, 1991), and multiple partner fertility and parenting across households is seen here to reduce fathers' involvement with children with whom they have previously resided. In short, fathers may reduce their social investments in children with whom they have lived as they take on new parenting roles in different households. These findings support additional work showing that father involvement is crucial for children's well-being in the early years (Amato & Rivera, 1999; Lamb, 1997) but extends this work to show that father involvement is associated with children's physical well-being.

The surprising finding that father involvement was not a significant mediator for the externalizing behaviors outcome may reflect the notion that the association between father involvement and children's behavioral problems may be completely driven by children's behaviors or there may be a reciprocal association which is not considered in the current analyses. A growing body of research focuses on child well-being as a predictor of father involvement (Crockenberg & Leerkes, 2005; Kerr & Stattin, 2003). This child effects model would suggest that father involvement is predicted by children's externalizing behaviors rather than father involvement being a predictor of children's behavior (Hawkins, Amato, & King, 2007). This line of research represents a promising avenue for future research.

The Influence of Other Socio-Demographic Factors. While not integral to the paper's main focus, we found a number of additional socio-demographic characteristics to be significant predictors of child well-being above and beyond the measures of multiple partner fertility and the mediators we considered, suggesting that children's externalizing behaviors and physical health may be accounted for by differences in parents' individual characteristics, socio-economic status,

and children's own characteristics. For example, we found that a more difficult child temperament was association with greater externalizing behaviors when children were 3 years old. This finding supports the idea that early developmental conditions may set a developmental trajectory for later problem behaviors during infancy and early childhood (Crockenberg & Leerkes, 2005). We also found that children whose parents were married exhibited fewer externalizing behaviors. Marriage is seen here to be protective of children in terms of reducing the likelihood of problem behaviors, supporting previous research on differences in socio-emotional and health outcomes between children born to married versus unmarried parents (Acs & Nelson, 2002).

We also found a number of significant associations between socio-demographic factors and children's physical health. For example, Hispanic fathers were more likely than white fathers to have children with poor physical health, possibly reflecting lower access to medical care among racial minorities (Miller, 2000). Family context was also found to influence children's health. Parents' relationship conflict and a greater number of children in the household were associated with poor child health. Prior research shows that relationship conflict is associated with a range of poor child outcomes, including health (Troxel & Matthews, 2004). Two indicators of fathers' socioeconomic status - higher levels of education and household income - were positively associated with children's physical health. This finding supports previous studies that show that more highly educated and higher earning fathers have greater knowledge of their children's health, and greater financial resources to care for their children (Blaylock et al., 1999; Dearing et al., 2006).

Limitations of Current Study. While the findings of this study are promising, there are some caveats that should be noted. First, the Fragile Families survey does not include a

complete fertility history for either mothers or fathers, so we use a combination of indicators of parents' childbearing (both fathers and mothers reports) across the various waves of the survey to determine multiple partner fertility. While prior research with the Fragile Families dataset indicates that fathers and mothers agree on whether the father has experienced multiple partner fertility in more than 90% of cases (Carlson et al., 2008), our measure of multiple partner fertility may still underestimate actual rates. Furthermore, because our mediators and outcomes are measured at the same wave of the survey (36 months), our findings can only be considered relational, not causal. It is possible that fathers increase their involvement and/or become more stressed when their children are in poorer health. Although previous work has theorized that children have effects on parents and their parenting behaviors (Belsky, 1984), our path models only examine uni-directional effects from the father to the child. Reciprocal associations are not considered. However, our findings are strengthened by the fact that children's outcomes are reported by the mother, not the father, and we thus avoid issues of common reporter bias. Additionally, one should not ignore the potentially selective nature of this sample of fathers. To account for this, we ran selection models to minimize bias due to attrition. We also carefully examined the differences between our analytic sample of resident fathers and those fathers excluded from the final sample to better understand the unobserved and observed factors that differentiate the two groups of men. Another limitation is that our sample is not representative of all men or fathers. This sample is one of births, and as such cannot be generalized to all men but rather to fathers of young children of a recent urban birth cohort. We also did not focus on non-resident fathers. We restricted our analyses to resident fathers only because the patterns and predictors of multiple partner fertility as well as father involvement are structurally different for resident fathers versus non-resident fathers. This may have created some bias in our findings as

