

Pregnancy Intentions during the Transition to Parenthood and Links to Co-parenting\*

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**ABSTRACT**

Objective: The objectives of this study were to identify associations and pathways through which first time resident fathers' pregnancy intentions (reported retrospectively) influence later co-parenting and to examine whether these associations vary based on the child's gender.

Design: Using the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B) 9- and 24-month surveys, we examined a sample of first time resident biological fathers (n = 1,287). Analyses were conducted in Mplus using Structural Equation Modeling.

Results: Our analyses show that having a mistimed or unwanted pregnancy is associated with less mother-father relationship happiness which in turn is associated with co-parental communication, conflict, support, cooperation, and decision making. There was also a direct negative association between having an unwanted pregnancy and co-parental cooperation. For first-time fathers of daughters, having a mistimed or unwanted pregnancy was indirectly associated with lower co-parental communication.

Conclusions: Pregnancy intentions are associated with later co-parenting behavior for first-time fathers of infants, and the mother-father relationship is important for understanding parents' co-parenting relationship.

## Pregnancy Intentions during the Transition to Parenthood and Links to Co-parenting

**INTRODUCTION**

*Pregnancy intentions* refer to men's feelings about the pregnancies of their partners. These pregnancies can either be intended (planned at the time of conception), mistimed (not wanted at the time of conception, but wanted eventually), or unwanted (not wanted at the time of conception or ever in the future). Men's pregnancy intentions are important to examine because the willingness of fathers to be involved with their children and parent in positive ways may be associated with whether the pregnancy was intended at conception (Bronte-Tinkew, Ryan, Carrano & Moore, 2007; Brown & Eisenberg, 1995).

Over the last several decades, researchers and policy makers have devoted considerable attention to women's pregnancy intentions (Pulley, Klerman, Tang, et al., 2002), in large part due to concerns about declining (and later increasing) and changing fertility patterns and the need to predict population trends (Altfeld, Handler, & Burton, 1997). However, there is a clear deficit in the existing research on pregnancy intentions, which has primarily focused on mothers and ignored the role of fathers. While studies of unintended births have traditionally concentrated on women's intentions, a focus on men's attitudes is important given that recent research demonstrates that fathers' pregnancy intentions have an independent influence beyond that of mothers' intentions (Korenman, Kaestner & Joyce, 2002). Men's pregnancy intentions may have implications not only for their levels of post-birth involvement with children (Bronte-Tinkew, Ryan, Carrano, et al., 2007), but also for their co-parenting behaviors with partners. If a pregnancy is unplanned, it is more likely to result in a stressful transition to parenthood (Cox, Paley, Burchinal, et al., 1999), and after birth is likely to influence the quality of co-parenting between parents. Couples who have an unplanned pregnancy may experience a lower level of joint "control" over the impending life change and may be less likely to engage in couple-level preparations, including the development of a supportive co-parenting relationship that involves planning, discussing, and negotiating expectations and roles (Feinberg, 2002).

Available research on fathers' pregnancy intentions is scant, however, and suffers from several limitations. First, most research on fathers relies upon mother reports of fathers' intendedness as a proxy for men's attitudes. Second, few studies that examine pregnancy intentions have been conducted with large, representative, and diverse samples of fathers (Cherlin & Griffith, 1998), and most have focused on the consequences of mistimed births to *women's* lives. Third, few studies consider how *men's* pregnancy intentions may be a predictor of subsequent parenting, with one exception (Bronte-Tinkew, Ryan, Carrano & Moore, 2007), although there is a history of research on the transition to parenthood that identifies such a transition as a crisis for couples (both mothers and fathers) and a risk factor for relationship distress and declines in the quality of the couple relationship (Cox, Paley, Burchinal & Payne, 1999).

Given the shortcomings of existing research, using retrospective accounts of men's pregnancy intentions from a sample of first-time resident fathers of infants in the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B) 9- and 24-month study, we pose two research questions: (1) *What are the associations and pathways through which first time resident fathers' pregnancy intentions influence their co-parenting behaviors after the birth of a child?*; and (2) *Do the associations and pathways vary according to the birth of a son versus a daughter?* Analyses focus on resident first-time fathers of infants because the patterns and predictors of pregnancy intentions as well as co-parenting are structurally different for resident first-time fathers versus non-resident fathers and versus men that father subsequent children.

An understanding of the implications of men's pregnancy intentions for their co-parenting relationships with partners is important for a number of reasons. First, the transition to fatherhood is marked with great uncertainty as well as anticipation, and it represents an important opportunity to draw men more actively into the parenting role (Woodsworth, Belsky & Crnic, 1996). For most first-time parents, the transition to parenthood represents at the very least a difficult adjustment and at worst a "crisis situation" for which they find themselves unprepared (Henderson & Brouse, 1991). During the

transition to fatherhood, men must reorganize their personal identity and reestablish themselves in their existing roles as well as in their new role as father (Strauss & Goldberg, 1999). Some men may be able to successfully reorganize their personal identity and establish their identity as a father, but others may regress or have negative transitions, marked by jealousy and increased stress, into the parenting role (Strauss & Goldberg, 1999). An unplanned pregnancy may herald a negative transition into fatherhood, which may have negative repercussions for long-term parenting and co-parenting for fathers.

Second, the changes that occur during the transition to parenthood affect the dynamics of the mother-father relationship, and represent an opportunity for the co-parenting relationship between partners to undergo changes (Feinberg, 2002). During the transition to fatherhood, pregnancy intentions may be associated with a father's identity perceptions and his bond to his child, both of which begin to be established during pregnancy and have important consequences for men's co-parenting behavior post-birth (Strauss & Goldberg, 1999). One factor that may influence men's readiness to establish an active parenting and co-parenting role after the transition to a birth is whether or not the pregnancy was planned. Couples that plan the child may have a greater sense of control over the transition to parenthood, and may be more willing to engage in preparations, including developing co-parenting strategies (Feinberg, 2002).

Third, men's pregnancy intentions are likely to influence the *type* and *quality* of the co-parenting relationship that they have with their partners if the birth of a child is perceived as planned or unplanned. Shifts in the couple dyad during the postpartum transition period may include changes in the household division of labor, extrafamilial roles, and time for the couple to be together (Cowan & Cowan, 1995), and in the context of an unplanned birth may have an impact on the perceptions of shared roles as parents. An exploration of the pathways through which men's pregnancy intentions may influence their co-parenting relationship following the birth of a first child is therefore a timely and well-warranted research issue since little consideration has been given to the consequences of the timing of parenthood for men.

*Theoretical Framework*

Our analyses will be informed by *family systems theory* (Minuchin, 1974). The family systems framework posits a hierarchy of subsystems, with the couple dyad conceptualized as the prevailing subsystem in the family system (Cox & Paley, 2003, McHale, Khazan, Erera, et al., 2002). This framework posits that the quality of the couple relationship is associated with how mothers and fathers coordinate their efforts to deal with issues related to childrearing (Lindsey, Caldera & Colwell, 2005). Specifically, co-parenting is posited to be a triadic interaction that involves the intersection of the couple dyad and the parent-child dyads within the family subsystems.

Influencing the ease of making the transition to parenthood may be whether a pregnancy was planned or unplanned. What is commonly thought to be a normative transition for families may become a non-normative experience if fathers did not intend to have a child and are unprepared for the changes that occur during this unique family transition (Cowan and Hetherington, 1991). The birth of a first child and the need for a couple to reorganize roles for the caring of an infant is likely to influence the couple relationship as well as the co-parenting relationship. First-time fathers who have no experience with infants may be even less sure of their behavior and may find parenting more stressful and difficult than fathers who have had previous experience with young children (Henderson & Brouse, 1991). Unlike women, who are often socialized for their roles as mothers, men often lack the cultural and institutional support necessary to prepare themselves for fatherhood (Henderson & Brouse, 1991), which may make it more difficult for first-time fathers to adjust to new relationships and responsibilities with a partner. In the context of an unintended birth, these changes may be even more stressful. This framework of interdependent family subsystems provides the theoretical bases for the present analysis that examines the pathways through which first-time resident men's pregnancy intentions are likely to influence their co-parenting after the birth of a child.

*Direct Associations between Male Pregnancy Intentions and Co-parenting*

*Co-parenting* reflects the interaction of two individuals who are responsible for a child in a way that promotes the child's well-being and positive development (McHale, Kuersten-Hogan & Rao, 2004, Van Egeren & Hawkins, 2004). Co-parenting reflects a dyadic process that takes place between parents, rather than between parents and children, and involves the extent to which individuals support one another's parenting efforts, share decisions regarding raising and caring for a child, and communicate about responsibilities and issues having to do with a child's daily life (McHale, Kuersten-Hogan & Rao, 2004, Van Egeren & Hawkins, 2004). The transition to parenthood is marked by rapid change, fluidity, and fluctuation (Feinberg, 2002, Van Egeren, 2004) as parents attempt to establish a division of parenting responsibilities, resolve differences in child-rearing philosophies, and adapt to their perceptions of the other's parenting and co-parenting skills (Van Egeren, 2003, Van Egeren, 2004). First-time parents must also navigate and reorganize their overall relationship as they establish their co-parenting relationship (Cox & Paley, 1997, Feinberg, 2002). The potential link between the intentionality of pregnancy and co-parenting lies in the issue that a planned pregnancy may indicate a readiness (in terms of emotions, finances, and lifestyle) to co-parent (Feinberg, 2002). Although there has been an increase in the amount and quality of co-parenting research in recent years, no existing studies directly link male's pregnancy intentions to their co-parenting behaviors. The majority of research on pregnancy intentions is limited to small, unrepresentative samples (Cox, Paley, Burchinal & Payne, 1999, Johnson & Williams, 2005), draws from the mother's perspective (Cherlin & Griffith, 1998), and does not focus on co-parenting as a key outcome. One study suggests that parents who plan to conceive may be more willing and better prepared to co-parent successfully, but did not test this hypothesis directly (Van Egeren, 2003).

