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FAMILY STRUCTURE TRANSITIONS AND MATERNAL PARENTING STRESS

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Abstract

Data from the Fragile Families and Child Wellbeing Study ($N = 4,176$) are used to examine family structure transitions and maternal parenting stress. Using multilevel modeling, we find that mothers who exit coresidential relationships with biological fathers or enter coresidential relationships with nonbiological fathers report higher levels of parenting stress than mothers in stable coresidential relationships. Mothers who enter coresidential relationships with biological fathers report lower levels of parenting stress than mothers who remain single. Mothers' resources, especially their relationships with biological fathers, account for most of the associations between transitions and parenting stress, with posttransition resources being more important than pretransition resources. Mothers with high levels of education are less affected by transitions than mothers with less education.

Keywords

Education; Family Structure; Fragile Families; Parenting Family Structure Transitions and Maternal Parenting Stress

The past fifty years have witnessed dramatic changes in the structure and stability of American families. Increased rates of divorce, cohabitation, and nonmarital fertility have contributed to a variety of new family forms and greater instability in children's living arrangements, especially among low-income and racial/ethnic minority families (Ventura & Bachrach, 2000). The increasingly diverse and fluid nature of American families has raised concerns about children's well-being and made understanding family structure transitions and their effects on parenting and child development a primary goal for social scientists. These changes have also led to policy initiatives designed to reduce nonmarital childbearing, increase marriage among unmarried parents, and reduce marital instability.

Although a substantial literature exists on divorce and remarriage, little is known about the consequences of marriage (with a biological or nonbiological, social father) for women who have children outside marriage. Even less is known about the consequences of entrances and exits from other types of unions (e.g., cohabitation) on mothers and their children. This study explores the associations between family structure transitions and mothers' parenting stress during the first five years of a child's life, paying special attention to transitions involving alternative family forms. Specifically, we ask: (1) Are family structure transitions associated with changes in maternal parenting stress? (2) To what extent do pretransition and posttransition maternal resources account for these associations? (3) Do the associations between family structure transitions and parenting stress vary by maternal education?

We pursue these three objectives using a valuable data set for research on family structure transitions: the Fragile Families and Child Wellbeing Study. The Fragile Families study is a national, longitudinal survey of births in large U.S. cities that follows approximately 5,000 parents and their children from birth until age five. Maternal reports of family composition were collected when the child was born and again at ages one, three, and five. The longitudinal nature of the Fragile Families study as well as its over sample of nonmarital births make these data ideal for studying different types of unmarried mothers (e.g., mothers who live alone versus those who cohabit with a biological or social father), different types of union transitions (e.g., into marriage and out of cohabitation), and the extent to which the associations between these transitions and parenting stress can be explained by pretransition and posttransition factors.

Background

Parenting Stress

Within any family, parenting is a challenging process. For a variety of reasons, however, parents may be more or less reactive to the challenges of raising children. The extent to which parents experience stress in their parenting roles, in particular, has important implications for parent, child, and family functioning. *Parenting stress* generally refers to a condition or feeling experienced when a parent perceives that the demands associated with parenting exceed the personal and social resources available to meet those demands. Not surprisingly, mothers who experience high levels of parenting-related stress report greater psychological distress and lower life satisfaction than mothers with low levels of stress (Crnic & Greenberg, 1990; Thompson, Merritt, Keith, Bennett, & Johndrow, 1993). Parenting stress is also associated with less optimal parenting, lower levels of developmental competence in children, and disrupted family systems (Anthony et al., 2005; Crnic & Acevedo, 1995; Crnic, Gaze, & Hoffman, 2005). Thus, gaining a better understanding of parenting stress and its determinants may help to improve the well-being of individual family members and the functioning of the family as a whole.

Models of the determinants of parenting stress suggest that individual characteristics of children and parents, relationships between couples, parent-child relationships, characteristics of the environment, and interactions among these factors all play a role in the experience of parental stress (Abidin, 1990; Crnic & Acevedo, 1995). Although more work is needed to understand the development of parenting stress, research has begun to provide support for these dynamic, multivariate models. For example, parents' expectations prior to the birth of the child, personality attributes, and aspects of family history (e.g., vulnerability to stress) affect the extent to which parents experience parenting-related stress (Cain & Combs-Orme, 2005; Mulsow, Caldera, Pursley, Reifman, & Huston, 2002; Noppe, Noppe, & Hughes, 1991). Child factors such as temperament and behavior also influence levels of parenting stress (Jackson, 2000; McBride, Schoppe, & Rane, 2002; Mulsow et al., 2002). Although examined less often, family-level factors including intimacy between parents and

coparenting processes have also been linked to parenting stress (Kalil, Ziol-Guest, & Coley, 2005; Mulsow et al., 2002). In this study, we extend previous work on the ways in which the family context can contribute to parenting stress by focusing on the union transitions of mothers as their children progress through early childhood, a time when parenting stress appears to be highest (Kuczynski & Kochanska, 1990).

Linkages between Family Structure Transitions and Parenting Stress

Union dissolution and parenting stress—Divorce brings about changes in the lives of mothers that can induce stress and diminish the capacity for warm, involved, and consistent parenting. Foremost among these changes is the loss of socioeconomic, social, and health resources. Following a divorce, mothers and children experience a substantial drop in their standard of living (Peterson, 1996; Bradbury & Katz, 2002), in part because of the loss of economies of scale and in part because many nonresidential fathers fail to pay adequate child support (Garfinkel & McLanahan, 1986). A loss of economic resources, regardless of a mother's prior financial situation, may generate parenting stress if she is less able to purchase valued material and social goods for her children (whether that means buying food or paying private school tuition; McLoyd, 1990). Divorce or separation is also associated with changes in maternal employment such as entering the workforce or increasing employment hours (Bradbury & Katz, 2002). To the extent that these changes result in difficulty obtaining high-quality or consistent child care, they may contribute to mothers' parenting-related stress (Teitler, Reichman, & Nepomnyaschy, 2004).