resident fathers may be less likely to experience multiple partner fertility and the negative consequences of multiple partner fertility may be greatest for children that do not live with their fathers. This represents a promising avenue for future research. Moreover, the Fragile Families data do not measure externalizing behaviors prior to the 36-month wave of the survey, and so we cannot include this as a control in our analyses; however, we do control for child temperament at 12 months as a proxy. We were also unable to explicitly measure the process of resource dilution which reflects decreases in fathers' financial and social investments in their children resulting from larger family sizes that extend across various households and limit children's chances for successes. We expect that this resource dilution drives many of the intervening pathways between fathers' multiple fathers' and child well-being, but were unable to adequately capture these mechanisms with the available data. This, however, represents a promising avenue for future research. We also acknowledge that the negative consequences of fathers' multiple partner fertility may be long-term and may not be fully realized when children are only three years old. Also, evidence of externalizing behaviors or poor physical health at 36-months may not be indicative of long-term problem behaviors. Future research should continue to monitor and assess children's socio-emotional and physical well-being to better understand the trajectories of children whose fathers have children with multiple partners. Also, although previous work suggests that the addition of new children to a family unit is likely to affect children's well-being and development (Baydar, Greek, & Brooks-Gunn, 1997; Baydar, Hyle, & Brooks-Gunn, 1997; Teti, Sakin, Kucera, Corns, & Eiden, 1996), the Fragile Families data does not collect information on the well-being of subsequent or prior children fathered, and so our analyses of outcomes are focused on focal children with whom fathers lived at birth. Finally, it is possible that there are additional pathways through which multiple partner fertility may work to

influence children's outcomes that we have not considered.

Contributions of Present Study. While this study has a number of limitations, there are also a number of strengths. Using data from a large sample of urban men and their young children, we examined how men's multiple partner fertility is associated with young children's behavior problems and physical health. To the best of our knowledge, this is the first study to examine the effects of multiple partner fertility on young children's development. A small body of previous research has examined associations between multiple partner fertility and father involvement and co-parenting but generally has not extended these findings to examine children's well-being. Another contribution of the present study is that we use information from both fathers and mothers (as opposed to only mothers). The findings from this study should lay the groundwork for future work focusing on the implications of multiple partner fertility on a broader range of child outcomes than we have considered in the present analyses.

Policy and Practice Implications. Our study provides evidence that men's multiple partner fertility is important for understanding later child well-being. Multiple partner fertility is often the result of an unplanned pregnancy or relationship turbulence characterized by multiple union transitions. Consequently, programs that address male fertility should educate men, as well as women, starting at a young age, about the potential negative ramifications of unplanned pregnancies and union instability as a means of avoiding multiple partner fertility. Such programs should target those most at risk of fathering a large number of children with multiple partners based on the findings from prior research – especially males with low education levels and racial/ethnic minorities (Carlson & Furstenberg, 2006; Guzzo & Furstenberg, 2007). At the same time, such programs should be sensitive to cultural issues and differences across racial/ethnic groups that may encourage extended families across different households. These

results also suggest that there is a need for greater attention to the challenges and difficulties that nontraditional families face. Mental health and social service agencies which have generally focused on intervention when problems reach a critical stage need to devote resources to prevention for those families whose children are at greater risk of social and emotional problems.