While mothers are generally more attuned to the impending birth than fathers for biological reasons (Grossman, Eichler & Winickoff, 1980), a father's pregnancy intentions or lack of readiness may have consequences for the quality of the co-parental relationship, including mutual support, the sharing of responsibility, agreement about roles and responsibilities, the resolution of childrearing

differences, and commitment to a shared management of family interactions (Feinberg, 2002). An unwanted or mistimed pregnancy may be a proxy for a lack of readiness with negative consequences for men's sense of control in setting the pace for the preparation to parenthood and co-parenthood (Feinberg, 2002). As such, an unwanted or mistimed pregnancy may have negative consequences for the quality of the co-parental relationship.

*Hypothesis 1:* On the basis of prior research, we hypothesize that there will be a direct effect of fathers' pregnancy intentions on the quality of the co-parenting relationship. Specifically, there will be negative associations between an unwanted or mistimed birth and co-parental support, co-parental communication, and shared decision making. There will be positive associations between an unwanted or mistimed birth and co-parental conflict.

*Indirect Associations between Pregnancy Intentions and Co-parenting*

It is likely that there are indirect pathways through which pregnancy intentions may influence co-parenting. We focus on two pathways as potential mediators of the association between male pregnancy intentions and co-parenting behaviors: the father-mother relationship and men's prenatal behaviors.

*Mediator 1: The Father-Mother Relationship.* The father-mother relationship represents a dyadic relationship within the family that is likely to influence co-parenting processes. The father-mother relationship has been found to decline in quality following the birth of a child in general (Crohan, 1996, Henderson & Brouse, 1991), and this decline may be especially marked if one or both parents are facing an unintended pregnancy and feel unprepared for parenthood. Indeed, some early studies suggest a link between pregnancy intentions and the quality of the couple relationship. For example, among married couples, some research suggests that men and women with planned pregnancies are slightly more satisfied with their couple relationships (Cox, Paley, Burchinal & Payne, 1999). Lower relationship quality has also been found to be common among parents with uncertainty and partner conflict in becoming pregnant (Snowden, Schott, Awalt, et al., 1988). Most research on pregnancy intentions and



parents' relationship quality, however, focuses on mothers' intentions and mothers' reports of relationship quality. A result of this limitation is that the relationship between men's pregnancy intentions and their assessment of the father-mother relationship is less clear and requires further study.

The quality of the mother-father relationship may also affect the co-parental relationship (Florsheim, Moore, Zollinger, et al., 1999, Floyd, Gilliom & Costigan, 1998, Lindahl & Malik, 1999a), and some recent research suggest that this relationship may be reciprocal (Carlson, McLanahan, & Brooks-Gunn, 2007). For example, couples who are satisfied in their relationships are most likely to exhibit positive cooperation and communication when interacting in the presence of their child(ren) (Cowan & Cowan, 1987). Moreover, when spouses exhibit regular support and mutual respect for each other in certain domains, they tend to extend that support and respect into their shared childrearing (Erel & Burman, 1995, Lindahl & Malik, 1999b). Some research also suggests that among married fathers, marital quality has been found to be positively related to positive co-parenting (Belsky, 1984, Talbot & McHale, 2004, Van Egeren, 2004).

*Hypothesis 2:* On the basis of prior research we hypothesize that the father-mother relationship will mediate the association between male pregnancy intentions and co-parenting behaviors. First-time unwanted or mistimed births for fathers will be associated with poorer relationship quality, which in turn will be associated with lower co-parental support, communication, and shared decision making, and with greater co-parental conflict.

*Mediator 2: Male Prenatal Behaviors.* Men's prenatal behaviors are likely a second mechanism through which pregnancy intentions may work indirectly to influence co-parenting. Prenatal behaviors are defined as men's activities with their partners during pregnancy (e.g., discussed the pregnancy, visited the doctor with partner for prenatal care, attended childbirth classes), and activities with the child during and around the time of birth (i.e., present at child's birth, visited the child in the hospital, held the baby, and established paternity). Prenatal behaviors on the part of fathers may be indicative of their beliefs and perceptions of the father role, and their commitment to parenting (Mann, 1995). Greater

involvement in prenatal activities may also reflect men's feelings about the intendedness of the pregnancy, and a commitment to the parenting role. Empirical work on the link between male prenatal behaviors and post-birth fathering behaviors, including co-parenting, is sparse, inconclusive, and narrowly defines men's prenatal behaviors as being present at birth (Abma & Mott, 1994). Some research suggests that parents' prenatal negative *outlooks* and *expectancies* are negatively associated with co-parenting, but did not examine specific prenatal *behaviors* (McHale & Rotman, 2007).

Men's prenatal behaviors are also likely to be related to the quality of the father-mother relationship. Men may become more involved with a pregnancy if they are happy in their relationship. An alternative explanation is that men's willingness to participate in prenatal activities makes their partners happy, and helps to improve relationship quality (Coiro & Emery, 1998). Research on post-birth father involvement suggests that men are more involved when parents share a stable and happy relationship. The same association is likely to exist for men's prenatal behaviors.

*Hypothesis 3:* We hypothesize that male prenatal behaviors will mediate the association between pregnancy intentions and co-parenting. Fathers reporting a first-time pregnancy that is unwanted or mistimed will engage in fewer prenatal behaviors, which in turn will be associated with less positive co-parenting after birth.

#### *Differences According to the Birth of a Son versus a Daughter*

Some studies suggest that there may be differences in parenting for fathers when they have sons, versus daughters (Bronte-Tinkew, Moore, Capps, et al., 2006, Bronte-Tinkew, Moore & Carrano, 2006, Cox, Paley, Burchinal & Payne, 1999). This may be the result of two factors: (a) fathers may identify more with the same-sex child; and (b) there may be greater external pressure for fathers to serve as a role model for boys (Russell & Saebel, 1997). Some other studies document no gender differences in parenting for fathers of very young children (Sidle-Fuligni & Brooks-Gunn, 2004). Differences in involvement by child gender are not always consistent and may vary by the age of the child and the type of involvement (Cooksey & Craig, 1998). Evidence on the associations between child gender and co-

parenting are mixed, with some studies finding no associations (Stright & Bales, 2003) and other studies finding that maritally distressed parents of boys are more likely to engage in hostile co-parenting and maritally distressed parents of girls are more likely to have less involved fathers (McHale, 1995).

Furthermore, studies suggest that marital interactions in the postpartum period are more negative when parents have an unplanned daughter than when they have an unplanned son or a planned child (Cox, Paley, Burchinal & Payne, 1999). Consequently, it is unclear whether fathers with sons are more likely to positively co-parent than are fathers with a daughter. We examine whether there are differences in associations between pregnancy intentions and co-parenting for first-time fathers of sons versus first-time fathers of daughters.

*Hypothesis 4:* On the basis of prior research, we hypothesize that the association between fathers' pregnancy intentions and co-parenting will be stronger for first-time fathers of sons versus first-time fathers of daughters.

#### *Additional Socio-demographic Variables Associated with Pregnancy Intentions and Co-Parenting*

Although male pregnancy intentions are likely to influence co-parenting behaviors, additional father characteristics, mother characteristics, household characteristics, and child characteristics are also likely influences on both pregnancy intentions and co-parenting. To better isolate the relationship between intentions and co-parenting, we account for these potentially confounding factors.

*Father Characteristics.* We include age as a control variable because older individuals report fewer mistimed or unwanted pregnancies (Pulley, Klerman, Tang & Baker, 2002). Father's age has also been found to be positively associated with co-parenting, although findings are mixed and focus mainly on nonresident fathers (Arendell, 1996, Florsheim & Smith, 2005, Gable, Belsky & Crnic, 1995). In addition, father's race/ethnicity is included because some studies suggest differences in co-parenting by race, with lower levels of co-parenting conflict among parents of Hispanic children (Amato & Rezac, 1994). Studies also suggest racial differences in the likelihood of an unintended, unwanted, or mistimed pregnancy: non-Hispanic White individuals are less likely than racial minorities to report unintended

pregnancies (Zabin, Huggins, Emerson, et al., 2000). Additionally, we include paternal education and employment status as additional socio-demographic controls. Prior research suggests that higher paternal education is associated with better co-parenting relationships (Arditti & Kelly, 1994) and less educated individuals tend to report more unintended pregnancies (Joyce, Kaestner & Korenman, 2000). We include father's employment status because studies suggest that employed men spend less time with their children and feel less strongly about childrearing practices (Easterbrooks & Goldberg, 1985). As has been found for women, employment may also be associated with lower rates of unintended pregnancy among men (Hellerstedt, Pirie, Lando, et al., 1998).

We also include measures of father's psychological wellbeing because some prior research suggests that depressed males tend to have less positive co-parenting relationships (Bronte-Tinkew, Moore, Matthews, et al., 2007). Additionally, research suggests that men facing unintended pregnancies have poorer mental health, although this association may be reciprocal (Bouchard, 2005). We also include men's perceptions of the father role because such perceptions may influence how men feel about their partner's pregnancy and their commitment to childrearing. Previous research suggests that men who are less committed to conventional definitions of parenting and gender roles and men who have more favorable attitudes towards the paternal role are more involved in parenting and other domestic activities (Arendell, 1996, McBride & Rane, 1997). We also include a measure of marital status because, compared to unmarried fathers, married fathers have been found to be more positively involved with children (Hofferth & Anderson, 2003), which may indicate a more positive co-parental relationship as well, and because married individuals are more likely to report that a pregnancy was intended (Zabin, Huggins, Emerson & Cullins, 2000).

*Mother Characteristics.* Mother characteristics are also accounted for in the analyses. We include a measure of mothers' pregnancy intentions because the effect of pregnancy intentions on outcomes such as co-parenting may differ for mothers and fathers (Korenman, Kaestner & Joyce, 2002). Mother and fathers' pregnancy intentions may also be positively correlated, so that the effect of fathers'

pregnancy intentions on his parenting behaviors may be partly due to mothers' intentions. Controlling for mothers' pregnancy intentions allows us to estimate the unique effect of father's intentions on co-parenting.

