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## Fathers' Participation in Parenting and Maternal Parenting Stress: Variation by Relationship Status

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### Abstract

The growing diversity in mother-father relationship status has led to a debate over the role of fathers in parenting. Little is known, however, about how fathers' participation in parenting is linked to maternal well-being across different mother-father relationship statuses. Using data from the Fragile Families and Child Wellbeing Study ( $N = 2,062$ ), fixed-effects as well as random-effects regression models show that overall fathers' engagement with children and sharing in child-related chores are negatively related to maternal parenting stress. Fathers' cooperative coparenting is negatively related to maternal parenting stress only in the random-effects model, suggesting that the association is driven by selection factors. There is little variation in these associations by mother-father relationship status, once selection factors are controlled for. These findings extend support for the current cultural emphasis on benefits of fathers' active participation in parenting for mothers and children even after the mother-father relationship dissolved.

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Mother-father relationship status is increasingly varied in today's U.S. society (Cherlin, 2010). Fewer parents are married and more parents are linked through either cohabiting or dating relationships. Still other parents are no longer romantically involved with one another: they are either separated or divorced and unpartnered or repartnered. This diversity in the mother-father relationship has led to scientific and public debates over the role of fathers in parenting, as fathers' ties to children heavily depend on their relationship with the mother (Lamb, 2000). Researchers have emphasized the importance of fathers' participation in parenting, regardless of whether fathers live with or away from the child, because it is beneficial for the well-being of children (King & Sobolewski, 2006; Pleck & Masciadrelli, 2004).

How fathers' participation in parenting is related to maternal well-being is less clear, however. Researchers assume that fathers' participation in parenting is good for maternal well-being (Pleck & Masciadrelli, 2004), but empirical examination of this association is scant. In particular, despite the emphasis on promoting fathers' active coparenting after mother-father relationship dissolution (Carlson, McLanahan, & Brooks-Gunn, 2008), we know little about how it is related to the well-being of divorced mothers (in this paper, divorced mothers include mothers whose romantic partnership with the father of their

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children was dissolved regardless of whether they had been married). In addition, although current public policies encourage a divorced father's participation in parenting more than a stepfather's (Mason, Harrison-Jay, Svare, & Wolfinger, 2002), how the child's biological father's participation is related to repartnered mothers' well-being is unclear.

Using data from the Fragile Families and Child Wellbeing Study (FFCWS), we assess how biological fathers' participation in parenting is related to maternal parenting stress. "Involved fathering" is now the norm characterizing ideal fatherhood in the United States (Lamb, 2000) even among nonresident fathers (Edin & Nelson, 2013). Building on fatherhood research (e.g., Pleck & Masciadrelli, 2004), we examine three distinct ways in which fathers participate in parenting, including fathers' engagement with their children, sharing child-related chores with mothers, and cooperative coparenting with mothers. We pay special attention to variation by mother-father relationship status, including married, cohabiting, dating, divorced, and repartnered. The present analysis provides new insights into understanding the potential benefits of promoting fathers' participation in parenting for the well-being of mothers and whether such benefits depend on the mother-father relationship status.

## Fathers' Parenting Participation and Maternal Parenting Stress

A dominant approach to parenting stress is role strain theory (Pearlin, 1989). From this perspective, parenting stress is a cognitive appraisal of the extent to which parents perceive difficulties in fulfilling the requirements and expectations of the parenting role due to inadequate resources to cope with such demands (Deater-Deckard, 2004). Parenting stress encompasses several dimensions, including feeling overwhelmed by the level of responsibilities; feeling trapped; and strains in the parent-child relationship (Abidin, 1995). Because maternal parenting stress is negatively associated with children's developmental competence (Deater-Deckard, 2004), it is critical to decipher the factors that influence maternal parenting stress.

Family systems theory (Cox & Paley, 1997) emphasizes the interdependence of family relationships and their influences on individual family members' outcomes. According to the theory, what fathers do (or do not do) has implications for maternal parenting stress. As fathers' participation in parenting has become the norm (Lamb, 2000), whether and how fathers participate may be an increasingly salient factor shaping maternal parenting stress. Consistent with prior fatherhood research (Pleck & Masciadrelli, 2004), this paper examines three ways in which fathers participate in parenting that could in turn shape maternal parenting stress: (a) engagement with the child; (b) sharing in child-related chores with the mother; and (c) cooperative coparenting with the mother.

*Fathers' engagement* with children refers to a father's direct interaction with his child through shared activities, such as playing, reading together, and talking with the child (Pleck & Masciadrelli, 2004). The current U.S. parenting culture emphasizes the importance of parent-child shared time for the well-being of children (Hays, 1996; Lamb, 2000). Many mothers and fathers believe that spending time with their children by teaching or playing will help their children achieve better developmental skills (Edin & Kefalas, 2005; Hays,

1996). Even though this may be a “fun” part of parenting, pressure to spend time with their children may make mothers stressed and ultimately lower maternal well-being (Nomaguchi, Milkie, & Bianchi, 2005). If fathers pitch in by playing with and teaching their children, it may ease mothers’ psychological pressure to spend more time with their children.

Fathers also can contribute to child care by doing things *for* children but not necessarily *with* them (Pleck & Masciadrelli, 2004). Fatherhood researchers may call it paternal responsibility or fathers’ ensuring that their children are taken care of. Although responsibility involves two types, managerial (e.g., making plans and monitoring arrangements) and performing (e.g., putting the plans and arrangements into effort) tasks, fathers are much more likely than mothers to do performing than managerial tasks (Stueve & Pleck, 2003). *Fathers’ sharing in child-related chores* include shopping for children, transporting children to places they need to go (e.g., daycare or the doctor’s office), and taking care of the child when mothers need to get something done. This form of fathers’ participation may be more beneficial to mothers than direct engagement with children, in part because it is more time-sensitive and immediate in helping mothers juggling multiple responsibilities than fathers’ engagement with children (Williams, 2010).