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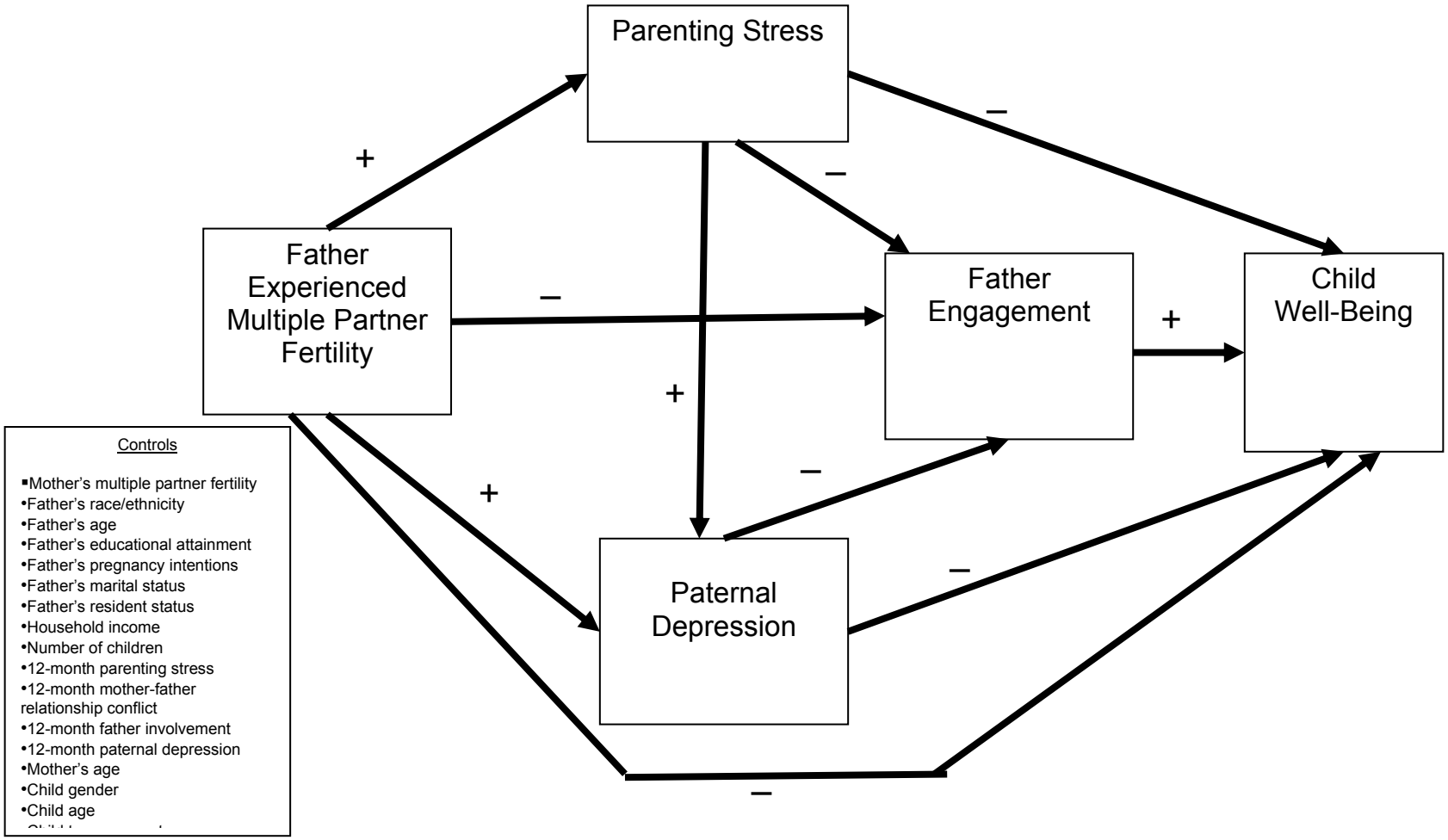
Figure 1: Conceptual Framework of Hypothesized Associations between Multiple Partner Fertility for Resident Fathers and Child Well-Being



Note: The figure shows that father's multiple partner fertility may be directly associated with child well-being, or may be indirectly associated with child well-being through parental stress in parenting, paternal depression, and father engagement.