Additionally, research suggests that having an unintended pregnancy may be associated with less parental support, lower involvement, and poorer overall parent-child relationships (Axinn, Barber & Thornton, 1998), and similar associations may exist between unintended pregnancy and co-parenting. We also account for mother's age because age has been identified as a factor that influences female pregnancy intentions, with younger women reporting higher levels of pregnancy mistiming or unwantedness (Abma & Mott, 1994, Rubin & East, 1999). However, the relationship between maternal age and co-parenting behavior is unclear: although some research shows that older mothers engage in less supportive co-parenting, other studies suggest the opposite (Gable, Belsky & Crnic, 1995, Van Egeren, 2003). Research has also shown that fathers are more involved with their children when mothers are older (Pleck, 1997). We include mother's educational attainment because this has been found to be a predictor of pregnancy intendedness: women reporting intended pregnancies tend to be more highly educated (Joyce, Kaestner & Korenman, 2000, Kost & Forrest, 1995, Orr & Miller, 1997, Williams, 1991), and higher maternal education has been associated with more positive co-parenting behavior (Stright & Bales, 2003). We include a measure of maternal employment because mothers who are employed have been found to engage in more positive co-parenting (Arditti & Kelly, 1994, Lindsey, Caldera & Colwell, 2005, Maccoby, Depner & Mnookin, 1990) and to report lower levels of pregnancy unwantedness (Hellerstedt, Pirie, Lando, Curry & al., 1998).

*Household Characteristics.* We include measures of household characteristics such as poverty status because research suggests that more positive co-parenting has been found to be more common among couples with higher SES than among couples with lower SES (Arendell, 1996). Additionally, studies have found that individuals living in poverty are more likely to report having an unintended pregnancy (Henshaw, 1998, Kost & Forrest, 1995, Rubin & East, 1999, Williams, 1991), and couples

with lower incomes in general are more likely to report an unplanned pregnancy (Bouchard, 2005). We also include the number of children in the household because prior research suggests that having fewer children is associated with better co-parental relationships (Arditti & Kelly, 1994, Maccoby, Depner & Mnookin, 1990). A greater number of shared children implies higher levels of interdependence between parents (Arditti & Kelly, 1994), increasing the likelihood of conflict (Maccoby, Depner & Mnookin, 1990), which may highlight differences in parents' childrearing strategies and may lead to parents being less supportive of and more dissatisfied with their partner's co-parenting behaviors (Arditti & Kelly, 1994). In addition, at higher parities, couples are less likely to want additional children (Baydar, 1995).

*Child Characteristics.* We include controls for the focal child's age, temperament, and gender, since these factors are likely to influence co-parenting. Some studies indicate that more positive co-parenting exists in families with younger children as opposed to older children (Maccoby, Depner & Mnookin, 1990, Margolin, Gordis & John, 2001). Existing empirical evidence suggests that child temperament has a profound impact on parenting behavior (Lindsey, Caldera & Colwell, 2005). Parents may be less willing to cooperate with each other to rear a child that is irritable, fussy, and demanding, or engage in less positive co-parenting to work together to rear a child with a difficult temperament (Van Egeren, 2004). Parents whose children have a difficult temperament may also be more likely to report that the pregnancy was unwanted when retrospective intentions are considered (Axinn, Barber & Thornton, 1998).

## **DATA AND METHODS**

### *Data Source*

These analyses use data from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) 9- and 24-month resident father surveys. The ECLS-B is the first longitudinal study in the U.S. to track a nationally representative sample of children from infancy to the time they enter first grade to assess prospectively their experiences in a variety of domains. The study assesses children's transitions to non-parental care, early education programs, kindergarten, and first grade. The full sample consists of

roughly 10,688 children born in 2001 and includes over-samples of important populations such as Asians and American Indians, low- to moderately low-birth weight infants, and twins. Data collection is occurring in five waves: at approximately nine months after birth, 24 months, 48 months, entrance to kindergarten, and at first grade, although for these analyses, we focus on the 9 and 24-month survey waves. The primary modes of data collection are in-person interviews and direct child assessments that occur during home visits. Information on children is also drawn from birth certificates, interviews with the child's parents, child-care providers, teachers, and from assessments of children themselves (Nord, Edwards, Hilpert, et al., 2004).

The ECLS-B provides an opportunity to understand first-time resident fathers of young children because it includes surveys with fathers who live in the same household with the sampled children (resident fathers). Fathers are asked about their pregnancy intentions and behaviors, including the quality and quantity of their involvement with their partners. At each data collection point, resident fathers are asked to complete a 20-minute self-administered questionnaire. When a father does not complete an interview, crucial measures can be taken from the mother's questionnaire. At the completion of the 9-month resident father data collection, the ECLS-B had approximately 6,270 completed questionnaires from biological resident fathers of the children sampled at the base year collection.

*Sample for Analyses.* Our original sample included 2,100 first-time biological resident fathers who participated in the 9-month wave of the study. Of these cases, 1,532 fathers participated in both the 9 and 24-month wave of the study. Due to missing information on outcome variables across both waves, 245 fathers were excluded from our final analyses. This left us with a final analytic sample of 1,287 first-time biological resident fathers. The fathers excluded from the analytic sample were slightly less likely to report a wanted pregnancy (48.8%, compared to 50.7% in the analytic sample), slightly less likely to report a mistimed pregnancy (25.8%, compared to 30.0% in the analytic sample), and slightly more likely to report an unwanted pregnancy (25.4%, compared to 19.4% in the analytic

sample). Fathers excluded from the analytic sample reported slightly less co-parental support (90.9%, compared to 92.7% in the analytic sample) but similar levels of co-parenting conflict (1.3, compared to 1.1 in the analytic sample), similar levels of co-parenting communication (4.8, compared to 4.9 in the analytic sample), co-parenting cooperation (3.0 for fathers both included in and excluded from the sample), and shared decision making (6.3, compared to 6.4 in the sample).

The resident biological father was identified as the spouse or partner of the respondent to the parent interview and was the child's biological father in the majority of cases (98%). Other persons meeting the criteria to be included as resident fathers were stepfathers, adoptive, or foster fathers provided that they were identified by the primary respondent to the parent interview (Nord, Edwards, Hilpert, Branden, Andreassen, Elmore & al., 2004). Non-biological fathers were not included in our analyses because they were not asked questions about their pregnancy intentions and prenatal behaviors. We also excluded first-time non-resident fathers from our sample because such men are likely to co-parent differently than resident fathers. Table 1 provides further details of our analytic sample of first-time biological resident fathers.

Because the resident fathers who completed questionnaires are likely to be highly involved with their families, it should be noted that the ECLS-B may over-represent married resident fathers and fathers with strong attachments to partners and children and under-represent fathers who are less involved in their child's life at an early age. In addition, given that many of these fathers live in intact families, our sample may over-represent involved first-time resident fathers (Nord et al., 2004).

### *Analytic Strategy*

We first present descriptive statistics for our variables of interest. We then used structural equation modeling (SEM) for multivariate analyses, which allowed us to test direct and indirect effects of men's pregnancy intentions on co-parenting behaviors (Maruyama, 1998). Analyses were conducted using Mplus, which allows for the data to use sampling weights, adjusts for complex sampling designs, and includes procedures to handle missing data (Muthén & Muthén, 2006). We assessed the



acceptability of model fit using the Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Weighted Root Mean Square Residual (WRMR), and the Tucker Lewis Index (TLI). These goodness of fit indexes determine whether there is a relatively good fit between the hypothesized model and the observed data and calculate the rejection rates for mis-specified models - i.e., models with mis-specified factor covariance(s) and models with mis-specified factor loading(s) (Hu & Bentler, 1999). Cut-offs of less than 0.06 for the RMSEA, greater than 0.95 for the CFI, less than 0.90 for the WRMR, and greater than 0.95 for the TLI were used. Analyses were conducted using sample weights to correct for the different probabilities of sample selection resulting from factors such as over-sampling in the ECLS-B.

### *Measures*

#### *Dependent Variable*

*Co-Parenting.* We operationalize co-parenting using five measures from the 24-month survey:

*Co-parental communication* was measured through the father's assessment of whether, at the time of the 24-month survey, he and his spouse/partner talk about their child: 1) every day, 2) several times a week, 3) about once a week, 4) a few times a month, 5) several times a year, or 6) not at all (*range* = 0 – 5; *mean* = 4.9). Scores on this item were reverse coded, and higher scores indicate more frequent co-parental communication.

*Co-parental conflict* was based on the father's assessment of how frequently he and his spouse/partner argue about their child(ren) at the time of the 24-month survey. Fathers were asked if they 1) often, 2) sometimes, 3) hardly ever, or 4) never have such arguments (*range* = 0 – 3; *mean* = 1.1). Responses were reverse coded, and higher scores indicate higher co-parental conflict.

*Co-parental support* was measured using a dummy variable based on the father's assessment of how supportive his spouse/partner is of his being a father at the time of the 24-month survey. Fathers who reported that their spouse/partner is very supportive were coded as (1); and fathers who reported

that their spouse/partner is somewhat supportive, neither supportive nor unsupportive, or unsupportive are coded as (0).

*Co-parental cooperation* was assessed based on the father's assessment of how often he had looked after his child while his spouse/partner did other things in the month prior to the 24-month survey. Fathers were asked if they did so 1) every day or almost every day, 2) a few times a week, 3) a few times a month, 4) once or twice, or 5) never. Responses were reverse coded, and higher scores indicate more frequent co-parental cooperation ( $range = 0 - 4$ ;  $mean = 3.0$ ).

*Shared decision-making* was assessed using a four-item index assessing the father's influence in decisions about the child's discipline, nutrition, health care, and child care at the time of the 24-month survey. For each item, fathers who indicated that they have no influence were coded as (0), fathers who indicated having some influence were coded as (1), and fathers who indicated having a great deal of influence were coded as (2). Scores on these four items were added to create a single measure ( $range = 0 - 8$ ;  $mean = 6.4$ ;  $alpha = 0.78$ ). Higher scores on this index indicate greater shared decision making.

*Independent Variable (Primary Predictor)*

*Pregnancy Intentions.* This measure captures whether the pregnancy was 1) wanted at the time that it occurred, 2) wanted, but at some other time, or 3) unwanted. The ECLS-B directly asks biological fathers if they felt that the baby was wanted and, if so, whether the birth was properly timed or was mistimed. These measures are obtained directly from men and probe retrospectively reported when the baby is nine months old. This timing is important to note because previous research indicates that feelings can change over the course of a pregnancy (Brown & Eisenberg, 1995, Miller, 1974). Although these reports are retrospective, they represent the first of their kind in a database containing child development information.