Another way in which fathers can help mothers in parenting is to provide support by backing up their parenting methods and efforts. *Fathers’ cooperative coparenting* describes the extent to which fathers support the parenting efforts of the mother of their child (Margolin, Gordis, & John, 2001) and work with her effectively in rearing their child (Carlson, McLanahan, & Brooks-Gunn, 2008). Prior research has shown that it is distinct from marital or partner relationship quality (Schoppe-Sullivan et al., 2004). If fathers collaborate with mothers to enact a uniform parenting approach, it would make it easier for mothers to deal with the demands of parenting.

### Variation by Mother-Father Relationship Status

The role strain approach to parenting stress suggests that mothers experience greater stress when available resources do not match with the levels that they *expect* to have to meet the demands of parenting (Deater-Deckard, 2004; Pearlin, 1989). On the basis of this idea, we argue that whether fathers’ participation in parenting relates to mothers’ parenting stress may depend on the extent to which mothers expect such contributions from the father. Of various factors that may shape the levels of mothers’ expectations for fathers’ participation in parenting, we focus on mother-father relationship status.

Family scholars have contended that fatherhood in the U.S. society traditionally has been viewed as a “package” deal that is contingent on a romantic relationship between the father and the child’s mother (Tach, Mincy, & Edin, 2010). The package deal thesis suggests that mothers would expect their romantic partner to play the ideal father role. Qualitative studies indicate that mothers expect their romantic partner, whether they are married to, cohabiting with, or dating him, to show his full attention to their children and to support their parenting (Edin & Kefalas, 2005; Fox, 2009). Among cohabiting couples, McClain (2011) found that fathers’ participation in parenting—measured as engagement with children and cooperative coparenting—was positively related to the odds that the couple gets married. She speculated

that mothers may view fathers' participation in parenting as a barometer of fathers' commitment to the couple relationship. Given these prior findings, we expect that low levels of fathers' engagement, child-related chores, or coparenting cooperation within marriage, cohabitation, or a dating relationship would violate mothers' expectations, and thus would be related to greater parenting stress among mothers.

The package deal thesis also suggests that mothers may not hold the same level of expectations for their ex-spouse/partner to remain participating in parenting. On a practical level, divorced fathers' contributions to the daily demands of parenting are probably often minimal, as nonresident fathers' participation in parenting is typically limited to children's leisure activities (Stewart, 1999). This "Disneyland dad" style of participation may be too narrow and sporadic for mothers to count on it. A qualitative study by Sano, Richards, and Zvonkovic (2008) reported that divorced mothers expected few benefits from a nonresident father's participation for the well-being of their children, because the father knew very little about his children's specific needs. With such low expectations, any forms of fathers' participation in parenting may have negligible effects on parenting stress for mothers who are divorced or separated from the father.

When mothers have a new romantic partner, the package deal thesis suggests, their expectations for their children's biological father to participate in parenting may diminish further. Repartnered mothers may strive to facilitate the relationship between their children and the new partner (Nelson, 2006). Some of them may not welcome their child's biological father's participation to avoid any rivalry or jealousy from the new partner (Edin & Nelson, 2013). Thus, the biological father's engagement with children, child-related chores, or cooperative coparenting may have either no or a positive effect on repartnered mothers' parenting stress.

To date, only a handful of studies examined the link between fathers' participation in parenting and mothers' parenting stress. Existing studies produced inconsistent findings partly because sample characteristics and measures of fathers' participation in parenting varied. Using a scale based on mothers' reports of a various forms of fathers' participation in parenting (e.g., time spent with the child, babysitting, discussing the child with them, and financial support), Kalil, Ziol-Guest, and Coley (2005) found that a decline in fathers' contributions was related to an increase in parenting stress among unmarried teenage mothers in a small sample. The extent to which their findings can be generalized to non-teen, married or cohabiting mothers is unclear.

A few studies examined the link between father engagement, the first dimension of fathers' parenting participation this paper examined, and maternal parenting stress. Harmon and Perry (2011) found no association between the two factors among a sample of mothers who were married to or cohabiting with the father of a focal child from the three-year interview of the FFCWS. Similarly, Jackson (1999) found no association between mothers' perception of the frequency of fathers' interactions with their children and mothers' parenting stress among low-income African American single mothers in New York City.

Little research has examined the association between fathers' sharing in child-related chores, the second dimension of fathers' parenting participation examined in the present analysis, and maternal parenting stress. Coley and Schindler (2008) included items that may capture this aspect of father responsibility in a scale of fathers' participation in parenting. Using a longitudinal sample of low-income mothers in the Three-City Study, they found that fathers' participation in parenting, measured as a scale based on mothers' perceptions of fathers' taking responsibility for routine child care and having an emotional connection with their child, was related to less maternal stress. Whether practical help in routine child care or emotional connection with children matters more for maternal parenting stress is unclear.

For fathers' cooperative coparenting, the third dimension of fathers' parenting participation examined in this paper, two studies found negative associations with maternal parenting stress. One study used a small sample of married parents (Margolin, Gordis, & John, 2001), and the other examined married or cohabiting mothers in the three-year interview of the FFCWS (Harmon & Perry, 2011). Both studies were cross-sectional; and thus the possibility of a spurious relationship—i.e., unobserved factors might be related to both fathers' cooperative coparenting and mothers' parenting stress—was not examined.