Research also suggests that union dissolution is associated with a loss of social resources. After a divorce or separation, mothers take on the wide range of parenting responsibilities they once shared with their husbands. For some mothers, the challenges associated with single parenthood (e.g., difficulty supervising or disciplining children) may lead to parental stress. Because many divorced mothers are forced to move, and because their new neighborhoods often have fewer community resources (Hogan & Kitagawa, 1985), they may also experience a loss of social resources through reduced connections to family, friends, and contexts of support in the community (Astone & McLanahan, 1994; McLanahan & Sandefur, 1994). Lowered access to these various forms of physical and emotional support is a likely source of parenting stress for divorced mothers.

In addition to losing economic and social resources, mothers who divorce may experience increases in physical and mental health problems. Specifically, divorced individuals report worse mental health (Meadows, McLanahan, & Brooks-Gunn, 2008), lower functional and self-rated health (Lorenz, Wickrama, Conger, & Elder, 2006; Wu & Hart, 2002), and more poor health behaviors (Lee et al., 2005) than their married counterparts. The onset of a health problem or the exacerbation of a preexisting condition may negatively impact mothers' perceptions of parenting demands (Mulsow et al., 2002).

To what extent does the loss of resources that often accompanies divorce apply to the dissolution of cohabiting relationships? The link between exiting a cohabiting relationship and parenting stress has not been examined, but research on the nature of cohabitation and the characteristics of mothers who cohabit may provide clues to the potential consequences of separation among cohabiting parents. For example, if cohabiting mothers are less invested in the relationship than married mothers (Nock, 1995) or even anticipate that the relationship will end (Rindfuss & VandenHeuvel, 1990), then they may experience lower levels of parenting stress after separation than their married counterparts. Conversely, cohabiting mothers have more mental and physical health problems (Meadows et al., 2008) and fewer socioeconomic resources (e.g., less earnings and lower levels of education) than married mothers (Manning & Lichter, 1996), which may contribute to *higher* levels of parenting stress following a separation.

Union formation and parenting stress—Like divorce, marriage brings about changes in the lives of mothers that can impact parenting-related stress. Unlike union dissolution, however, the changes associated with entering a marital or cohabiting relationship are typically expected to *increase* the economic resources of mothers and their children. Mothers who are single at the birth of their child are more likely to be poor than married mothers (Garfinkel & McLanahan, 1986). When single mothers enter into a residential relationship, however, they increase their chances of moving out of poverty (McLanahan & Sandefur, 1994). If marriage or cohabitation leads to the pooling of resources and the sharing of expenses, and if mothers are better able to provide for their children as a result, then entering into these relationships may decrease parenting stress.

In addition to economic resources, mothers who enter into a marriage or cohabiting relationship may acquire additional social resources. When two parents live in the same household, they can assist one another in their roles as parents by sharing childrearing responsibilities and providing emotional support. Because monitoring children and maintaining parental control, in particular, are easier in two-parent families (Coleman, 1988; McLanahan & Sandefur, 1994), mothers who marry or cohabit may have lower levels of parenting stress than those who remain single. Increases in social resources related to the addition of a parental figure, however, may be offset by decreases in resources following a residential move, which often accompanies union formation. As discussed, residential moves can exacerbate parenting stress by breaking ties with family, friends, and sources of support in the community (McLanahan & Sandefur, 1994).

Finally, marriage appears to have a protective effect on health, in part because couples monitor health behaviors and provide emotional support to one another (Peters & Liefbroer, 1997; Mathematica Policy Research, 2007). If union formation results in fewer physical or mental health problems, then mothers who enter into coresidential relationships may also experience declines in parenting stress. The degree to which a single mother benefits from marriage or cohabitation, however, likely depends on whether she enters a relationship with the child's biological father or a nonbiological, social father. Because social fathers may be less committed to a nonbiological child's well-being and may have children of their own, they often bring fewer resources to a relationship than biological fathers (Hofferth & Anderson, 2003). Furthermore, when conflict exists among new family members, entering into these relationships may result in increased rather than decreased levels of stress.

Pretransition Maternal Resources

A key weakness of early studies of family structure transitions, namely divorce, was failure to examine the extent to which predivorce factors explain transition effects (see Cherlin, Kiernan, & Chase-Lansdale, 1995; Fomby & Cherlin, 2007; Strohschein, 2005, as notable exceptions). Researchers argue that the characteristics of parents who ultimately break up differ substantially from those who remain intact, and these differences, rather than divorce, may be the source of poor child and parent outcomes (Amato, 2006; Sigle-Rushton & McLanahan, 2002). For example, because parents with mental health problems are more likely to divorce than healthy parents (Gotlib & McCabe, 1990), differences in child well-being following a divorce may be the result of mental health problems that predate the divorce. Investigations of family structure transitions and parenting stress, therefore, need to include all preexisting parental resources that are associated with both union transitions and parenting stress. In the present study, we distinguish among three types of resources that are expected to predict union transitions as well as maternal parenting stress.

Socioeconomic resources—The link between socioeconomic resources (e.g., household income, material hardship, educational attainment, and employment) and family

instability is well documented. For example, couples with lower levels of household income, lower educational attainment, and high levels of unemployment are more likely to experience union dissolution than their more advantaged counterparts (Burstein, 2007). Socioeconomic disadvantage also affects the extent to which parents experience stress in their roles as parents. Raising children in the context of poverty and/or material hardship is highly stressful if parents are unable to provide their children with food, clothing, adequate medical care, and a safe and stable place to live (Gershoff, Aber, Raver, & Lennon, 2007). Poor occupational conditions (e.g., low wages, poor benefits, and long hours) may also negatively impact parenting-related stress (Joshi & Bogen, 2007).

