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Fathers' Paternity Leave-Taking and Children's Perceptions of Father-Child Relationships in the United States

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Abstract

Paternity leave-taking is believed to benefit children by encouraging father-child bonding after a birth and enabling commitments to fathers' engagement. Yet, no known U.S. studies have directly focused on the associations between paternity leave-taking and children's reports of father-child relationships. Understanding the potential consequences of paternity leave-taking in the United States is particularly important given the lack of a national paid parental leave policy. The present study uses five waves of data on 1,319 families, largely socioeconomically disadvantaged, from the Fragile Families and Child Wellbeing Study to analyze the associations between paternity leave-taking and 9-year-old children's reports of their father-child relationships. We also assess the extent to which these associations are mediated by fathers' engagement, co-parenting quality, parental relationship satisfaction, and fathers' identities. Results indicate that leave-taking, and particularly 2 weeks or more of leave, is positively associated with children's perceptions of fathers' involvement, father-child closeness, and father-child communication. The associations are explained, at least in part, by fathers' engagement, parental relationship satisfaction, and father identities. Overall, results highlight the linked lives of fathers and their children, and they suggest that increased attention on improving opportunities for parental leave in the United States may help to strengthen families by nurturing higher quality father-child relationships.

Keywords

family policy; family roles; father-child relations; fatherhood; paternity leave; parental leave

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Compliance with ethical standards

The authors of this manuscript have verified that they have read and are in compliance with the guidelines of the 6th ed. Publication Manual of the American Psychological Association.

Conflict of Interest

The authors declare that they have no conflicts of interest.

The United States is unique in its lack of a national paid parental leave policy (Blum et al., 2018). The absence of support for such a basic family policy may be consequential for American families given that research using both international and U.S. data suggest that increased access to, and usage of, parental leave provides numerous benefits to families and the larger society. Although paternity leave has received a lesser focus than maternity leave, its benefits seem to include alleviating work-family conflict, assisting mothers in their childbirth recovery and return to the labor market, encouraging father involvement, and improving parents' relationships (Bratberg & Naz, 2014; Johansson, 2010; Petts & Knoester, 2019; Pragg & Knoester, 2017; Redshaw & Henderson, 2013).

Paternity leave may also help to nurture high quality father-child relationships. Paternity leave-taking may influence subsequent father-child relationships by providing fathers with time to bond and engage with their child from birth; consequently, it may foster commitments to developing nurturing father identities (Almqvist & Duvander, 2014; Bünning, 2015; Haas & Hwang, 2008; Huerta et al., 2014; Pragg & Knoester, 2017; Rehel, 2014). Indeed, leave-taking and fathering interactions seem to encourage fathers to become sensitive and responsive parents—two parenting attributes that are fundamentally important for child development and for establishing good parent-child relationships (Carlson, 2006; Petts & Knoester, 2018; Waldfogel, 2006). Paternity leave may also enable fathers and mothers to learn to share together in the meaningful time following a birth as well as establish patterns of co-parenting, which may strengthen parental relationships (Almqvist & Duvander, 2014; Kotsadam & Finseraas, 2011; Petts & Knoester, 2019). As such, paternity leave-taking may provide early benefits to children that may accumulate over time, leading to enhanced father-child relationship quality later in childhood that may ultimately promote greater child well-being (Huerta et al., 2014; Kotsadam & Finseraas, 2011; McLanahan & Beck, 2010; Petts & Knoester, 2018; Pragg & Knoester, 2017).

Despite numerous studies linking paternity leave-taking to fathers' involvement (Haas & Hwang, 2008; Huerta et al., 2014; Nepomnyaschy & Waldfogel, 2007; Petts & Knoester, 2018; Pragg & Knoester, 2017), researchers have yet to show convincing evidence of the implications of paternity leave-taking for children's perceptions of their relationships with their fathers. The current study seeks to address this gap in the literature by analyzing the associations between paternity leave-taking and children's reports of father-child relationships when they are approximately 9-years-old. As part of our analysis, we consider whether associations between paternity leave-taking and father-child relationships are mediated by fathers' engagement, co-parenting support, parental relationship satisfaction, and fathers' identities.

Beyond the focus of our study, our research is unique because it uses a national U.S. sample of relatively disadvantaged families, who may be more likely to benefit from paternity leave-taking than families who are socioeconomically better off (Knoester, Petts, & Pragg, 2019; Lichtman-Sadot & Bell, 2017; McKay, Mathieu, & Doucet, 2016; Winston, 2014). This may be particularly true in the United States given the lack of widespread access to paternity leave (Bureau of Labor Statistics, 2018; Petts, Knoester, & Li, 2018; Winston, 2014). Thus, the findings of our study may be especially important in informing policymakers and scholars about the potential benefits of more widely available paternity leave-taking

opportunities. Our use of children's reports of father-child relationships is also unique, offering insights into how children perceive fathering behaviors and their own father-child relationships. The use of children's reports also minimizes concerns with same-source bias that accompany a reliance on only parents' reports.