Prior research focused on either resident or nonresident fathers, but not both, and thus it is unclear whether there is variation by mother-father relationship status. One exception was Coley and Schindler (2008) who found little variation by residential status. But their study did not distinguish repartnered mothers from divorced mothers who stayed single. Because the package deal thesis suggests that mothers' expectations for biological fathers' involvement in parenting vary depending on whether they have a new romantic partner, it is important to differentiate between these two groups.

## The Present Study

On the basis of foregoing discussion, we expect that fathers' engagement with children, sharing in child-related chores, and cooperative coparenting are negatively related to parenting stress for mothers who are involved in a romantic relationship with the father with little variation across mothers who are married to, cohabiting with, or dating the father of their child (H1). In contrast, for mothers whose romantic relationship with the father dissolved, fathers' participation in parenting may have no appreciable effects on parenting stress (H2). For repartnered mothers, the biological father's engagement with their children, child-related chores, and cooperative coparenting are not related, or positively related, to parenting stress (H3).

We controlled for factors that prior research suggests are related to both fathers' participation in parenting and maternal parenting stress. Father's unemployment, incarceration history, and substance use problems are related to less participation by fathers (Ryan, Kalil, & Ziolo-Guest, 2008) and arguably more maternal parenting stress (Sano, Richards, & Zvonkovic, 2008). Mothers' characteristics such as socioeconomic status (education, employment, and poverty), race/ethnicity, age, and physical health are associated with fathers' participation (Raley, Bianchi, & Wang, 2012) and maternal stress (Nomaguchi & Brown, 2011). Child's difficult temperament and health issues are related to less

participation by fathers (McBride, Schoppe, & Rane, 2002) and greater maternal stress (Mulsow et al., 2002). The number of children is negatively associated with fathers' participation (Hofferth & Anderson, 2003) and positively associated with maternal stress (Nomaguchi & Brown, 2011). Fathers are more likely to be involved with boys than girls (Hofferth & Anderson, 2003), whereas mothers with boys are more likely than mothers with girls to report greater parenting stress (McBride et al., 2002).

Additionally, we controlled for unobserved factors that are related to both fathers' participation in parenting and maternal parenting stress using fixed-effects models to address the question as to whether any association between the two factors is solely driven by selection bias.

## METHOD

### Sample

Data for this study came mainly from Waves 2, 3, and 4 (i.e., ages 1, 3, and 5) of the Fragile Families and Child Wellbeing Study (FFCWS). Fielded between 1998 and 2000, the FFCWS is a stratified, multistage, probability sample of 4,898 children (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Mothers were selected from 75 hospitals in 20 cities with populations of at least 200,000. The baseline interviews were conducted in the hospital soon after the child's birth. Wave 2 (W2) interviews were conducted by telephone when the child was one year old, and about 90% of the mothers were re-interviewed. Wave 3 (W3) interviews were conducted when the child was 3 years old and Wave 4 (W4) when the child was 5 years old. The response rates for W3 and W4 were 86.4% and 84.5% respectively.

We used the "national" sample that was based on weighted data from 16 cities ( $n = 3,442$ ). The weighted data produce a representative sample of births that occurred between 1998 and 2000 in 77 cities with populations of 200,000 or more (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Mothers who were living in two cities where several core questions were not asked ( $n = 2,791$ ) and mothers who were not living with the focal child in at least one of the three waves ( $n = 2,767$ ) were excluded. Finally we dropped mothers who failed to report their relationship status with the father ( $n = 2,236$ , 65.0%), who reported that the father had had no contact with the child more than one wave ( $N = 2,209$ , 64.2%). The three waves were pooled, which resulted in  $N = 6,096$  person-years of data.

### Measures

*Maternal parenting stress* was the average of four questions ( $\alpha = .61, .67, .67$  for W2, W3, and W4, respectively), (a) "Being a parent is harder than I thought it would be"; (b) "I feel trapped by my responsibilities as a parent"; (c) "I find that taking care of my child(ren) is much more work than pleasure"; (d) "I often feel tired, worn out, exhausted from raising a family" (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, 4 = *strongly agree*). These four items were derived from the JOBS Child Outcome Survey by Child Trends, Inc. and Abidin's Parent Stress Inventory (Abidin, 1995; Hofferth, Davis-Kean, & Finkelstein, 2014). Our alpha reliability coefficients were comparable to those obtained by Abidin (1995) and Hofferth et al. (2014).

*Mother-father relationship status* was constructed using three questions: (a) “What is your relationship with (father) now? (1 = *married*, 2 = *romantically involved*, 3 = *separated/divorced*, 4 = *just friends*, 5 = *not in any relationships*); (b) “Are you and (father) currently living together?” (1 = *all or most of the time*, 2 = *some of the time*, 3 = *rarely*, 4 = *never*); and (c) “Are you currently involved in a romantic relationship with someone other than (father)?” *Married* included those who were married to the father (reference). *Cohabitation* captured those who were romantically involved and living with the father all or most of the time. *Dating* was defined as those who were romantically involved with the father but did not live with him all or most of the time. *Divorced* included those who were no longer involved with the father romantically (including dissolution of cohabitation), and not having a new romantic partner. *Repartnered* included mothers who were involved in a new romantic relationship (either married, cohabiting, or dating).

*Father engagement* was the average of four questions ( $\alpha = .79$  in W2,  $.84$  in W3, and  $.84$  in W4) that asked mothers how many days a week the father would (a) sing songs or nursery rhymes; (b) read stories; (c) tell stories; or (d) play inside with the child. Responses ranged from 0 to 7 days per week. Fathers who did not see the child in the past month were coded 0. The same measure was used in other studies (Carlson, McLanahan, & Brooks-Gunn, 2008; Ryan, Kalil, & Ziol-Guest, 2008). The FFCWS had fathers’ reports of engagement with their children, too. We examined models using mothers’ perceptions of father engagement and fathers’ self-reports and the findings were similar. We reported results using mothers’ perceptions rather than fathers’ self-reports for a few reasons. All prior research we reviewed earlier used mothers’ reports of fathers’ participation in parenting. Stress research has shown that individuals’ perceptions of a situation rather than objective measures of the situation tend to have stronger influences on their experiences of stressfulness in the given situation (Pearlin, 1989). This idea suggests that the mother’s perception is more likely than the father’s perception to be related to maternal parenting stress. Finally, father reports had more missing data than mother reports. If we used father reports, we would lose an additional 20% of the sample.