Table 1. Descriptive Statistics for Variables Used in the Analysis, Fragile Families Baseline, 12 Month, and 36 Month Surveys

	Mean/Percentage	SD	Range	α
Dependent Variables				
Child Health (36 months)	3.5	0.8	0 - 4	-
Child Externalizing Behaviors (CBCL) (36 months)	13.1	7.6	0 - 41	0.86
Independent Variables				
Fathers' Multiple Partner Fertility				
Multiple Partner Fertility	33.2%	-	-	-
No Multiple Partner Fertility	66.9%	-	-	-
Mediators				
Father Involvement (36 months)	53.7	14.0	0 - 91	0.84
Parenting Stress (36 months)	4.4	2.0	0 - 12	0.82
Paternal Depression (36 months)				
Composite International Diagnostic Interview - Short Form (CIDI-SF)	2.54	0.5	0-7	0.87
Controls				
Fathers' Individual Characteristics				
Race/Ethnicity (Baseline)				
Non-Hispanic White	44.9%	-	-	-
Non-Hispanic Black	28.8%	-	-	-
Hispanic	22.7%	-	-	-
Other Race/Ethnicity	3.6%	-	-	-
Age (12 months)	29.8	6.3	17 - 66	-
Educational Attainment (12 months)				
High School/GED or Less Than High School	64.6%	-	-	-
Some College or More	35.4%	-	-	-
Pregnancy Intentions (Baseline)				
Wanted Pregnancy	94.8%	-	-	-
Did Not Want Pregnancy	5.2%	-	-	-
Marital Status (12 months)				
Married	43.5%			
Unmarried	56.5%			
Resident Status (36 months)				
Resident	75.5%			
Nonresident	24.5%			
Household Income (12 months)	43,788.54	43,057.91	0 - 999,999	-
Number of Children (12 months)	1.5	1.0	1 - 12	-
Parenting Stress (12 months)	4.2	2.1	0 - 12	0.58
Father-Mother Relationship Conflict (12 months)	1.8	0.6	0 - 4	-
Father Involvement (12 months)	35.2	9.4	0 - 56	0.80
Paternal Depression (12 months)	1.86	0.5	0-7	0.81
Mothers' Individual Characteristics				
Age, in Years (12 months)	27.0	5.8	14 - 49	-
Multiple Partner Fertility (12 months)				
Yes	34.7%	-	-	-
No	65.3%	-	-	-
Child Characteristics				
Child Gender (Baseline)				
Male	52.4%	-	-	-
Female	47.6%	-	-	-
Child Temperament (12 months)	2.8	1.0	1 - 5	0.61
Child Age, in Months (36 months)	36.5	2.4	21 - 48	-

Table 2. Correlations Among Variables Used in the Analysis, Fragile Families Baseline, 12 Month and 36 Month Surveys

	1	2	3	4	5	6
Independent Variables						
1. Fathers' Multiple Partner Fertility	--					
Mediators (36 months)						
2. Father Involvement	-0.16 ***	--				
3. Parenting Stress	0.02	-0.12 ***	--			
4. Paternal Depression	0.06 +	-0.05 *	0.25 ***	--		
Dependent Variables (36 months)						
5. Child Physical Health	-0.05	0.07 +	-0.04	0.00	--	
6. Child Externalizing Behaviors (CBCL)	0.10 *	-0.04	0.04	0.07 +	-0.17 ***	--

+p<0.10. *p < .05. **p < .01. ***p < .001.