*Mediator Variables (Pathways)*

*Prenatal Behaviors.* Fathers' prenatal behaviors, as recalled at the time of the 9-month survey (reported retrospectively), were measured using a six-item index. This index assessed whether the

father discussed with the mother how the pregnancy was going, saw a sonogram or ultrasound of the baby, listened to the baby's heartbeat, felt the baby move, attended childbirth classes or Lamaze classes with the child's mother, and bought things for the child. For these items, fathers indicated whether they did, or did not do these things (*yes/no*). An index was created by adding scores from each of the six items (*range* = 0 – 6; *mean* = 5.4; *alpha* = 0.60). Higher scores indicate more positive prenatal behaviors.

*Father-Mother Relationship.* We operationalize the mother-father relationship using a dichotomous variable measuring relationship happiness at nine months. Fathers who responded that their relationship was very happy were coded as (1), and fathers who responded that their relationship was fairly happy or not very happy were coded as (0).

*Additional Socio-Demographic Covariates (Controls)*

We include various measures of father, mother, and child characteristics in our analyses to control for confounding influences.

*Father Characteristics.* Demographic covariates include categorical variables for fathers' marital status (*married* or *unmarried*); race (*non-Hispanic White*, *non-Hispanic Black*, *Hispanic*, or *other*); education (*less than high school* or *more than high school*); and employment (*employed* or *unemployed*), all measured using responses from the 9-month resident father survey. A continuous variable was used to measure father's age at the time of the 9-month survey. Fathers' depressive symptoms were measured at the time of the 9-month survey using the 12-item abbreviated version of the Center for Epidemiological Studies of Depression Scale (CES-D) (Radloff, 1977). The CES-D was designed to measure the frequency of depressive symptoms that have been identified in the clinical literature on depression, as well as in other existing depression inventories, and is well known for its psychometric properties (Radloff, 1977). Fathers were asked how often in the past week they: felt bothered by things that don't usually bother them; did not feel like eating or had a poor appetite; could not shake off the blues; had trouble keeping their mind on what they were doing; felt depressed; felt that

everything they did was an effort; felt fearful; had restless sleep; talked less than usual; felt lonely; felt sad; or felt that they could not get going. For each item, fathers who reported feeling this way rarely or never were coded as (0); fathers who reported feeling this way sometimes or a little of the time were coded as (1); fathers who reported feeling this way occasionally were coded as (2); and fathers who reported feeling this way most or all of the time were coded as (3), and responses for each item were summed to create a single scale. Total scores on the scale ranged from 0 to 36 ( $mean = 3.4$ ;  $alpha = 0.81$ ). Higher scores indicate higher levels of depressive symptoms.

We also include a continuous measure of the father's perception of the importance of his role at nine months. We created a 7-item index of father's agreement with regard to views on: it being essential for the child's well-being that fathers spend time playing with their children; it being difficult for men to express affectionate feelings towards babies; a father should be as heavily involved as the mother in the care of the child; the way a father treats his baby has a long-term effect on the child; the activities that a father does with his child do not matter, what matters is that he provides for them; one of the most important things that a father can do is to give the mother encouragement and emotional support; and all things considered, fatherhood is a highly rewarding experience. For these items, fathers indicated whether they (0) strongly agreed, (1) agreed, (2) disagreed, or (3) strongly disagreed. We reverse coded some of the items and created an index of perceptions of the role of the father by adding scores from each of the seven items ( $range = 0 - 21$ ;  $mean = 18.0$ ;  $alpha = 0.62$ ). Higher scores indicate a more positive perception of the role as a father.

*Mother Characteristics.* Covariates for mothers' socio-demographic characteristics include age, measured as a continuous variable at the time of the 9-month survey. We used dichotomous variables to measure maternal employment (*employed* or *unemployed*) and education (*less than high school* or *more than high school*) at the time of the 9-month survey. Mothers' pregnancy intentions were also measured at 9 months. In the parent survey, biological mothers were asked if they felt that the baby was wanted and, if so, whether the birth was properly timed or was mistimed. Categorical variables were used to

assess if the baby was 1) wanted at the time that it occurred, 2) wanted, but at some other time, or 3) unwanted. We control for these factors to address the possibility that the father's behaviors may reflect characteristics and intentions of the mother.

*Household Characteristics.* We used a continuous variable to measure the number of children in the household at the time of the 9-month survey (*range* = 1 – 11; *mean* = 1.3). Poverty status was measured as a dichotomous variable (*below 100% of the federal poverty line* or *at or above 100% of the federal poverty line*).

*Child Characteristics.* We also include several variables to control for child characteristics. We include a dummy variable indicating the sex of the child (*male* or *female*), and we include a continuous variable to control for the child's age at the time of the 9-month survey. Finally, we include a continuous variable measuring the child's temperament at 9 months using a 7-item abbreviated version of the Infant/Toddler Symptom Checklist (ITSC) (DeGangi, Poisson, Sickel, et al., 1995). The ITSC was designed to identify infants and toddlers with regulatory disorders and who, as a result, may be especially demanding of their caregivers or unpredictably fussy (Nord, Edwards, Hilpert, Branden, Andreassen, Elmore & al., 2004). Caregivers were asked how often: the child is fussy or irritable; the child goes easily from a whimper to an intense cry; the child demands attention and company constantly; the child wakes up three or more times at night and is unable to go back to sleep; the child needs a lot of help to fall asleep; the child is startled or upset by loud sounds; and the child is unable to wait for food or toys without crying or whining. For each item, children who had never fit the description were coded as (0); children who used to fit the description were coded as (1); children who sometimes fit the description were coded as (2); and children who fit the description most of the time were coded as (3). The scores for each item were then added together to create a single variable assessing the child's temperament (*range* = 0 – 19; *mean* = 8.1; *alpha* = 0.52). Higher scores indicate a more difficult temperament.

## RESULTS

### *Descriptive Statistics*

Table 1 presents weighted descriptive statistics for all variables used in the analyses. First time biological resident fathers, on average, were 29.4 years old at the time of the 9-month survey. Most fathers in the sample (66.5%) were non-Hispanic White, and an additional 21.7% were Hispanic. Six percent were of another race/ethnicity, and 5.8% of fathers were non-Hispanic Black. Most fathers in the sample (80.7%) were married, and fathers were highly educated, with 60.5% reporting that they had more than a high school education.

Half of fathers (50.7%) reported that the pregnancy of the focal child was wanted, and an additional three in ten (30.0%) reported that the pregnancy was mistimed. Nearly two in ten (19.4%) reported that the pregnancy was unwanted. Fathers generally reported positive co-parenting relationships. The mean of the index for *co-parenting conflict* was 1.1, with a range of 0 to 3, suggesting that most fathers had relatively low levels of conflict in their co-parenting relationships. Fathers reported almost daily communication about the child with a mean of 4.9 on an index ranging from 0 to 5. For *co-parenting cooperation*, fathers reported a mean of 3.0 on a range of 0 to 4, suggesting that fathers watched the child when the mother is doing other things on a highly frequent basis (a few times a week). The mean of the index for *shared decision making* was 6.4, with a range of 0 to 8, suggesting that fathers were highly involved in decisions about the child. On average, fathers engaged in a high number of prenatal behaviors. Nearly all fathers (99.0%) saw the baby in the hospital.

### *Multivariate Results*

*Question 1:* *What are the associations and pathways through which fathers' pregnancy intentions influence their co-parenting behaviors after the birth of a first child?*

*Co-Parental Communication.* There was an indirect effect of having an unwanted or mistimed pregnancy on co-parental communication. Specifically, the significant indirect association between pregnancy intentions and co-parental communication operated through mother-father relationship happiness, net of controls for parent characteristics, household characteristics, and child characteristics

(see Table 2, Figure 1). Compared to those who reported a wanted pregnancy, first-time fathers who reported that a pregnancy was unwanted or mistimed had lower levels of relationship happiness ( $\beta = -0.148, p = 0.001$  for unwanted pregnancies;  $\beta = -0.143, p = 0.009$  for mistimed pregnancies), which in turn was associated with higher co-parental communication ( $\beta = 0.153, p = 0.003$ ). This model had a reasonable fit (RMSEA = 0.000; CFI = 1.000; TLI = 1.103; WRMR = 0.437).

*Co-Parental Conflict.* Net of controls for parent, child, and household characteristics, there was no direct effect of pregnancy intentions on co-parental conflict. Instead, an indirect association operated between pregnancy intentions and conflict (see Table 2, Figure 2). Unwanted and mistimed pregnancies were associated with lower mother-father relationship happiness ( $\beta = -0.148, p = 0.001$  for unwanted pregnancies;  $\beta = -0.143, p = 0.009$  for mistimed pregnancies). In turn, higher relationship happiness was associated with lower levels of co-parental conflict ( $\beta = -0.218, p < 0.001$ ). This model also had a reasonable fit (RMSEA = 0.000; CFI = 0.100; TLI = 1.017; WRMR = 0.486).

*Co-Parental Support.* Net of controls for parent, child, and household characteristics, there were no direct associations between pregnancy intentions and co-parental support (see Table 2, Figure 3). There were, however, indirect associations. Compared to having a wanted pregnancy, having a mistimed or unwanted pregnancy was associated with less mother-father relationship happiness ( $\beta = -0.148, p = 0.001$  for unwanted pregnancies;  $\beta = -0.143, p = 0.009$  for mistimed pregnancies), which reduces the significant positive association between relationship happiness and co-parental support ( $\beta = 0.185, p = 0.028$ ). This model had a reasonable fit (RMSEA = 0.000; CFI = 1.000; TLI = 1.075; WRMR = 0.462).

*Co-Parental Cooperation.* There was a direct association between having an unwanted pregnancy and less co-parental cooperation ( $\beta = -0.095, p = 0.016$ ), net of controls for parent characteristics, child characteristics, and household characteristics (see Table 2, Figure 4). There was also an indirect association between pregnancy intentions and co-parental cooperation which operated through relationship happiness. First-time fathers who reported a mistimed or unwanted pregnancy

reported lower levels of relationship happiness ( $\beta = -0.148, p = 0.001$  for unwanted pregnancies;  $\beta = -0.143, p = 0.009$  for mistimed pregnancies), which in turn were associated with lower levels of co-parental cooperation ( $\beta = -0.165, p = 0.004$ ). This model had a reasonable fit (RMSEA = 0.009; CFI = 0.943; TLI = 0.841; WRMR = 0.586).