Social resources—Social resources, such as intimacy and mutual support between partners and support from extended family members and friends, are also related to both subsequent family structure transitions and parenting stress. Whereas the presence of social resources eases parental stress, improves parental functioning, and promotes positive marital relationships (Bradbury, Fincham, & Beach, 2000; Crnic & Greenberg, 1990; Melson, Windecker-Nelson, & Schwarz, 1998), the absence of these resources can exacerbate parenting stress and increase the likelihood of union dissolution (Kurdek, 2005; Mulsow et al., 2002).

Health resources—Finally, the mental and physical health of parents prior to family structure transitions is important because health has been linked to union formation and dissolution. Although family structure changes are negatively associated with mental health (Barrett, 2000; Meadows et al., 2008), research suggests that this association is likely bidirectional. For example, healthy individuals are more likely to marry and remain married while individuals with health problems are more likely to divorce (Goldman, 1993). Maternal health also affects how parents perceive stresses related to parenting. Although the relationship between health, especially mental health, and parenting stress is complex and reciprocal, researchers have suggested that mental health problems can contribute to the experience of parenting stress through biased perceptions of daily hassles and child behavior (Crnic & Acevedo, 1995).

Variations by Maternal Education

As discussed, mothers who undergo union dissolutions (and possibly union formations) may experience higher levels of parenting stress than mothers who remain in stable relationships. The link between family structure transitions and parenting stress, however, cannot be understood independent of the resources available to them at the time of the transition. In other words, although parental resources may be important for explaining associations between transitions and parenting stress, they may also serve to reduce or exacerbate the negative effects of family structure transitions.

Extant research suggests that socioeconomic resources, in particular, may help to protect against the negative effects of family structure transitions. For example, individuals holding high socioeconomic status positions may be less affected emotionally by stressful life experiences, including family structure transitions (McLeod & Kessler, 1990). Similarly, mothers may perceive parenting to be less stressful when they have sufficient economic resources to cope with the loss of household income that often coincides with divorce (Wang & Amato, 2000). Finally, children in more affluent homes experience fewer behavioral problems following family structure transitions compared to their low-income peers (Cavanagh & Huston, 2006).

Recent research suggests that maternal education, a key socioeconomic resource, may also reduce the deleterious effects of union transitions. Beck and colleagues (2008) report that

multiple partnership transitions decrease positive parenting practices and increase parenting stress for less educated mothers only. The buffering nature of maternal education may occur for a variety of reasons. For example, mothers of young children who experience a divorce (or a split from a cohabiting relationship) may be forced to increase their work hours and highly educated mothers should be better able to negotiate this change in terms of finding adequate employment and quality children care than mothers with less education. Another reason for expecting more educated mothers to respond better to union transitions is that these women may have more control over the timing and circumstances under which a transition occurs, including the end of a marriage and the beginning of a new partnership. Previous research on stressful life events indicates that events are less stressful when they are more voluntary or expected (McLanahan & Sorensen, 1984) and educated mothers are more likely to have such control given their greater bargaining power vis a vis past and future partners.

The Present Study

The purpose of the present study is three fold. First, we follow mothers who were living alone or coresiding with the biological father at the birth of their child for five years and examine the impact of their *first* family structure transition on maternal parenting stress. Constructing a time-varying measure of family structure transitions (i.e., a measure that indicates if and when a transition occurred over the five-year period) allows us to determine whether these transitions are associated with changes in parenting stress. Second, we investigate the extent to which pretransition and posttransition maternal resources account for the associations between family structure transitions and parenting stress. Third, we examine whether these associations are moderated by maternal education.

This study extends previous research in multiple ways. First, whereas research has begun to investigate the associations between marital status or aspects of marital relationships (e.g., emotional support) and maternal parenting stress (Cain & Combs-Orme, 2005; Mulsoe et al., 2002; Warfield, 2005), we know little about the consequences of divorce and marriage for parenting-related stress. Moreover, despite the growing number of mothers who transition in and out of alternative family structures (Teachman, 2003), research has yet to examine whether these transitions place women at risk for experiencing stress in their roles as parents. Second, we go beyond investigating whether family structure transitions are associated with parenting stress by examining mechanisms through which transitions may impact mothers' perceptions of parenting demands. Understanding mediating processes is important for identifying policy-amenable factors to counter the negative effects of family instability. Third, although researchers have begun to recognize the importance of controlling for family characteristics prior to changes in family structure, pretransition factors are often limited or narrowly defined. In this study, we extend past research by investigating the role of a comprehensive set of pretransition maternal resources in understanding the linkages between various family structure transitions and parenting stress. And finally, by investigating whether education helps mothers maintain low levels of parenting stress despite the risks associated with family structure transitions, this study informs efforts to learn more about the role of context in protecting mothers from stress and promoting mental health, positive parenting, and child well-being.

Method

Sample

The Fragile Families and Child Wellbeing Study is a longitudinal, birth cohort survey that follows 4,898 children, including 3,712 born to unmarried parents and 1,186 born to married parents (for a complete description of the sample and design, see Reichman, Teitler,

Garfinkel, & McLanahan, 2001). Maternal baseline interviews were conducted between 1998 and 2000 in 20 American cities with populations of 200,000 or more. Mothers were interviewed in the hospital within 48 hours of their child's birth. Follow-up phone interviews were conducted when the child was one, three, and five years old.

The analytic sample of this study uses data from all four waves of the Fragile Families study. Starting with the original sample of 4,898 mothers, we excluded mothers who did not participate in at least two of the three follow-up waves ($n = 665$) and mothers who ever lived with their child less than half time (an additional 57 mothers), resulting in a final sample size of 4,176. Of these mothers, 1,844 mothers had missing data on one or more variables needed for the analysis. Five hundred and ninety-eight mothers did not participate in one or more follow-up waves and 1246 had missing data on one or more study variables. To maximize the use of available information and minimize bias related to missing data, we used the Multiple Imputation (MI) procedure in SAS to impute missing data for all 1,844 mothers. Although multiple imputation is a valuable strategy for handling missing data with longitudinal data, imputing data that is not missing at random can produce biased estimates of coefficients and standard errors (Allison, 2002). Because mothers who attrited in the Fragile Families Study are not missing at random, we take a conservative approach to data imputation by imputing for mothers who participated in at least two follow-up waves only.