Table 3. Standardized coefficients for the analysis describing relationships between fathers' multiple partner fertility and children's externalizing behaviors at 36 months (N = 1,525)

	Child Externalizing Behaviors			Child Externalizing Behaviors			Child Externalizing Behaviors			Child Externalizing Behaviors		
Variable	Unstandardized Beta	SE	Standardized Beta	Unstandardized Beta	SE	Standardized Beta	Unstandardized Beta	SE	Standardized Beta	Unstandardized Beta	SE	Standardized Beta
Primary Predictor												
Fathers' Multiple Partner Fertility												
Experienced Multiple Partner Fertility	0.21	0.36	0.18*	0.19	0.35	0.12**	0.16	0.35	0.07*	0.14	0.35	0.05**
(Did Not Experience Multiple Partner Fertility)												
Mediators												
Paternal Depression (36 months)	___	___	___	0.53	0.12	0.13***	0.53	0.13	0.44***	0.55	0.13	0.56***
Parenting Stress (36 months)	___	___	___	___	___	___	0.10	0.12	0.28	0.13	0.12	0.16
Father Involvement (36 months)	___	___	___	___	___	___	___	___	___	-0.04	0.02	0.07
Mill's Ratio (lambda)	1.77	2.23		0.99	2.32		3.25	2.21		2.54	2.67	
R^2		0.44			0.69			0.71			0.73	
F for change in R^2		162.5*			167.6**			175.2*			189.1*	

Note: All models control for mothers' multiple partner fertility, fathers' race/ethnicity, fathers' age, fathers' educational attainment, fathers' pregnancy intentions, fathers' marital status, fathers' resident status, household income, number of children, 12-month parenting stress, 12-month mother-father relationship conflict, 12-month father involvement, 12-month depression, mothers' age, child gender, child age and child temperament.

+p<0.10. *p < .05. **p < .01. ***p < .001.

Table 4. Sobel Test Statistics

Child Outcomes	Sobel Test Statistic	P-Value
Externalizing Behaviors		
Multiple Partner Fertility -> Paternal Depression -> Externalizing Behaviors	2.31	0.01*
Multiple Partner Fertility -> Parenting Stress ->Externalizing Behaviors	1.93	0.89
Multiple Partner Fertility ->Father Involvement -> Externalizing Behaviors	-2.33	0.99
Physical Health		
Multiple Partner Fertility -> Paternal Depression -> Physical Health	-1.24	0.87
Multiple Partner Fertility -> Parenting Stress -> Physical Health	-2.22	0.99
Multiple Partner Fertility ->Father Involvement -> Physical Health	-1.47	0.03*

+p<0.10. *p < .05. **p < .01. ***p < .001.

Table 5. Standardized coefficients for the path analysis describing relationships between fathers' multiple partner fertility and children's health status at 36 months (N = 2,177)

	Child Physical Health			Child Physical Health			Child Physical Health			Child Physical Health		
Variable	Unstandardized Beta	SE	Standardized Beta	Unstandardized Beta	SE	Standardized Beta	Unstandardized Beta	SE	Standardized Beta	Unstandardized Beta	SE	Standardized Beta
Primary Predictor												
Fathers' Multiple Partner Fertility												
Experienced Multiple Partner Fertility	-0.18	0.02	-0.03	-0.12	0.16	-0.03	-0.09	0.01	0.01	-0.07	0.11	-0.07
(Did Not Experience Multiple Partner Fertility)												
Mediators												
Paternal Depression (36 months)	___	___	___	-0.10	0.01	-0.01	-0.09	0.01	-0.01	-0.06	0.01	-0.01
Parenting Stress (36 months)	___	___	___	___	___	___	-1.02	0.01	-0.06	-0.02	0.01	-0.05
Father Involvement(36 months)	___	___	___	___	___	___	___	___	___	0.01	0.01	0.05*
Mill's Ratio (lambda)	1.78	2.23		0.99	2.12		3.25	2.21		2.24	1.67	
R^2		0.44			0.53			0.69			0.73	
F for change in R^2		172.5*			177.6**			185.2*			189.1*	

Note: All models control for mother's multiple partner fertility, fathers' race/ethnicity, fathers' age, fathers' educational attainment, fathers' pregnancy intentions, fathers' marital status, fathers' resident status, household income, number of children, 12-month parenting stress, 12-month mother-father relationship conflict, 12-month father involvement, 12-month depression, mothers' age, child gender, child age and child temperament.

+p<0.10. *p < .05. **p < .01. ***p < .001.