*Shared Decision Making.* We also conducted analyses to identify direct or indirect associations between pregnancy intentions as reported at 9 months and shared decision making at 24 months (see Table 2, Figure 5). As with our other four models, net of controls for parent, child, and household characteristics, we found that having a mistimed or unwanted pregnancy was associated with lower levels of relationship happiness ( $\beta = -0.148, p = 0.001$  for unwanted pregnancies;  $\beta = -0.143, p = 0.009$  for mistimed pregnancies) and that relationship happiness, in turn, was associated with higher levels of shared decision making ( $\beta = 0.157, p = 0.023$ ). However, the model for this outcome did not fit as well as the models for the other co-parenting outcomes (RMSEA = 0.014; CFI = 0.853; TLI = 0.589; WRMR = 0.689).

*Question 2: Do the direct and indirect association between pregnancy intentions and co-parenting vary according to the birth of a son versus a daughter?* We only found a significant difference by gender for one aspect of co-parenting: co-parental communication (see Table 3, Figures 6-7). Among first-time fathers of daughters, those who report having an unwanted or mistimed pregnancies report lower levels of relationship happiness ( $\beta = -0.148, p = 0.076$  for mistimed pregnancies;  $\beta = -0.201, p = 0.010$  for unwanted pregnancies), and relationship happiness was associated with higher levels of co-parental communication at 24 months ( $\beta = 0.315, p < 0.001$ ). There were no direct or indirect associations between pregnancy intentions and co-parental communication for first-time fathers of sons. These models had an acceptable fit (RMSEA = 0.000; CFI = 1.000; TLI = 1.022; WRMR = 0.694).

## DISCUSSION



We had two goals in the present analyses. First, we explored the associations and pathways through which fathers' pregnancy intentions (reported retrospectively) influence their co-parenting behaviors after the birth of a first child. Our second goal was to explore whether these associations and pathways varied according to the birth of a son versus a daughter. We used a sample of first-time biological resident fathers who participated in both the 9-month and 24-month waves of the ECLS-B. We found evidence to support some of our hypotheses.

*Hypothesis 1: Direct associations between male pregnancy intentions and co-parenting.* We hypothesized that there would be a direct negative association between an unwanted and mistimed birth and co-parental support, co-parental communication, co-parental cooperation, and shared decision making and that there would be a direct positive association between an unwanted and mistimed birth and co-parental conflict. This hypothesis was supported for one measure of co-parenting: co-parenting cooperation – an unwanted pregnancy had a direct negative effect on co-parental cooperation. Prior research suggests that having an unintended pregnancy may be associated with poorer parenting (Axinn, Barber & Thornton, 1998; Bronte-Tinkew et al., 2007), and our study highlights the pathways through which a similar relationship exists but for co-parenting. An unwanted pregnancy in this case serves as an additional stress or strain on first-time fathers' parenting relationships (Bouchard, 2005, Orr & Miller, 1997) at a time when men are already experiencing stress from changes in their family relationships as they transition into parenthood, resulting in a poorer co-parenting relationship (Belsky, Crnic & Gable, 1995). These findings emphasize that fathers experiencing an unwanted pregnancy may find it easier to withdraw from co-parenting with partners because, in general, it is easier for fathers to withdraw from their parenting roles than it is for mothers to do so (Erel & Burman, 1995).

*Hypothesis 2: The Mother-Father Relationship as a Mediator.* We hypothesized that the father-mother relationship would mediate the association between male pregnancy intentions and co-parenting behaviors, and this hypothesis was supported. For all models, having an unwanted or mistimed birth was associated with poorer relationship quality, which in turn was associated with lower co-parental

support, lower co-parental communication, lower shared decision making, and with greater co-parental conflict. This finding joins other studies suggesting that the father-mother relationship is associated with fathers' co-parenting relationships (Floyd & Zmich, 1991, McHale, 1995). These findings also provide additional support for the "spillover hypothesis," which posits that the quality of romantic relationships is associated with the quality of other relationships, including the co-parenting relationship (Erel & Burman, 1995). This finding is consistent with the family systems framework, which suggests that family subsystems – in this case, the marital subsystem and the co-parenting subsystem – are interdependent (Cox & Paley, 2003) and that the reorganization of the marital subsystem in particular after a birth has important consequences for the overall family system (Cox & Paley, 1997). The strain of an unwanted pregnancy is seen here to reduce the quality of the couple relationship (Cox, Paley, Burchinal & Payne, 1999, Crouter, Bumpus, Head, et al., 2001). Findings suggest that men's co-parenting behavior may be more negatively affected than women's behavior by the combination of lower relationship quality and the presence of increased stress (Almeida, Wethington & Chandler, 1999, Coiro & Emery, 1998), and this is also the case here.

*Hypothesis 3: Pre-natal Behaviors as a mediator.* Our third hypothesis, that male prenatal behaviors would mediate the association between pregnancy intentions and co-parenting, was not supported for any of our co-parenting outcomes. This finding is surprising since previous work suggests that prenatal behaviors are associated with later father engagement (Bronte-Tinkew, Ryan, Carrano & Moore, 2007), and the present analyses indicate that such associations do not exist for co-parenting. This may be due in part to the relatively high level of prenatal involvement for fathers in our sample. Fathers were involved in more than five of six prenatal activities, and nearly all fathers saw the baby in the hospital. These results may reflect that fathers' pregnancy intentions may affect different aspects of the family system in different ways, and may also be reflective of the fact that the co-parental relationship may be more susceptible to fathers' intentions and readiness for parenthood than his direct involvement in prenatal behaviors.

*Hypothesis 4: Differences by gender.* We hypothesized that the association between fathers' pregnancy intentions and co-parenting would be stronger for first-time fathers of sons versus first-time fathers of daughters. We found that for first-time fathers of daughters, having a mistimed or unwanted pregnancy was indirectly associated with lower levels of co-parental communication. For first-time fathers of sons, there were no direct or indirect associations between pregnancy intentions and co-parental communication. Our findings lend some support to the idea that having an unplanned daughter is associated with more negative co-parenting behaviors than having an unplanned son (Cox, Paley, Burchinal & Payne, 1999). Fathers, especially first-time fathers who likely have little or no prior experience with parenting and co-parenting, may be less capable of identifying with daughters than with sons and may perceive less societal expectations and pressure to be highly involved in their daughters' upbringing (Carlson & McLanahan, 2004). Fathers of daughters may be less likely than fathers of sons to engage in supportive co-parenting relationships, especially if the child was unwanted. Our findings suggest that the combination of being the result of an unwanted birth and being a daughter may place daughters at high risk for less positive co-parenting and, in turn, poorer well-being (Cox & Paley, 1997).

*Limitations of Current Study.* There are some limitations of this study that should be noted. First, there is no "gold standard" against which our findings can be assessed given the paucity of information on fathers' pregnancy intentions. However, this lack of information on associations between men's pregnancy intentions and co-parenting is why our efforts to assess these relationships are critical. Second, ideally we should have longitudinal information on males' family-building experiences across their life course with detailed information on both men and women's intentions regarding conception and prenatal behaviors. Instead, questions about the circumstances of conception are retrospective, which may make the answers offered subject to distortion and recall error (Brown & Eisenberg, 1995). Previous work suggests that pregnancy intentions may also change over the course of a pregnancy (Brown & Eisenberg, 1995, Miller, 1974) as well as after a child's birth (Axinn, Barber & Thornton, 1998); however, because the ECLS-B does not survey parents prior to the birth of a child, we must rely

upon retrospective accounts. Third, although we categorize fathers' evaluations of their pregnancy intentions as wanted, mistimed, or unwanted, men's experiences are probably more complicated than this simple trichotomy (Barber, Axinn & Thornton, 1999). Fourth, despite having the same pattern of associations as our other models, our model for shared decision making did not meet the thresholds established for two of the goodness of fit indexes. This does not mean that the results of for this outcome should be disregarded but rather that fathers' pregnancy intentions may not affect the shared decision making dimension of co-parenting as strongly as it affects other dimensions such as co-parental communication or cooperation.

*Contributions of Present Study.* This study extends previous research by using a large, nationally representative sample of first-born infants and their resident fathers to analyze how men's pregnancy intentions, recalled retrospectively when the child is nine months of age, are associated with men's perceptions of co-parenting behavior when their children are 24 months of age. Most prior research has focused on mothers' pregnancy intentions and has not examined associations between intentions and later co-parenting, and our purpose was to address these gaps in existing research. To the best of our knowledge, no other studies have examined the associations between *men's* pregnancy intentions and co-parenting behavior by examining the pathways and mechanisms through which pregnancy intentions influence these outcomes. The findings from this study should lay the groundwork for further research that assesses the influence of men's pregnancy intentions on outcomes for children.

*Policy Implications.* The findings presented here indicate that first-time resident fathers' pregnancy intentions are important in understanding their later co-parenting relationships. Our findings suggest the need for policies that help men and women experience fertility according to their timing desires. Findings also suggest that the relationship between fathers and mothers is critical to later co-parenting behavior, suggesting that programs designed to strengthen relationships of expectant parents and new parents of infants may improve co-parenting behavior as is has implications for children's well-being.