Table 1 provides detailed information on the characteristics of mothers who left the sample or had missing data. Mothers who missed two of the three follow-up interviews (sample 2) were more likely to be Latinas and immigrants. In addition, their children were more likely to be low birth weight. Mothers who did not maintain full-time custody of their children (sample 3) were more likely to be living alone at birth and more likely to be African Americans. Their children were less likely to be first born and more likely to be low birth weight. Mothers with missing data and mothers who did not participate in one of the follow-up interviews (samples 4 and 5) are someone different from mothers in the original sample but in off-setting directions. For example, mothers with missing data are more likely to be immigrants, whereas mothers who missed a complete survey are less likely to be immigrants. Column 6 reports information on mothers with complete information and column 7 reports information on our analytical sample after imputation. As intended, the final sample is much closer than sample 6 to the original sample in column 1. We should note that although multiple imputation corrects for attrition and missing data due to observed characteristics, it does not correct for unobserved characteristics.

Measures

Family structure transitions—We created three sets of mutually exclusive time-varying dummy variables to examine the impact of family structure transitions on maternal parenting stress. The first set of dummy variables indicated whether a mother experienced a family structure transition with the child's biological father or with a nonbiological, social father between Waves 1 and 2. Mothers in residential relationships with biological fathers at Wave 1 could exit a marriage, exit a cohabiting relationship, experience two transitions (exit a residential relationship with the biological father and enter a residential relationship with a social father), or remain in a residential relationship. Note that our decision to combine stably cohabiting and stably married mothers is based on preliminary analyses suggesting that the two groups of mothers report similar levels of parenting stress over time. Mothers who were in nonresidential relationships at Wave 1 could enter a residential relationship with the biological father, enter a residential relationship with a social father, or remain nonresidential. Among nonresidential mothers, we were unable to account for those who experienced two transitions. In addition, cell sizes were not large enough to distinguish between mothers who entered cohabiting versus marital relationships with social fathers.

These two groups, therefore, were also collapsed for mothers entering relationships with biological fathers. We then created the same set of dummy variables to measure transitions between Waves 2 and 3 and between Waves 3 and 4. It is important to note that once a mother experienced one or two transitions between Waves 1 and 2 or between Waves 2 and 3, she could not be categorized as experiencing transitions at a later time. Thus, an “Other” variable was created to capture mothers who experienced transitions in previous observation periods. Descriptive statistics for these transitions and all other study variables are presented in Table 2.

Maternal parenting stress—Maternal parenting stress was measured at Waves 2, 3, and 4. At each wave, mothers indicated agreement (0 = *strongly disagree* to 3 = *strongly agree*) with the following four statements: “Being a parent is harder than I thought it would be,” “I feel trapped by my responsibilities as a parent,” “I find that taking care of my child(ren) is much more work than pleasure,” and “I often feel tired, worn out, or exhausted from raising a family.” The sum of the four items served as the final scale (Wave 2, $\alpha = .61$; Wave 3, $\alpha = .63$; Wave 4, $\alpha = .66$).

Maternal socioeconomic resources—For all maternal resources, we assess posttransition resources with identical measures at Waves 2, 3, and 4. When possible, we also use this same measure to assess maternal pretransition resources at Wave 1.

At each wave, *socioeconomic status* was assessed by combining mother-reported household size and annual family income in an income to needs ratio. This ratio was then compared to the federal poverty line to create three markers of family economic status: dummy variables for at or below 100 percent of the federal poverty line, 100 – 200 percent of the federal poverty line, and above 200 percent of the federal poverty line. *Material hardship* was measured at Wave 1 by asking mothers how much money (0 = *some*, 1 = *just enough*, 2 = *not enough*) they typically have leftover at the end of the month. At Waves 2, 3, and 4, a more comprehensive set of questions was used to assess hardship. A dummy variable was created such that mothers received a one if any of the following occurred during the previous observation period: they received free food; they were unable to pay full amount of rent or mortgage; they had gas or electricity shut off; someone in their home needed medical care but could not afford it. At Wave 1, mothers reported their level of *education* (1 = *less than high school*, 2 = *high school or GED*, 3 = *some college*, 4 = *college or post-graduate degree*). Mothers reported their *weekly hours of employment* at current or most recent job in Wave 1. At follow-up waves, hours of employment was based on current employment only.

Maternal social resources—At each wave, mothers were asked how often they *attended religious services* (0 = *never*, 1 = *hardly ever*, 2 = *several times a year*, 3 = *several times a month*, 4 = *once a week*). *Family support* was measured at each wave by asking mothers whether (0 = *no*, 1 = *yes*) they could count on a family member to loan them \$200, provide a place to live, and help with babysitting. Items were summed to create the final scale (Wave 1, $\alpha = .75$; Wave 2, $\alpha = .73$; Wave 3, $\alpha = .72$; Wave 4, $\alpha = .74$). At Wave 1, *quality of relationship with biological father* was assessed by asking mothers how often (0 = *never*, 1 = *sometimes*, 2 = *often*) they disagreed with the biological father about money, spending time together, sex, pregnancy, alcohol or drug use, and being faithful while they were romantically involved. The sum of the six items served as the final scale ($\alpha = .63$). At Waves 2, 3, and 4, mothers rated the overall quality of their current relationship with the biological father (0 = *poor* to 4 = *excellent*).

Maternal health resources—Because a measure of depression was not available at Wave 1, we used mothers’ reports of their parents’ psychological problems to indicate a family history of *mental health problems*. Mothers were asked whether either biological

parent suffered from depression or anxiety (0 = *no*, 1 = *yes*). In Waves 2, 3, and 4, depression was measured using the Composite International Diagnostic Interview Short Form (Kessler et al., 1998). Self-reported *physical health* was measured at each wave (0 = *poor* to 4 = *great*). *Problems with drinking or drugs* was measured at each wave by asking mothers whether they were treated for alcohol or drug abuse or if drinking or drugs interfered with work or relationships (0 = *no*, 1 = *yes*).