*Father sharing in child-related chores* was the average of three questions ( $\alpha = .79$  in W2,  $.83$  in W3, and  $.85$  in W4) that asked mothers how often the father looks after the child when they need to do things, runs errands for them (e.g., picking things up from the store), or takes the child places he/she needs to go (e.g., daycare or the doctor) (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*).

*Father cooperative coparenting* was the mean of six questions ( $\alpha = .86$  in W2,  $.87$  in W3, and  $.88$  in W4), including: (a) “When (father) is with (child), he acts like the father you want for your child”; (b) “You can trust (father) to take good care of (child)”; (c) “He respects the schedules and rules you make for (child)”; (d) “He supports you in the way you want to raise (child)”; (e) “You and (father) talk about problems that come up with raising (child)”; (f) “You can count on (father) for help when you need someone to look after (child) for a few hours” (1 = *rarely true*, 2 = *sometimes true*, 3 = *always true*). The same items have been used in other studies (e.g., Carlson, McLanahan, & Brooks-Gunn, 2008).

Several control variables were included. *Father's unemployment* was a time-varying, dichotomous variable (1 = *not working for pay*). *Father's incarceration history* was three time-varying variables including whether he was currently incarcerated, previously incarcerated, or never incarcerated (reference). *Father's substance use problem* was a time-varying, dichotomous variable where mothers who answered the father had problems such as keeping a job or getting along with family and friends because of alcohol or drug use were assigned 1s. *Child's gender* was a dichotomous variable (1 = *girls*, 0 = *boys*). *Child temperament* was measured at W2 as the average of six questions, including “the child tends to be shy”; “the child often fusses and cries”; “the child gets upset easily”; “the child is very sociable” (reverse coded); “the child reacts strongly when upset”; and “the child is very friendly with a stranger” (reverse coded). Responses ranged from 1 = *least likely* to 5 = *most likely*. *The number of children* under age 18 in the household was a time-varying variable (W2, W3, W4), ranging from 0 to 10. *Child health* was a time-varying, ordered variable (W2, W3, W4) ranging from 1 = *poor* to 5 = *excellent*. *Mother's age* was a continuous variable reported at W1. *Mother's race/ethnicity* was a categorical variable measured at W1 including White (reference), Black, Hispanic, and other race. *Mother's education level* was a categorical variable measured at W1, including less than high school, high school (reference), some college, and college graduate. *Mother's physical health* was a time-varying, ordered variable (W2, W3, W4), ranging from 1 = *poor* to 5 = *excellent*. *Mother's employment hours per week* was also a time-varying variable (W2, W3, W4) where those who were not employed were assigned 0 hours. *Family income-to-poverty ratio* was a FFCWS constructed variable (W2, W3, W4). Extremely high values were recoded to the 95<sup>th</sup> percentile.

### Analytic plan

We began by examining mean differences for all variables by mother-father relationship status. Then, we estimated multivariate models using a pooled time series technique (Allison, 2009). This approach accommodates the variability and change in fathers' participation in parenting, mother-father relationship status, maternal parenting stress and other factors across the three waves. Pooled time series models for longitudinal data permit both random-effects and fixed-effects models. Whereas random-effects models examine between-person variation and permit time-invariant predictors, fixed-effects models focus on within-person variation that controls for unobserved time-invariant individual characteristics that might be related to both fathers' participation and mothers' parenting stress. We tested serial correlation of errors for the same case across different times, a necessary condition for fixed-effects models (Wooldridge, 2002). We used Hausman tests to determine whether the estimates for the association between fathers' participation in parenting and maternal parenting stress in random- versus fixed-effects were significantly different (Allison, 2009). Because father engagement, child-related chores, and cooperative coparenting were highly correlated ( $\rho = .62$  to  $.83$  for the total sample), we examined separate models for each measure of fathers' participation in parenting. For each, two models were estimated. The first model tested the main effects of fathers' participation in parenting on maternal parenting stress. The second model tested the interaction effects between fathers' participation in parenting and mother-father relationship status on maternal parenting stress. A small share of respondents had missing data on some of the variables with the highest



being 18.2%. To deal with missing data, we performed the multiple imputation method described by Allison (2002) using PROC MI in SAS with five imputations.

## RESULTS

Table 1 presents means for the variables in the analysis for the total sample and by mother-father relationship status. The relationship status of the mother and father was 64.6% married, 12.8% cohabiting, 3.2% dating, 12.4% divorced, and 7.1% repartnered. The mean maternal age at birth was 27.5 years and ranged from 15 to 43. About 25% of mothers finished college, whereas 23% did not have a high school degree. A majority of mothers were racial/ethnic minorities with 41% White, 21% Black, 30% Hispanic, and 8% other race.