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Table 1  
*Descriptive Statistics for Variables Used in the Analysis, First-Time Biological Resident Fathers in the ECLS-B 9-Month Father Survey (n = 1,287)*

|                                                   | Mean/Percentage | SD   | Range    |
|---------------------------------------------------|-----------------|------|----------|
| <b>Independent Variables</b>                      |                 |      |          |
| Fathers' Pregnancy Intentions                     |                 |      |          |
| Wanted Pregnancy                                  | 50.7%           | -    | -        |
| Mistimed Pregnancy                                | 30.0%           | -    | -        |
| Unwanted Pregnancy                                | 19.4%           | -    | -        |
| <b>Mediators</b>                                  |                 |      |          |
| Prenatal Behaviors                                |                 |      |          |
| Index of Prenatal Behaviors                       | 5.4             | 0.74 | 0 - 6    |
| Mother-Father Relationship Quality                |                 |      |          |
| Relationship is Fairly Happy                      | 71.7%           | -    | -        |
| Relationship is Somewhat or Not Very Happy        | 28.3%           | -    | -        |
| <b>Controls</b>                                   |                 |      |          |
| <i>Father's Individual Characteristics</i>        |                 |      |          |
| Race/Ethnicity                                    |                 |      |          |
| Non-Hispanic White                                | 66.5%           | -    | -        |
| Non-Hispanic Black                                | 5.8%            | -    | -        |
| Hispanic                                          | 21.7%           | -    | -        |
| Other Race/Ethnicity                              | 6.0%            | -    | -        |
| Age                                               | 29.4            | 5.97 | 17 - 57  |
| Educational Status                                |                 |      |          |
| High School/GED or Less Than High School          | 39.6%           | -    | -        |
| More Than High School                             | 60.5%           | -    | -        |
| Employment Status                                 |                 |      |          |
| Employed                                          | 90.3%           | -    | -        |
| Unemployed                                        | 9.7%            | -    | -        |
| Marital Status                                    |                 |      |          |
| Married                                           | 80.7%           | -    | -        |
| Not Married                                       | 19.3%           | -    | -        |
| Father's Role Perceptions                         | 18.0            | 2.19 | 10 - 21  |
| Father's Depressive Symptoms                      | 3.4             | 4.24 | 0 - 33   |
| <i>Mother's Individual Characteristics</i>        |                 |      |          |
| Age                                               | 27.8            | 5.75 | 15 - 51  |
| Mothers' Pregnancy Intentions                     |                 |      |          |
| Wanted Pregnancy                                  | 52.3%           | -    | -        |
| Mistimed Pregnancy                                | 45.0%           | -    | -        |
| Unwanted Pregnancy                                | 2.6%            | -    | -        |
| Educational Status                                |                 |      |          |
| High School/GED or Less Than High School          | 17.0%           | -    | -        |
| More Than High School                             | 84.0%           | -    | -        |
| Employment Status                                 |                 |      |          |
| Employed                                          | 60.6%           | -    | -        |
| Unemployed                                        | 39.4%           | -    | -        |
| <i>Household Characteristics</i>                  |                 |      |          |
| Poverty Status                                    |                 |      |          |
| Household is Below 100% of the Poverty Line       | 11.4%           | -    | -        |
| Household is At or Above 100% of the Poverty Line | 88.6%           | -    | -        |
| Number of Children in Household                   | 1.3             | 0.75 | 1 - 11   |
| <i>Child Characteristics</i>                      |                 |      |          |
| Child Gender                                      |                 |      |          |
| Male                                              | 53.7%           | -    | -        |
| Female                                            | 46.3%           | -    | -        |
| Child Temperament                                 | 8.1             | 3.59 | 0 - 19   |
| Age                                               | 10.4            | 1.73 | 6.2 - 21 |
| <b>Dependent Variables</b>                        |                 |      |          |
| Co-Parenting Communication                        | 4.9             | 0.4  | 0 - 5    |
| Co-Parenting Conflict                             | 1.1             | 0.85 | 0 - 3    |
| Co-Parenting Support                              | 92.7%           | -    | -        |
| Co-Parenting Cooperation                          | 3.0             | 0.97 | 0 - 4    |
| Shared Decision Making                            | 6.4             | 1.68 | 0 - 8    |

Note: Percentages may not add to 100% due to rounding

Table 2

Standardized path coefficients for the structural equation models (see Figures 1-5) describing relationships among father's pregnancy intentions and co-parenting at 24 months ( $n = 1,287$ )

|                                                     | Co-parental<br>Communication<br>(24 months) | Co-parental<br>Conflict<br>(24 months) | Co-parental<br>Support<br>(24 months) | Co-parental<br>Cooperation<br>(24 months) | Shared Decision<br>Making<br>(24 months) |
|-----------------------------------------------------|---------------------------------------------|----------------------------------------|---------------------------------------|-------------------------------------------|------------------------------------------|
| <b>Effects of Pregnancy Intentions on Mediators</b> |                                             |                                        |                                       |                                           |                                          |
| Unwanted Pregnancy→Father-Mother Relationship       | -0.148*                                     | -0.148*                                | -0.148*                               | -0.148*                                   | -0.148*                                  |
| Mistimed Pregnancy→Father-Mother Relationship       | -0.143*                                     | -0.143*                                | -0.143*                               | -0.143*                                   | -0.143*                                  |
| Unwanted Pregnancy→Prenatal Behaviors               | -0.030                                      | -0.030                                 | -0.030                                | -0.030                                    | -0.03                                    |
| Mistimed Pregnancy→Prenatal Behaviors               | -0.008                                      | -0.008                                 | -0.008                                | -0.008                                    | -0.008                                   |
| <b>Effects of Mediators on Mediators</b>            |                                             |                                        |                                       |                                           |                                          |
| Prenatal Behaviors→Father-Mother Relationship       | 0.021                                       | 0.021                                  | 0.028                                 | 0.022                                     | 0.024                                    |
| <b>Effects of Mediators on Outcome</b>              |                                             |                                        |                                       |                                           |                                          |
| Father-Mother Relationship→Outcome                  | 0.153*                                      | -0.218*                                | 0.185*                                | -0.165*                                   | 0.157*                                   |
| Prenatal Behaviors→Outcome                          | -0.010                                      | -0.006                                 | 0.108*                                | -0.032                                    | 0.024                                    |
| Unwanted Pregnancy→Outcome                          | 0.074                                       | 0.033                                  | -0.082                                | -0.095*                                   | 0.012                                    |
| Mistimed Pregnancy→Outcome                          | 0.082                                       | 0.042                                  | 0.030                                 | -0.027                                    | -0.013                                   |
| RMSEA <sup>1</sup>                                  | 0.000                                       | 0.000                                  | 0.000                                 | 0.009                                     | 0.014                                    |
| CFI <sup>2</sup>                                    | 1.000                                       | 1.000                                  | 1.000                                 | 0.943                                     | 0.853                                    |
| TLI <sup>3</sup>                                    | 1.103                                       | 1.017                                  | 1.075                                 | 0.841                                     | 0.589                                    |
| WRMR <sup>4</sup>                                   | 0.437                                       | 0.486                                  | 0.462                                 | 0.586                                     | 0.689                                    |

<sup>†</sup>p<0.10, \*p<0.05, \*\*p<0.01, \*\*\*p<0.001. Models include controls for father characteristics, mother characteristics, child characteristics, and household characteristics

<sup>1</sup>Root-Mean Square Error of Approximation, with acceptable values <0.06

<sup>2</sup>Comparative Fit Index, with acceptable values >0.95

<sup>3</sup>Tucker Lewis Index, with acceptable values >0.95

<sup>4</sup>Weighted Root Mean Square Residual, with acceptable values <0.90

Table 3

Standardized path coefficients for the structural equation models (see Figures 6-7) describing gender differences in associations among father's pregnancy intentions and co-parenting at 24 months (n = 1,287)

|                                                     | Co-Parental Communication among<br>Fathers of Daughters (24 months) | Co-Parental Communication among<br>Fathers of Sons (24 months) |
|-----------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------|
| <b>Effects of Pregnancy Intentions on Mediators</b> |                                                                     |                                                                |
| Unwanted Pregnancy→Father-Mother Relationship       | -0.201*                                                             | -0.119                                                         |
| Mistimed Pregnancy→Father-Mother Relationship       | -0.148†                                                             | -0.144*                                                        |
| Unwanted Pregnancy→Prenatal Behaviors               | -0.043                                                              | -0.044                                                         |
| Mistimed Pregnancy→Prenatal Behaviors               | -0.003                                                              | -0.019                                                         |
|                                                     |                                                                     | -0.019                                                         |
| <b>Effects of Mediators on Mediators</b>            |                                                                     |                                                                |
| Prenatal Behaviors→Father-Mother Relationship       | 0.064                                                               | -0.013                                                         |
| <b>Effects of Mediators on Outcome</b>              |                                                                     |                                                                |
| Father-Mother Relationship→Outcome                  | 0.315**                                                             | 0.026                                                          |
| Prenatal Behaviors→Outcome                          | 0.035                                                               | -0.077*                                                        |
| Unwanted Pregnancy→Outcome                          | 0.084                                                               | 0.076                                                          |
| Mistimed Pregnancy→Outcome                          | 0.085                                                               | 0.081                                                          |
| n                                                   | 592                                                                 | 695                                                            |
| RMSEA <sup>1</sup>                                  | 0.000                                                               | 0.000                                                          |
| CFI <sup>2</sup>                                    | 1.000                                                               | 1.000                                                          |
| TLI <sup>3</sup>                                    | 1.022                                                               | 1.022                                                          |
| WRMR <sup>4</sup>                                   | 0.694                                                               | 0.694                                                          |

†p<0.10, \*p<0.05, \*\*p<0.01, \*\*\*p<0.001. Models include controls for father characteristics, mother characteristics, child characteristics, and household characteristics