Controls—This study also controlled for maternal age in years at baseline, race/ethnicity (dummy variables for African American, Latino/a, White, and Other), immigrant status, parity (1 = *first born*), number of children living in the household at each wave, child gender, and child low birth weight.

Analyses

The data analysis for the parenting stress models proceeded in three general steps. First, maternal parenting stress was regressed on the time-varying family structure transition variables and the control variables to gauge associations between various family structure transitions and maternal parenting stress net of the demographic characteristics. Multilevel modeling allows us to examine associations between transitions and parenting stress at the three time points simultaneously. Second, the pretransition resources were added to this base model followed by the posttransition resources to assess the extent to which these resources accounted for the transition effects. Third, we removed the posttransition resources and added interactions terms between family structure transitions and maternal education. Any significant interaction term would indicate that education moderated the association between that family structure transition and maternal parenting stress. These models were run with stably coresident with the biological father as the reference group and then stably living alone as the reference group.

The parenting stress models were estimated using HLM, Version 6 (Raudenbush & Bryk, 2002). This modeling strategy was appropriate for the analysis because parenting stress was measured at multiple time points and the observations were not independent. HLM compensates for the clustering of observations by estimating a single model that describes data at two levels: within individual (Level 1) and between individual (Level 2). The Level-1 model, which summarizes the observed pattern of maternal parenting stress across measurement occasions into a functional relationship with time, can be specified as follows:

$$Y_{it} = \pi_{0i} + \pi_{1i}a_{it} + e_{it}$$

where Y_{it} represents parenting stress for the i th mother at time t , a_{it} is time at each measurement occasion for the i th mother, π_{0i} is the intercept of the underlying trajectory for the i th mother, π_{1i} is the slope of the underlying trajectory for the i th mother, and e_{it} represents error for the i th mother at time t .

To examine the effect of covariates that vary temporally (in this case, family structure transitions and posttransition maternal resources), time-varying variables can be added to the Level-1 model.

$$Y_{it} = \pi_{0i} + \pi_{1i}a_{1it} + \pi_{2i}a_{2it} + e_{it}$$

. The addition of the “ $\pi_{2i}a_{2it}$ ” term represents the effect of the time-varying variable on parenting stress at time t for the i th mother. As discussed, HLM allows for examination of associations at the three time points simultaneously.

The Level-2 model, which allows the random intercepts (π_{0i}) and slopes (π_{1i}) to be a function of variables that change across individuals but not across time, can be specified as follows:

$$\begin{aligned}\pi_{0i} &= \beta_{00} + \beta_{01}X_{1i} + r_{0i} \\ \pi_{1i} &= \beta_{10} + \beta_{11}X_{1i} + r_{1i}\end{aligned}$$

In this study, the X s represent the demographic characteristics and pretransition maternal resources only.

Results

Family Structure Transitions

Before turning to the multilevel analyses that address the three research questions, we describe the family structure transitions that mothers undergo during the first five years of their children's lives. Approximately fifty percent of mothers experienced no family structure transition between Waves 1 and 4. Thirty-six percent remained in stably coresiding relationships and thirteen percent lived alone over the five-year period. Among mothers who coresided with their child's biological father at birth, four percent of mothers divorced at some point during their child's first five years of life, fifteen percent exited a cohabiting relationship, and four percent both exited a coresidential relationship with the biological father and then entered a coresidential relationship with a social father during a one or two-year observation period. Among mothers who were not coresident at their child's birth, sixteen percent entered a coresidential relationship with the biological father and ten percent entered a coresidential relationship with a social father. Overall, these patterns demonstrate that a substantial number of mothers experienced a family structure transition during their child's first five years of life. The following sets of analyses explored the linkages between these transitions and maternal parenting stress.

Family Structure Transitions and Maternal Parenting Stress

The first goal of the study was to investigate the association between family structure transitions and maternal parenting stress. Table 3 presents the results of multilevel models predicting parenting stress. Each model was run with stably coresiding with the biological father as the reference group and then stably living alone as the reference group. For mothers who coresided with the biological father at Wave 1, we focus on results from models in which stably coresiding served as the reference group (i.e., Models 1a, 2a, and 3a). For mothers who were single at Wave 1, we focus on results from models in which stably living alone served as the reference group (i.e., Models 1b, 2b, and 3b).

In Model 1a, mothers who divorced their child's biological father reported higher levels of parenting stress than mothers who remained in stable coresidential relationships after accounting for the demographic characteristics ($b = .26, p < .10$). In addition, mothers who exited a cohabiting relationship with the biological father ($b = .30, p < .01$) or made two transitions during an observation period (i.e., exited a coresidential relationship with a biological father and then entered a coresidential relationship with a social father; $b = .54, p < .01$) reported higher levels of parenting stress than mothers in stable coresidential relationships net of the control variables. Post-hoc comparisons indicated that the coefficient for exit marriage was significantly different from that of exit cohabitation and that the coefficients for these single transitions were significantly different from the coefficient for two transitions.

In Model 1b, mothers who moved in with a biological father reported lower levels of parenting stress than those who stably lived alone ($b = -.29, p < .01$). In contrast, mothers who moved in with a social father and those who stably lived alone perceived similar levels of parenting stress. The coefficients for enter coresidence with a biological father and enter coresidence with a social father were significantly different from each other. (Note, however, that mothers who moved in with a social father reported significantly higher levels of parenting stress than those in stable coresidential relationship.) Finally, mothers who stably lived alone reported higher levels of parenting stress than mothers who stably coresided with the biological father.