Levels of maternal parenting stress varied by mother-father relationship status. On average, cohabiting mothers reported less parenting stress than married mothers, whereas dating mothers did not differ from either married or cohabiting mothers (2.18, 2.13, and 2.19 respectively with a range from 1 to 4). Divorced or repartnered mothers reported more parenting stress (2.27 and 2.34), on average, than married or cohabiting mothers. The difference between divorced and repartnered mothers was significant. Levels of fathers' participation in parenting also differed by the mother-father relationship status. On average, married mothers reported higher levels of father engagement, child-related chores, and cooperative coparenting than other mothers with one exception that there was little difference in fathers' sharing in child-related chores between married and cohabiting mothers. Dating mothers were more likely than divorced or repartnered mothers to report higher scores in all three measures. Repartnered mothers reported the lowest level of fathers' sharing child-related chores, although no differences in father engagement and cooperative coparenting from divorced mothers. In addition, mothers' background characteristics differed significantly by their relationship status with the father. Thus multivariate analyses were necessary to decipher the variation in the association between fathers' participation in parenting and maternal parenting stress by mother-father relationship status.

We began multivariate analyses by testing for serially correlated errors in the main effects regression models (Wooldridge, 2002). The correlation were .52 ( $p < .001$ ) for the model examining father engagement, .54 ( $p < .001$ ) for the model examining fathers' sharing in child-related chores, and .53 ( $p < .001$ ) for the model examining father cooperative coparenting, respectively. This means that there was unobserved heterogeneity that should be addressed by using fixed-effects models. Hausman tests for assessing equality of effects between random-effects and fixed-effects models were significant for engagement ( $F = 314.38$ ,  $df = 20$ ,  $p < .001$ ), child-related chores ( $F = 297.60$ ,  $df = 20$ ,  $p < .001$ ), and cooperative coparenting ( $F = 393.61$ ,  $df = 20$ ,  $p < .001$ ), meaning that the random effects model should be rejected (Allison, 2009). Nevertheless, we presented both random- and fixed-effects models in each table to examine the extent to which results were due to unobserved selection biases.

Table 2 shows results for the association between father engagement and maternal parenting stress. Patterns of the results were similar for the random- and fixed-effects models. In the

main effects model, father engagement was negatively related to maternal parenting stress. The interaction model suggests that there was no appreciable variation between married and each of the other types of mother-father relationship status. Supplemental analyses (results not shown) suggested that differences in interaction effects between cohabiting and dating mothers, between dating and divorced, and between divorced and repartnered mothers were not significant.

Next we examined the association between fathers' participation in child-related chores and maternal parenting stress (Table 3). The main effect models, both in random- and fixed-effects models, show that fathers' participation in child-related chores was negatively related to maternal stress. The interaction models show different results for random- and fixed-effects models. In the random-effects model, the interactions between fathers' participation in child-related chores and divorced mothers or repartnered mothers were significant. Using the equation described by Hardy (1993), the effects of fathers' participation in child-related chores on maternal stress for divorced or repartnered mothers can be calculated as  $-.020$  (i.e.,  $-.092 + .072$ ) and  $-.019$  (i.e.,  $-.092 + .073$ ) respectively. These suggest that the negative association between fathers' participation in child-related chores and maternal parenting stress was smaller for divorced or repartnered mothers than for married mothers (i.e.,  $-.089$ ). Yet, the fixed-effects model found no variation by mother-father relationship status. These results indicate that the variation in the association between fathers' participation in child-related chores and maternal parenting stress by the mother-father relationship status found in the random-effects model was spurious. Unobserved factors (e.g., geographical distance, for which we had no information), which were effectively controlled for in the fixed-effects model, might have been related to weaker vulnerability to fathers' lack of participation in child-related chores among divorced and repartnered mothers compared to married mothers. Supplemental analyses (data not shown) suggested that differences in interaction effects between cohabiting and dating mothers, between dating and divorced, and between divorced and repartnered mothers were not significant.

For fathers' cooperative coparenting (Table 4), findings for the random- and fixed-effects models differed. In the main effects models, fathers' cooperative coparenting was negatively related to maternal parenting stress in the random-effects model, but not in the fixed-effects model. These results indicate that the significant association between fathers' cooperative coparenting and maternal parenting stress in random-effects model was spurious: unobserved factors (e.g., fathers' warm personality), which were controlled for in fixed-effects model, might have been related to both fathers' cooperative coparenting and mothers' parenting stress. For the interaction models, the coefficients for fathers' cooperative coparenting (i.e., the effect for the married), the interaction between father cooperative coparenting and cohabitation, and the interaction between father cooperative coparenting and being repartnered were significant in the random-effects model but not in the fixed-effects models. Again, these suggest that some other factors (e.g., fathers' harshness) were related to repartnered mothers' weaker vulnerability to a lower level of father cooperative coparenting relative to married mothers.

## DISCUSSION

Involved fathering has become the new norm of fatherhood in U.S. society (Edin & Nelson, 2013; Lamb, 2000). Yet, research on how fathers' participation in parenting is related to maternal well-being is surprisingly sparse. The present analysis expanded this literature by examining how three unique ways in which fathers may help in parenting—engagement with children, sharing in child-related chores, and cooperative coparenting—are related to maternal parenting stress, with an emphasis on whether the associations differ by mother-father relationship status. As we detail below, fathers' practical participation in parenting, rather than psychological support, is negatively related to maternal parenting stress, and the associations vary little by the mother-father relationship status.

We found that fathers' engagement with their children in shared activities, such as reading and playing, are related to lower parenting stress among mothers. This is inconsistent with prior findings, which showed that father engagement was not related to maternal parenting stress (Harmon & Perry, 2011). We also found that fathers' participation in child-related chores—e.g., babysitting, driving children to places they need to go—is related to less maternal parenting stress. As Pleck and Masciadrelli (2004) noted, fathers' participation in child-related chores is less studied than other aspects of fathers' participation in parenting, such as engagement. Our findings point to the merit of further investigating this aspect of paternal involvement in parenting to advance our understanding of its consequences for the well-being of mothers. In contrast, our analysis revealed that fathers' cooperative coparenting had a spurious relationship with maternal parenting stress through unobserved factors. Prior studies have shown that father cooperative coparenting is related to less maternal parenting stress (Harmon & Perry, 2011; Margolin, Gordis, & John, 2001), but these analyses were cross-sectional only. All in all, although Harmon and Perry (2011) emphasized the importance of fathers providing emotional support for children's mothers, our analysis, which controlled for unobserved characteristics using fixed-effects models, suggests that promoting fathers' more practical contributions to parenting through engaging activities with children or sharing less rewarding child care tasks may be the key to minimizing mothers' parenting stress.