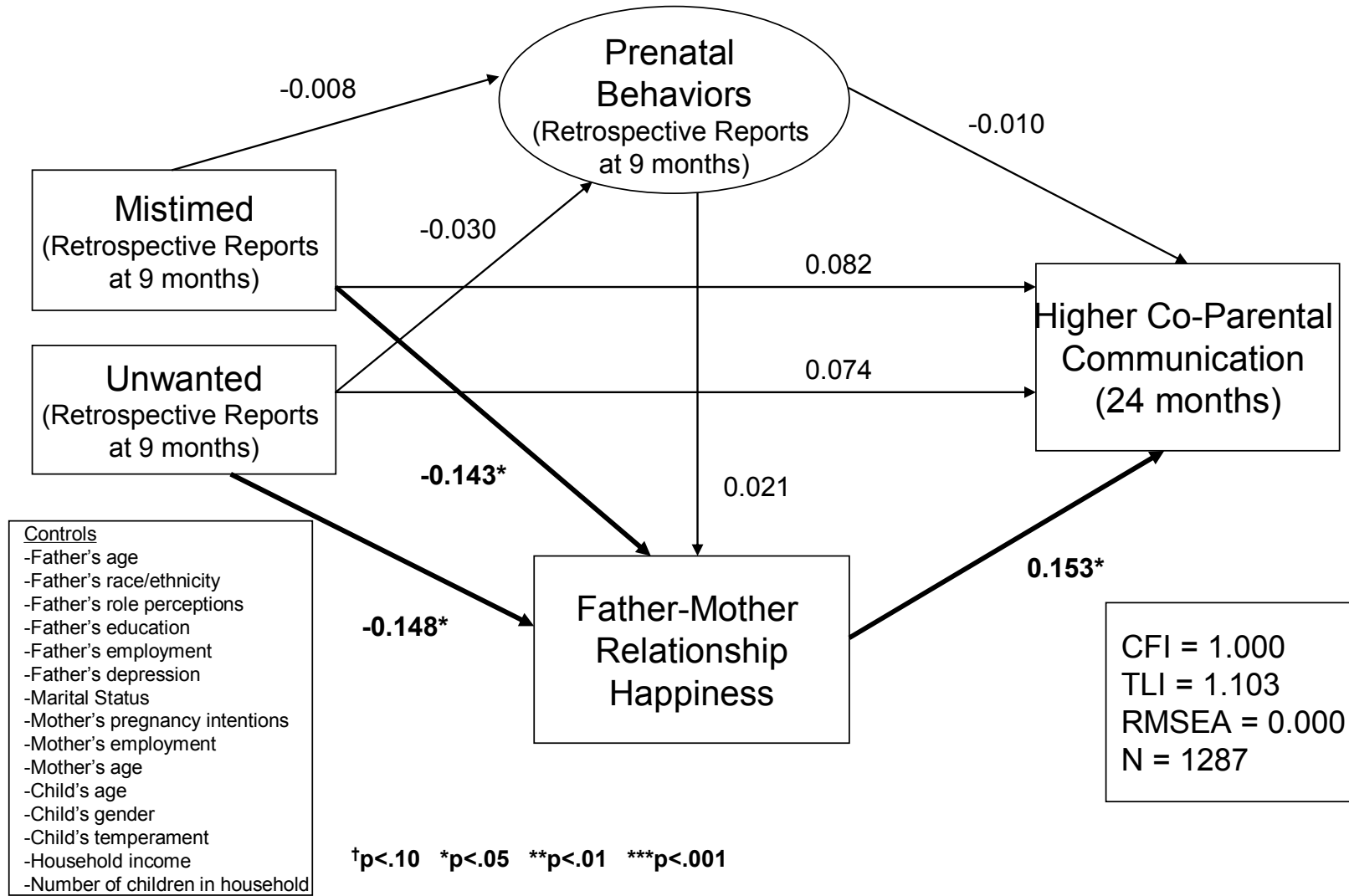
<sup>1</sup>Root-Mean Square Error of Approximation, with acceptable values <0.06

<sup>2</sup>Comparative Fit Index, with acceptable values >0.95

<sup>3</sup>Tucker Lewis Index, with acceptable values >0.95

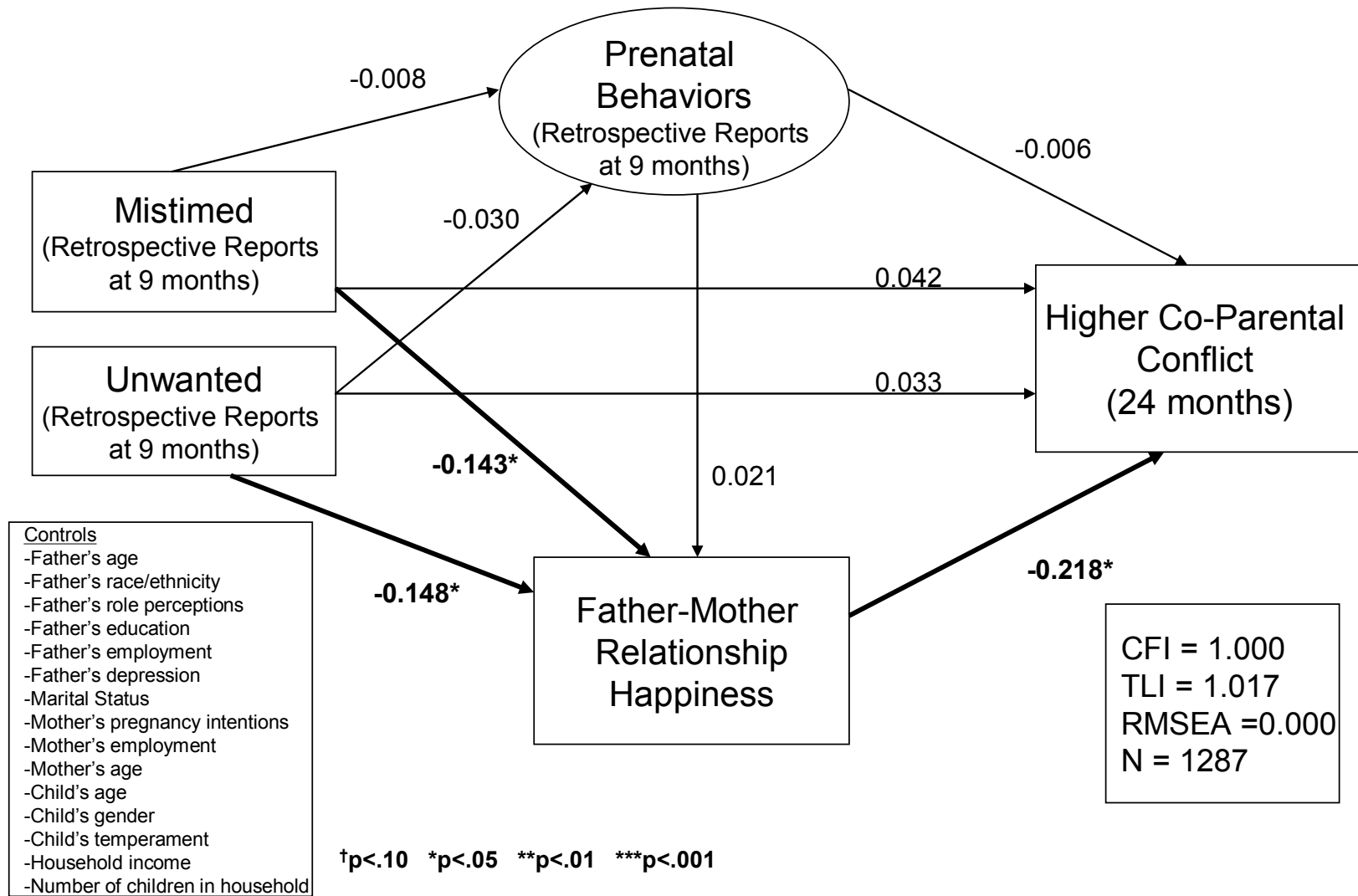
<sup>4</sup>Weighted Root Mean Square Residual, with acceptable values <0.90