Pretransition and Posttransition Maternal Resources

Our second goal was to examine the extent to which pretransition and posttransition resources account for associations between the family structure transitions and parenting stress. Adding the pretransition socioeconomic, social, and health resources (see Model 2a in Table 2) reduced the coefficients for exit marriage, exit cohabitation, and two transitions by about twenty percent, thirty percent, and twenty percent respectively. The coefficients for exit cohabitation and two transitions, however, remained statistically significant. In addition, the coefficients for exit marriage and exit cohabitation were not significantly different from one another after the inclusion of pretransition resources. In Model 2b, adding the pretransition resources did not reduce the coefficients for enter coresidence with a biological or social father, and the coefficients remained significantly different from one another.

In Models 3a and 3b, we added the posttransition resources to examine whether posttransition socioeconomic, social, and health resources explained associations between the family structure transitions and maternal parenting stress, controlling for pretransition resources. After adding the posttransition resources, the coefficients for each family structure transition became substantially smaller and were no longer statistically significant, with the exception of enter coresidence with the biological father which was marginally significant in Model 3b. Note that posttransition resources had a much larger effect on the transition coefficients than pretransition resources.

We also examined the socioeconomic, social, and health resources separately to determine the explanatory power of each set of resources (results not shown). Among the posttransition maternal resources, social resources, especially mothers' current relationship with the biological father, accounted for most (about 85%) of the reduction in the family structure transition coefficients, and there was little overlap among the three sets of resources. This finding underscores the importance of the parental relationship *after* the transition for maternal parenting stress. Posttransition socioeconomic and health resources each explained a small portion of the association between the family structure transitions and parenting stress. The same pattern was revealed when examining the explanatory power of pretransition socioeconomic, social, and health resources. In other words, social resources—both pretransition and posttransition resources—accounted for most of the reduction in the family structure coefficients with posttransition resources being the more important factor.

Family Structure Transitions and Parenting Stress by Level of Education

The third goal was to investigate whether linkages between family structure transitions and parenting stress depend on maternal education. In Table 4, interacting maternal education with the family structure transitions revealed that education moderated the association between exiting a marriage and parenting stress ($b = -.67, p < .05$) and between exiting a cohabitation and parenting stress ($b = -.37, p < .05$). Interpreting these interactions in separate models for more and less educated mothers indicated that the negative impact of exiting a marital or cohabiting relationship was significant for mothers with a high school

degree or less but not for mothers with some or more college. The interaction between two transitions and maternal education was not significant, but this was likely due to the small number of college educated mothers who undergo two transitions.

In Model 2, the interaction between entering coresidence with a social father and maternal education was marginally significant ($b = -.42, p < .10$). Highly educated mothers who entered a coresidential relationship with a social father reported lower levels of parenting stress than those who remained living alone. In contrast, this transition was not related to parenting stress among less educated mothers. Although the interaction between maternal education and entering a coresidential relationship with the biological father was not significant when stably living alone served as the reference group, this interaction was significant when the reference was stably coresiding with the biological father ($b = -.77, p < .001$). As before, we found that this transition was related to parenting stress for mothers with lower levels of education only. Additionally, maternal education significantly moderated the association between stably coresiding with the biological father (or stably living alone) and parenting stress ($b = -.54, p < .01$). Less educated mothers who stably lived alone reported higher levels of parenting stress than their counterparts who remained in stable coresidential relationships, but this was not true for mothers with more education.

Discussion

A large body of literature has investigated the impact of various marital statuses on parent and child well-being. We are only beginning to understand, however, the consequences of transitions and trajectories of family structures, especially those involving alternative family forms. Given the growing rate of family instability and nonmarital childbearing, gaining a better understanding of these various transitions and their effects on families is an important objective. This paper attempts to address the gap in the literature by investigating the associations between various family structure transitions and maternal parenting stress, the role of pretransition and posttransition resources in explaining these associations, and variation by maternal education.

First, we examined whether the family structure transitions of mothers who were single or coresiding with the biological father at the birth of their child influenced mothers' reports of parenting stress. As expected, mothers who divorced or ended a cohabiting relationship with a biological father during the first five years of their child's life experienced an increase in parenting stress in the year after the transition. Interestingly, our findings indicate that these two forms of union dissolution are similarly related to parenting stress after accounting for pretransition resources, suggesting that mothers' perceptions of parenting-related stress following a separation were not contingent on the couples' initial level of commitment. For mothers who were single at the birth of their child, entering into a coresidential relationship with a biological father, but not a social father, is associated with lower levels of parenting stress. This finding is consistent with research suggesting that women acquire fewer resources related to parenting when they move in with a social father compared to a biological father (Hofferth & Anderson, 2003).

We also find that not only the type of family structure transition matters but also the *number* of transitions. Mothers who make two transitions in a one- or two-year period report almost twice as much parenting stress as those who make one transition out of a coresidential relationship. The recent work of Cavanagh and colleagues (2006, 2006) as well as Osborne and colleagues (2007, 2008) demonstrates that the number of changes in a resident parent's marital trajectory is an important predictor of child and adolescent development. The results of the present study suggest that multiple family structure transitions may also disrupt the well-being of parents.

Second, we examined the extent to which pretransition and posttransition maternal resources account for the associations between family structure transitions and parenting stress. We find that the socioeconomic, social, and health resources that mothers have prior to exiting a relationship or making two transitions explain some (between 20 and 30 percent) of the negative associations between these transitions and maternal parenting stress. Posttransition resources, however, especially mothers' relationship with the biological father, account for a much larger portion of the higher levels of parenting stress reported by mothers in unstable living arrangements. When mothers separate from biological fathers or make two transitions within a short period of time, subsequent decreases in the quality of their relationship with the biological father negatively influences mothers' perceptions of the demands associated with parenting.

As discussed, previous research has found that pretransition resources are key factors in explaining the effects of union transitions (Gotlib & McCabe, 1990). The results of this study, however, suggest that differences in levels of parenting stress between mothers who have stable versus unstable coresidential relationships are also related to posttransition changes in resources. In particular, we find that maintaining a positive relationship with the biological father is a key predictor of mothers' parenting stress. These findings contribute to our understanding of how trajectories of family structure impact the well-being of parents and the role of selection and causation in accounting for the negative effects of instability on families.