Contrary to our expectations, we did not find variation in the association between any of the three measures of fathers' participation in parenting maternal parenting stress by mother-father relationship status. Theoretically, our finding that biological fathers' contributions to parenting matter for the well-being of mothers even when they are no longer romantically involved with each other indicates that the father role is expected to persist regardless of romantic partnership status (Edin & Nelson, 2013) rather than regarded as part of a broader, package deal of father and partner roles (Tach, Mincy, & Edin, 2010). Scholars as well as policy makers have emphasized the importance of promoting biological fathers' continuing participation in parenting after relationship dissolution, largely because it is beneficial for children (Carlson, McLanahan, & Brooks-Gunn, 2008). Our findings, along with Coley and Schindler's (2008) finding, provide additional evidence that nonresident fathers' participation in parenting could be beneficial for the well-being of mothers, too.

The present analysis has limitations that future research should address. First, measures of fathers' sharing in child-related chores should be improved. Similarly, future research should examine other aspects of fathers' participation in parenting, including basic routine care, management, and accessibility (Pleck & Masciadrelli, 2004; Raley, Bianchi, & Wang, 2012) that may be beneficial for the well-being of mothers as well as children. Second, fixed-effects models cannot control for time-varying unobserved factors (Allison, 2009). Thus, we were unable to tease out all possible selection biases. Third, the present analysis did not permit us to draw conclusions about the causal direction of the relationship between father engagement, sharing in child-related chores, or cooperative coparenting, and maternal parenting stress. Mothers typically play an important role in facilitating fathers' participation in parenting (Edin & Nelson, 2013; Stueve & Pleck, 2003). It is possible that mothers who are overwhelmed by the demands of parenting may feel as if it is an extra burden to encourage fathers to get involved. Finally, although the FFCWS had a critical advantage in that it included parents with various relationship statuses, it focused on an urban, disadvantaged population and thus future analyses using a nationally representative sample of U.S. parents are warranted.

Researchers emphasize the importance of fathers' participation in parenting regardless of mother-father relationship status, but have paid little attention to the questions as to how fathers' participation in parenting is related to mothers' well-being and whether the association varies by mother-father relationship status. Of the myriad ways in which fathers may participate in parenting, our analysis reveals that fathers' practical participation in parenting—i.e., engagement with children and sharing in child-related chores—appears to be more effective than fathers' psychological support—i.e., cooperative coparenting—in helping to reduce mothers' parenting burdens, regardless of their relationship status with the fathers. Our findings suggest that it is important to encourage fathers to continue to engage with their children and to share in child-related chores even after their relationship with their children's mothers is dissolved.

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**Table 1**

Means and Std for Variables for Total Sample and by Relationship Status (N = 6,096 person years)

	<b>Total Sample 100.0%</b>	<b>Married 64.6%</b>	<b>Cohabiting 12.8%</b>	<b>Dating 3.2%</b>	<b>Divorced 12.4%</b>	<b>Repartnered 7.1%</b>
Maternal parenting stress	2.20 (0.66)	2.18 (0.83)	2.13* (0.54)	2.19 (0.50)	2.27**c (0.54)	2.34***cfl (0.51)
Father's parenting						
Engagement (0 – 7)	3.01 (2.12)	3.60 (2.50)	3.46* (1.37)	2.37***c (1.41)	0.80***cfl (1.11)	0.94***cfl (1.14)
Routine care (1 – 4)	3.13 (0.92)	3.43 (0.76)	3.47 (0.45)	3.12***c (0.59)	1.94***cfl (0.77)	1.82***cfl (0.70)
Cooperative coparenting (1 – 3)	2.66 (0.47)	2.81 (0.34)	2.77*** (0.23)	2.68***b (0.26)	2.08***cfl (0.48)	2.07***cfl (0.48)
Controls						
Unemployed	0.13	0.07	0.19***	0.38***c	0.25***bf	0.27***be
Currently in prison	0.02	0.00	0.01	0.11***c	0.07***c	0.09***cfl
Ever been in prison	0.15	0.06	0.28***	0.29***	0.31***	0.43***cfl
Have problems	0.05	0.01	0.04***	0.05***	0.16***cfl	0.22***cflh
Number of children	2.23 (1.19)	2.20 (1.43)	2.28* (0.98)	2.73***c (1.12)	2.28***cfl (0.98)	2.10*cfl (0.99)
Child gender	0.44	0.42	0.50***	0.52***	0.49***	0.39*cfl
Child temperament	2.62 (0.97)	2.55 (1.21)	2.80*** (0.77)	2.87*** (0.73)	2.66**cfl (0.76)	2.71 (0.85)
Child health	4.52 (0.73)	4.56 (0.91)	4.36*** (0.67)	4.53 <sup>c</sup> (0.49)	4.49**c (0.56)	4.51 <sup>c</sup> (0.51)
Age	27.51 (6.10)	29.04 (7.11)	24.69*** (4.35)	23.70***b (3.88)	26.01***cfl (5.66)	22.95***cfl (3.80)
Education						
< high school	0.23	0.16	0.43***	0.42***	0.31***ce	0.37***beg
High school diploma	0.31	0.26	0.41***	0.41***	0.41***	0.37***
Some college	0.20	0.22	0.13***	0.17**a	0.16***a	0.19*cfl
College degree+	0.25	0.36	0.03***	0.00***c	0.11***cfl	0.07***cflh
Race/ethnicity						
White	0.41	0.51	0.22***	0.13***c	0.24***	0.28***
Black	0.21	0.10	0.28***	0.64***c	0.47***cfl	0.46***cfl
Hispanic	0.30	0.30	0.44***	0.22**c	0.27 <sup>cd</sup>	0.22***cflg
Other race	0.08	0.10	0.05***	0.02***c	0.02***c	0.03***be
Weekly work hours	19.59 (18.86)	18.68 (24.48)	17.57 (14.35)	17.08 (12.38)	24.18***cfl (14.75)	24.65***cfl (14.12)
Income-to-poverty ratio	2.44 (1.79)	3.01 (2.34)	1.47*** (1.00)	0.85***c (0.58)	1.33***cfl (0.96)	1.65***cfl (1.03)