**Figure 1: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Co-Parental Communication (ECLS-B)**

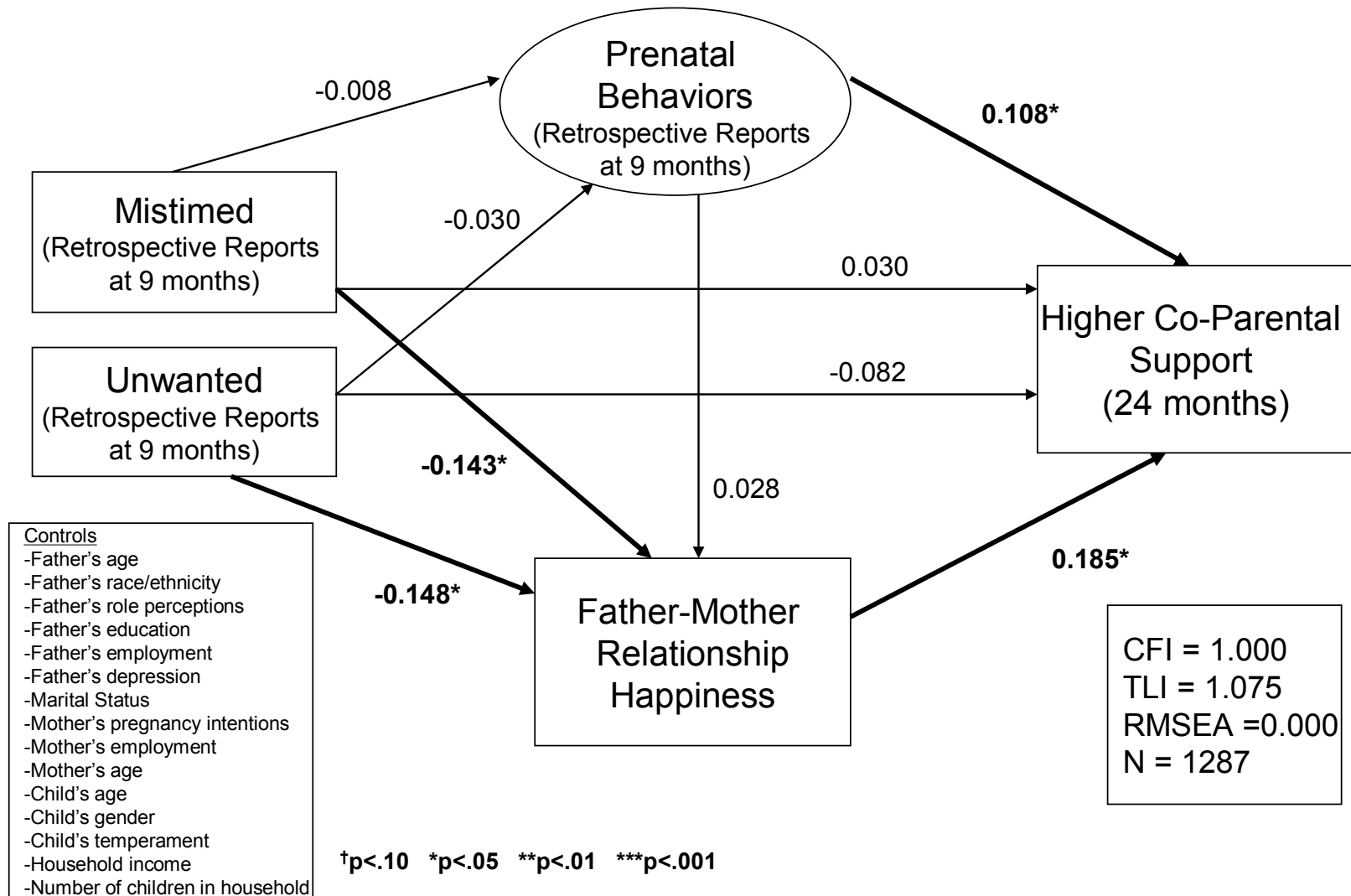




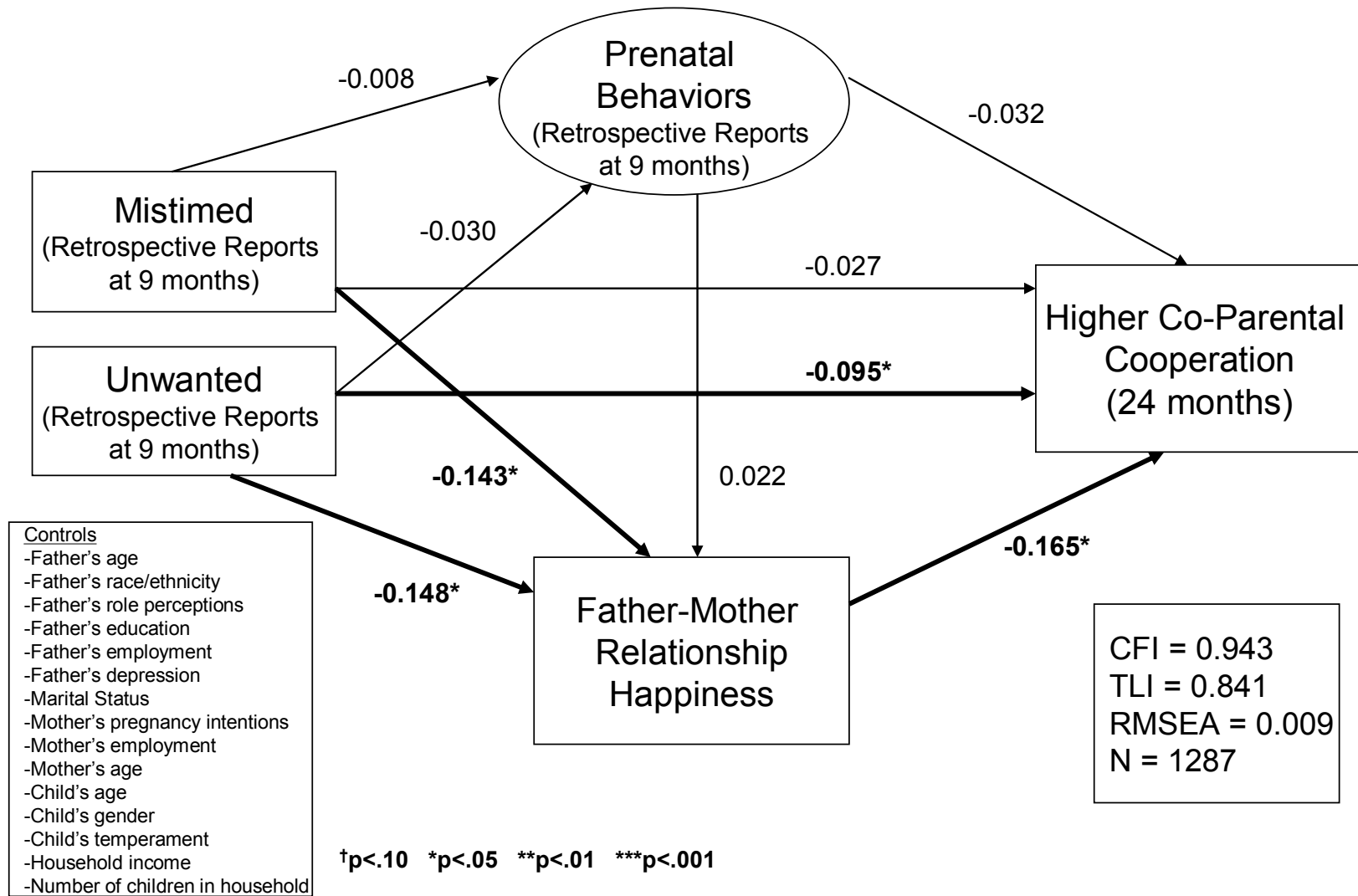
**Figure 2: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Co-Parental Conflict (ECLS-B)**



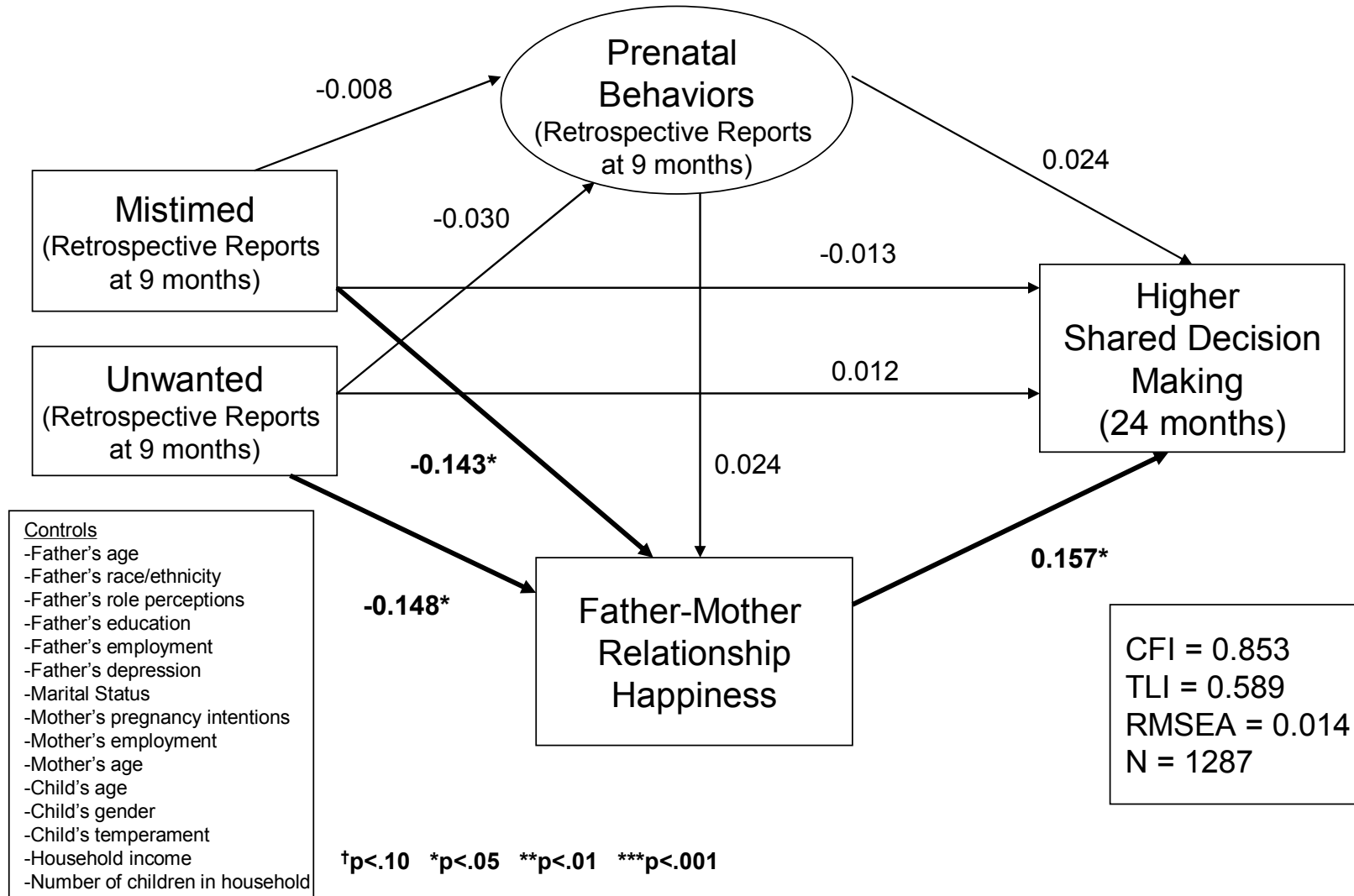
**Figure 3: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Co-Parental Support (ECLS-B)**



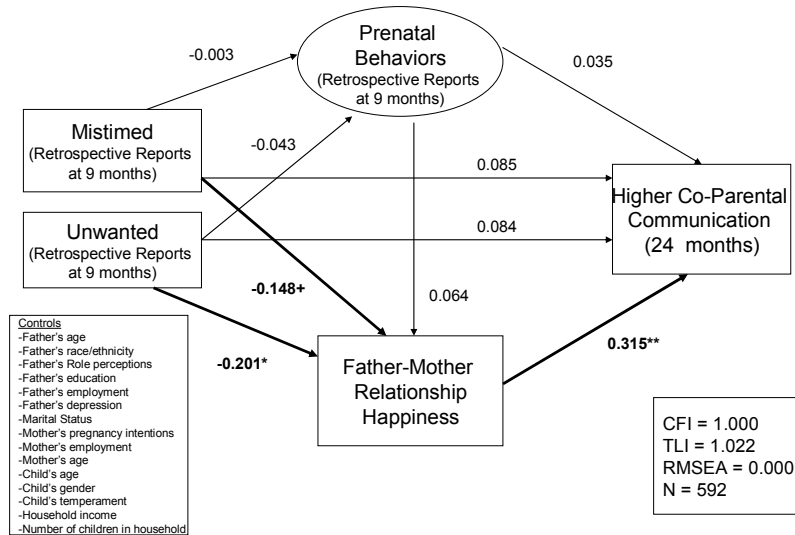
**Figure 4: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Co-Parental Cooperation (ECLS-B)**



**Figure 5: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Shared Decision Making (ECLS-B)**



**Figure 6: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Co-Parental Communication for Fathers of Daughters (ECLS-B)**



**Figure 7: Structural Equation Model of the Association between First Time Biological Resident Fathers' Pregnancy Intentions and Co-Parental Communication for Fathers of Sons (ECLS-B)**