Third, we examined whether maternal education moderates the associations between family structure transitions and parenting stress. We find that links between transitions and parenting stress depend on mothers' levels of education and that changes in family structure are not automatically associated with parental stress. Less educated mothers who exit a marital or cohabiting relationship with a biological father report higher levels of stress than their counterparts in stably coresiding relationships. In contrast, highly educated mothers who undergo family structure transitions never perceive significant increases in parenting-related stress. In fact, mothers with higher levels of education report decreases in parenting stress when they move in with either a biological or social father. These findings are consistent with previous research (Beck et al., 2008) and suggest that highly educated mothers are better able to cope with union disruption and are more likely to gain from the formation of a new union. The education difference could be due to differences in access to resources. For example, we find that educated mothers who undergo transitions have higher quality relationships with biological fathers than their less educated counterparts. These mothers may receive more support from their children's fathers (financial or other) that reduces parenting-related stress. Differences may also be related to the extent to which mothers have control over the timing of transitions and the conditions under which they occur. Educated mothers may be in a better position to pursue child support from nonresident fathers, and they may be better able to delay forming new partnerships until they find a suitable mate.

Despite its contributions to our understanding of parenting stress in the context of family instability, the study is not without limitations. First, because we are not able to control for all possible pretransition resources (e.g., mothers' mental health) that may affect transitions as well as parenting stress, we cannot rule out the possibility that selection is responsible for increases in maternal parenting stress. Our interaction findings, however, are inconsistent with a strict selection argument, which would predict negative effects for all education groups. Future research investigating a wider range of preexisting maternal characteristics and resources that may be related to both transitions and parenting stress is needed to provide support for our findings. Second, by following mothers over time, we lose some of the original sample. But because mothers who left the study were less advantaged and

reported higher levels of stress than mothers in the analytic sample, our findings likely *underestimate* associations between family structure transitions and parenting stress. Third, our parenting stress measure may not adequately capture all the ways in which mothers experience stress in their roles as parents. For example, the research of Crnic and colleagues (1995, 2005), in particular, has demonstrated that daily hassles related to parenting predict poor parenting and developmental problems. Thus, it will be important for future research to replicate the findings in this study with a more comprehensive set of parenting stress items. Finally, our sample is limited to births that occur in large U.S. cities and therefore these results may not be generalizable to births in other contexts.

This study took an important first step in examining the impact of various forms of family instability on maternal parenting stress, a key predictor of parent and child outcomes. When mothers with low levels of education separate from their young child's biological father or repartner with a social father, they experience losses in social resources that place them at risk for perceiving high levels of stress as parents. Finding ways to minimize this risk, perhaps by improving parent relationships following separation as is suggested here, should be of utmost importance to both researchers and policy makers.

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Table 1

Selected Characteristics of Various Fragile Families Samples

	Sample 1 ^a (n = 4,898)	Sample 2 ^b (n = 665)	Sample 3 ^c (n = 149)	Sample 4 ^d (n = 1,246)	Sample 5 ^e (n = 598)	Sample 6 ^f (n = 2,332)	Sample 7 ^g (n = 4,176)
Baseline characteristics							
Relationship status							
Married to biological father (%)	24.23	20.75	5.37	20.39	21.40	28.47	25.05
Cohabiting with biological father (%)	36.42	39.10	41.61	37.48	38.29	34.43	35.90
Living alone (%)	39.34	40.15	53.02	42.13	40.30	37.09	39.06
Maternal age	25.28	25.83	25.60	24.99	25.33	25.27	25.20
Maternal race/ethnicity							
African American (%)	47.62	43.44	58.78	49.27	44.71	48.33	48.02
Latino/a (%)	27.34	34.84	21.62	30.73	29.75	22.94	26.28
White (%)	21.08	15.54	16.89	16.45	21.01	25.21	22.03
Other race/ethnicity (%)	3.97	6.18	2.70	3.55	4.54	3.52	3.67
Maternal immigrant status (%)	17.03	29.11	5.37	17.69	20.64	12.65	15.28
Maternal education ^h (%)	34.99	28.42	13.42	28.89	31.77	41.38	36.28
Child gender (% male)	52.45	52.03	55.03	50.88	54.01	52.87	52.44
First born (%)	38.28	34.39	19.73	36.41	39.53	40.39	39.12
Child low birth weight (%)	10.74	14.14	26.17	8.51	11.54	10.51	10.06
Number of children in household	1.26	1.23	1.59	1.33	1.29	1.21	1.25

^aNote: Original Fragile Families Study sample.

^bMothers missing on parenting stress measure for two or three follow-up waves.

^cMothers who lived with focal child half time or less during one or more waves.

^dMothers missing information on one or more study variables after excluding those who did not meet sample criteria.

^eMothers who did not participate in one or more follow-up waves after excluding those who did not meet sample criteria.

^fComplete case sample.

^gAnalytic sample.

^h0 = high school degree or less; 1 = some college or more.