	Total Sample 100.0%	Married 64.6%	Cohabiting 12.8%	Dating 3.2%	Divorced 12.4%	Repartnered 7.1%
Mother's health	3.79 (1.01)	3.90 (1.28)	3.66*** (0.77)	3.65*** (0.74)	3.61*** (0.83)	3.45***cft (0.74)
Relationship at birth						
Married	0.66	0.90	0.07***	0.02***c	0.40***cf	0.32***cf
Cohabitation	0.20	0.08	0.74***	0.32***c	0.22***cf	0.22***cf
Dating	0.10	0.01	0.17***	0.55***c	0.25***cf	0.28***cf
Non-romantic	0.04	0.00	0.02***	0.12***c	0.12***c	0.18***cft

Differences are significant from married mothers at \*p<.05, \*\*p<.01, and \*\*\*p<.001 levels.

Differences are significant from cohabitating mothers at ap<.05, bp<.01, and cp<.001 levels.

Differences are significant from dating mothers at dp<.05, ep<.01, and fp<.001 levels.

Differences are significant from divorced mothers at gp<.05, hp<.01, and ip<.001 levels.

Divorced mothers include mothers who were no longer romantically involved with the father regardless of whether they had been married.



**Table 2** Random-Effects (RE) and Fixed-Effects (FE) Models for the Association Between Father Engagement and Maternal Parenting Stress (N = 6,096 Person-Years)

	Main Effects				Variation by Relationship Status			
	RE		FE		RE		FE	
	b	SE	b	SE	b	SE	b	SE
Father engagement	-.033	.006***	-.023	.007***	-.034	.006***	-.025	.007***
Father engage x cohabitation					-.014	.012	-.006	.014
Father engage x dating					-.015	.024	-.008	.027
Father engage x divorced					.019	.021	.024	.024
Father engage x repartnered					.022	.018	.015	.022
Mother-father relationship								
Cohabiting	.021	.030	.050	.036	.074	.052	.077	.063
Dating	-.015	.044	-.009	.052	.021	.074	.012	.083
Divorced	-.001	.030	.013	.035	-.019	.037	-.011	.044
Repartnered	.037	.035	.079	.042	.015	.043	.062	.050
Controls								
Unemployed	.086	.025***	.117	.029***	.087	.025***	.117	.028***
Currently in prison	.033	.076	.000	.100	.039	.079	.010	.105
Ever been in prison	-.098	.033***	-.156	.044**	-.099	.033**	-.155	.045**
Have problems	.017	.038	-.029	.045	.023	.038	-.024	.045
Number of children	.006	.008	.000	.011	.006	.008	.000	.011
Child gender	-.021	.028			-.020	.028		
Child temperament	.087	.014***			.088	.014***		
Child health	.023	.013	.043	.015**	.023	.013	.044	.015**
Age	.003	.003			.003	.003		
Education								
< high school	.129	.038***			.127	.038***		
Some college	.026	.039			.026	.039		
College degree+	.177	.052***			.177	.052***		

	Main Effects				Variation by Relationship Status			
	RE		FE		RE		FE	
	b	SE	b	SE	b	SE	b	SE
Race/ethnicity								
Black	-.023	.039			-.022	.039		
Hispanic	-.079	.039*			-.079	.039*		
Other race	.133	.067*			.134	.067*		
Weekly work hours	-.001	.000**	.000	.001	-.001	.000**	.000	.001
Income-to-poverty ratio	-.039	.008***	-.054	.009***	-.039	.008***	-.054	.009***
Mother's health	-.027	.009**	-.009	.011	-.026	.009**	-.008	.011
Relationship status at birth								
Cohabitation	-.067	.042			-.070	.042		
Dating	-.054	.050			-.056	.050		
Non-romantic	-.018	.065			-.016	.065		
Wave 2	-.046	.014**	-.056	.016***	-.047	.014**	-.057	.016***
Wave 3	.077	.014***	.068	.015***	.076	.014***	.067	.016***
Intercept	2.014	.118***			2.010	.119***		

<sup>a</sup>Reference categories include married, father engagement x married, high school, white, married, and W1.

\* p < .05,

\*\* p < .01;

\*\*\* p < .001

**Table 3**  
 Random-Effects (RE) and Fixed-Effects (FE) Models for the Association Between Father Participation in Child-Related Chores and Maternal Parenting Stress (N = 6,096 Person-Years)

	Main Effects						Variation by Relationship Status					
	RE		FE		RE		FE		RE		FE	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Father child-related chores	-.058	.013***	-.057	.016***	-.089	.022***	-.089	.025***	-.089	.025***	-.089	.025***
Father chores x cohabitation					-.031	.041			-.009	.049		
Father chores x dating					.056	.046			.084	.053		
Father chores x divorced					.072	.032*			.073	.038		
Father chores x repartnered					.073	.034*			.071	.041		
Mother-father relationship												
Cohabiting	.025	.030	.053	.036	.144	.149	.099	.177				
Dating	.009	.044	.005	.052	-.177	.152	-.268	.176				
Divorced	-.002	.032	-.004	.037	-.193	.094*	-.201	.111				
Repartnered	.028	.038	.053	.045	-.161	.095	-.137	.112				
Controls												
Unemployed	.088	.025***	.118	.028***	.089	.025***	.120	.028***				
Currently in prison	.024	.074	-.025	.099	.036	.076	-.008	.101				
Ever been in prison	-.102	.033***	-.167	.044***	-.099	.033***	-.159	.046***				
Have problems	.007	.038	-.042	.046	.022	.039	-.028	.047				
Number of children	.003	.008	-.004	.011	.006	.008	.000	.011				
Child gender	-.022	.028			-.023	.028						
Child temperament	.089	.014***			.089	.014***						
Child health	.019	.013	.042	.015**	.021	.013	.043	.014**				
Age	.004	.003			.004	.003						
Education												
< high school	.129	.038***			.125	.038***						
Some college	.027	.039			.030	.039						

	Main Effects				Variation by Relationship Status			
	RE		FE		RE		FE	
	b	SE	b	SE	b	SE	b	SE
College degree+	.167	.053**	.168	.053**				
Race/ethnicity								
Black	-.004	.040	-.003	.040				
Hispanic	-.067	.039	-.066	.039				
Other race	.145	.068*	.145	.068*				
Weekly work hours	-.001	.000*	-.001	.000*				
Income-to-poverty ratio	-.042	.008***	-.042	.008***				
Mother's health	-.029	.009**	-.028	.009**				
Relationship status at birth								
Cohabitation	-.079	.042	-.085	.042*				
Dating	-.067	.050	-.069	.050				
Non-romantic	-.027	.066	-.024	.066				
Wave 2	-.061	.014***	-.067	.016***				
Wave 3	.060	.014***	.056	.015***				
Intercept	2.119	.130***	2.205	.147***				

<sup>a</sup>Reference categories include married, father engagement x married, high school, white, married, and W1.

\* p < .05,

\*\* p < .01;

\*\*\* p < .001

**Table 4**  
 Random-Effects (RE) and Fixed-Effects (FE) Models for the Association Between Father Cooperative Coparenting and Maternal Parenting Stress (N = 6,096 Person-Years)

	Main Effects						Variation by Relationship Status					
	RE		FE		RE		FE		RE		FE	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Father cooperative coparenting	-.100	.029 <sup>**</sup>	-.066	.037	-.141	.048 <sup>**</sup>	-.082	.055	-.172	.081 <sup>*</sup>	-.107	.097
Father cooperative x cohabiting					-.053	.100	-.009	.117	.084	.054	.028	.061
Father cooperative x dating					.122	.060 <sup>*</sup>	.066	.068				
Father cooperative x divorced												
Father cooperative x repartnered												
Mother-father relationship												
Cohabiting	.023	.030	.052	.036	.508	.229 <sup>*</sup>	.355	.276				
Dating	.015	.044	.012	.052	.151	.273	.033	.321				
Divorced	.017	.031	.028	.037	-.185	.137	-.041	.155				
Repartnered	.056	.036	.093	.044 <sup>*</sup>	-.225	.153	-.055	.174				
Controls												
Unemployed	.082	.025 <sup>**</sup>	.115	.028 <sup>***</sup>	.079	.025 <sup>**</sup>	.114	.029 <sup>***</sup>				
Currently in prison	.049	.075	.008	.099	.058	.076	.013	.101				
Ever been in prison	-.103	.033 <sup>**</sup>	-.161	.045 <sup>**</sup>	-.104	.033 <sup>**</sup>	-.161	.045 <sup>**</sup>				
Have problems	-.003	.040	-.039	.047	.010	.039	-.034	.047				
Number of children	.004	.008	-.004	.011	.003	.008	-.003	.011				
Child gender	-.021	.028			-.020	.028						
Child temperament	.088	.014 <sup>***</sup>			.086	.014 <sup>***</sup>						
Child health	.018	.013	.040	.015 <sup>*</sup>	.018	.013	.040	.015 <sup>**</sup>				
Age	.004	.003			.004	.003						
Education												
< high school	.126	.038 <sup>***</sup>			.126	.038 <sup>***</sup>						
Some college	.022	.039			.022	.039						

	Main Effects				Variation by Relationship Status			
	RE		FE		RE		FE	
	b	SE	b	SE	b	SE	b	SE
College degree+	.169	.053**	.168	.052**				
Race/ethnicity								
Black	-.008	.040	-.007	.039				
Hispanic	-.066	.039	-.065	.039				
Other race	.139	.068*	.140	.067*				
Weekly work hours	-.001	.000**	-.001	.001	-.001	.000**	-.001	.001
Income-to-poverty ratio	-.042	.008***	-.056	.009***	-.041	.008***	-.056	.009***
Mother's health	-.029	.009***	-.011	.011	-.028	.009**	-.011	.011
Relationship status at birth								
Cohabitation	-.078	.042	-.083	.042*				
Dating	-.061	.050	-.064	.050				
Non-romantic	-.025	.066	-.026	.066				
Wave 2	-.056	.014***	-.063	.016***	-.054	.014***	-.062	.016***
Wave 3	.059	.014***	.055	.015***	.059	.014***	.055	.015***
Intercept	2.210	.143***	2.321	.170***				

Reference categories include married, father engagement x married, high school, white, married, and W1.

\* p < .05,

\*\* p < .01;

\*\*\* p < .001