Table 2

Descriptive Statistics for Study Variables (N =4,176)

Variables	Wave 1		Wave 2		Wave 3		Wave 4	
	Mean/ Percent	SD	Mean/ Percent	SD	Mean/ Percent	SD	Mean/ Percent	SD
Maternal parenting stress ^a			4.72	2.68	5.03	2.68	4.78	2.74
Relationship transitions								
Coreisident at birth								
Exit marriage with bio father			.96		1.36		1.44	
Exit cohabitation with bio father			9.08		4.05		2.13	
Two transitions ^b			1.10		1.32		1.27	
Stably coreside with bio father			49.81		36.79		28.57	
Nonresident at birth								
Enter coresidence with bio father			9.96		3.83		2.32	
Enter coresidence with social father			3.38		3.66		3.26	
Stably living alone			25.72		18.22		12.64	
Other transitions ^c			.00		30.77		48.37	
Socioeconomic resources								
100% or below federal poverty line	34.96		42.98		41.95		43.46	
101 – 200% of federal poverty line	25.81		25.05		24.76		24.98	
Above 200% of federal poverty line	39.22		31.97		33.29		31.56	
Education ^d	36.28							
Material hardship ^e	.14	.35	28.20		33.57		37.49	
Employment ^f	32.48	13.67	19.02	19.83	19.83	20.63	20.75	20.13
Social resources								
Family support ^g	2.75	.68	2.56	.85	2.54	.86	2.52	.87
Relationship with bio father ^h	2.57	2.30	2.45	1.57	2.32	1.65	2.25	1.80
Attendance at religious services ⁱ	2.06	1.37	2.39	1.42	2.63	1.36	2.62	1.38
Health resources								
Maternal grandmother's mental health ^j								31.02

Variables	Wave 1		Wave 2		Wave 3		Wave 4	
	Mean/ Percent	SD	Mean/ Percent	SD	Mean/ Percent	SD	Mean/ Percent	SD
Maternal grandfather's mental health ^j	18.00							
Mental health ^k			15.82		20.15		17.12	
Physical health ^l	2.91	.95	2.78	1.05	2.75	1.04	2.62	1.03
Problems with alcohol or drugs ^m	4.37		1.30		1.47		1.63	
Demographic control variables								
Maternal age at baseline	25.20	6.05						
Maternal race/ethnicity								
African American	48.02							
Latino/a	26.28							
White	22.03							
Other race/ethnicity	3.67							
Maternal immigrant status	15.28							
Child gender (male)	52.44							
First born	39.12							
Child low birth weight	10.06							
Number of children in household	1.25	1.29	2.30	1.32	2.33	1.32	2.62	1.38

^aRanges from 0 to 12 with high scores indicating high levels of parenting stress.

^bMothers who exit a coresidential relationship with the biological father and then enter a coresidential relationship with a social father within an observation period.

^cMothers who experienced transitions in previous observation periods.

^d0 = high school degree or less; 1 = some college or more.

^eAt Wave 1, amount of money typically leftover at the end of the month (0 = some, 1 = just enough, 2 = not enough). At Waves 2, 3, and 4, 1 = Mother received free food, did not pay full amount of rent or mortgage, had gas or electricity shut off, or had someone in their home who needed medical care but could not afford it.

^fAt Wave 1, weekly hours of employment at current or most recent job. At Waves 2, 3, and 4, weekly hours of employment at current job.

^gRanges from 0 to 3 with high scores indicating high levels of support.

^hAt Wave 1, ranges from 0 to 12 with high scores indicating high levels of conflict between mother and biological father while they were romantically involved. At Waves 2, 3, and 4, mothers reported quality of current relationship with biological father (0 = poor to 4 = excellent).

ⁱ0 = never to 4 = once a week or more.

^jAt Wave 1, mothers reported whether her biological parents had a problem with depression or anxiety (0 = no, 1 = yes).

^kAt Waves 2, 3, and 4, 1 = Mother met diagnostic criteria for Major Depressive Episode.

^lSelf-rated overall health: 0 = poor health to 4 = great health.

^m0 = no, 1 = yes.

Table 3
Selected Results of Multilevel Models Predicting Parenting Stress by Relationship Transitions (N =4,176)

	Model 1a		Model 2a		Model 3a		Model 1b		Model 2b		Model 3b	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Coresiding at birth												
Exit marriage	.26 [†]	.15	.20	.16	.001	.15	-.17	.17	-.08	.17	-.13	.17
Exit cohabitation	.30 ^{**}	.10	.20 [*]	.10	.07	.10	-.12	.11	-.08	.11	-.06	.11
Two transitions ^a	.54 ^{**}	.19	.43 [*]	.19	.29	.19	.11	.21	.15	.20	.16	.20
Stably coreside	---	---	---	---	---	---	-.42 ^{***}	.09	-.28 ^{**}	.09	-.13	.09
Living alone at birth												
Enter coresidence with biological father	.13	.10	-.01	.10	-.07	.10	-.29 ^{**}	.10	-.29 ^{**}	.10	-.20 [†]	.11
Enter coresidence with social father	.30 [*]	.10	.14	.13	.02	.13	-.12	.12	-.14	.12	-.11	.12
Stably live alone	.42 ^{***}	.09	.28 ^{**}	.09	.13	.09	---	---	---	---	---	---

Note: Unstandardized coefficients presented. Models control for maternal age, race, immigrant status, child gender, low birth weight, parity, number of children living in household at each wave, and mothers who make transitions in more than one observation period (omitted from table). Models 2a and 2b include pretransition resources. Models 3a and 3b include pretransition and posttransition resources.

^aMothers who exit coresidence with the biological father and then enter coresidence with a social father.

[†] $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 4

Selected Results of Multilevel Models Predicting Parenting Stress by Interactions between Relationship Transitions and Maternal Education (N = 4,176)

	Model 1		Model 2	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Relationship transitions × maternal education ^a				
Coresiding at birth				
Exit marriage × education	-.67*	.31	-.13	.34
Exit cohabitation × education	-.37*	.19	.17	.22
Two transitions ^b × education	-.41	.43	.13	.45
Stably coreside × education	---	---	.54**	.18
Living alone at birth				
Enter coresidence with bio × education	-.77***	.21	-.23	.22
Enter coresidence with social × education	-.97***	.27	-.42 [†]	.27
Stably live alone × education	-.54**	.18	---	---

Note: Unstandardized coefficients presented. Models include relationship transitions, maternal education demographic characteristics, and pretransition maternal resources (omitted from table). The reference group is stably coresiding for Model 1 and stably living alone for Model 2.

^a 0 = high school degree or less; 1 = some college or more.

^b Mothers who exit coresidence with the biological father and then enter coresidence with a social father.

[†] $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.