Fathers' Identities, Linked Lives, and Cumulative Advantage

The conceptual framework for our study builds upon previous presentations of the relevance of fathers' identities for paternity leave-taking and subsequent fathering activities (Goldberg, 2015; Pragg & Knoester, 2017). This work emphasizes that expectations for fathering have changed in recent decades such that fathers are increasingly expected to be more involved in their children's lives, beyond contributing as breadwinners. Relatedly, fathers' identities shape, and are responsive to, fathering expectations and experiences.

We also integrate a life course perspective with the concept of cumulative advantage to better understand the implications of paternity leave-taking for children. This framework highlights the importance of social contexts. Statuses, structures, and events early in life have implications for later life outcomes, and advantages early in life may accumulate and result in additional advantages later in life (DiPrete & Eirich, 2006; Elder, 1998; Merton, 1968).

Specifically, three main aspects of a life course perspective are relevant for our study. First, it is important to acknowledge that individuals' experiences occur within a particular sociohistorical context (Elder, 1994). As such, any examination of the potential benefits associated with paternity leave should consider the current social and historical context of paternity leave opportunities and patterns within the United States. Second, a life course perspective recognizes that social structures influence the nature and availability of individual positions but also acknowledges that positions within the structure, and access to potential advantages, are shaped by individuals' actions (Elder, 1994; Ferraro, Shippee, & Schafer, 2009). Consequently, a focus on paternity leave should consider both access and ability to take leave, as well as an individual's choice of whether to take leave and for how long. Third, a life course perspective points to the importance of linked lives—the idea that individuals are embedded within the lives of their family members (Elder, 1994; Gilligan, Karraker, & Jasper, 2018). This concept implies that any potential benefits associated with paternity leave will not just matter for fathers, but may also have consequences for family members to whom fathers are linked, including mothers and children. In sum, these consequences may result in fathering behaviors that offer accumulating advantages and/or disadvantages (McLanahan, 2004; Petts & Knoester, 2018).

Thus, a life course perspective that considers cumulative advantage is useful in theorizing whether and how contexts early in life may shape later childhood outcomes, such as the quality of father-child relationships. We utilize this integrated framework to consider whether access to, and commitments to take, paternity leave in the current U.S. context may provide advantages for families that may be borne out in father-child relationship quality. In the process, we consider the extent to which paternity leave-taking may be linked to father-

child relationship quality because of patterns of fathers' engagement, parental relationship dynamics, and fathers' identities.

Paternal Leave in the United States

It is important first to consider the current structure of paternal leave in the United States. The United States is unusual in that it is the only high-income country, and one of only a handful of countries in the world, that does not have a statutory paid parental leave entitlement (Blum et al., 2018). Most OECD (Organisation for Economic Co-operation and Development; www.oecd.org) countries also guarantee paid leave to fathers (Blum et al., 2018; Raub et al., 2018). Instead, the Family and Medical Leave Act (FMLA) provides up to 12 weeks of unpaid leave to parents after childbirth for U.S. employees who meet eligibility requirements (Blum et al., 2018). There are also four states that currently have paid family leave policies (California, Rhode Island, New Jersey, and New York), with similar policies being implemented in the future in other places (Washington in 2020, Washington, D.C. in 2020, and Massachusetts in 2021). These policies vary in their level of wage replacement, amount of time offered, and job protection (National Partnership for Women and Families, 2018). In addition, 16% of workers have access to paid family leave from their employers (Bureau of Labor Statistics, 2018).

Furthermore, more advantaged fathers (i.e., high-income fathers, highly educated fathers, and fathers in professional occupations) are more likely to have access to paternal leave from their employers than less advantaged fathers (Klerman, Daley, & Pozniak, 2012; Winston, 2014). As such, access to paid paternal leave in the United States may be a form of cumulative advantage offered primarily to fathers who are already relatively privileged in the labor market.

In addition to structural barriers, cultural barriers to leave-taking also exist for American fathers. Traditional norms of masculinity and the ideal worker norm both emphasize that men should prioritize work and always be available to work (Acker, 1990; Marsiglio & Roy, 2012; Williams, 2000). Pressure to adhere to these norms lead men to be fearful that taking paternal leave may result in workplace stigmatization, and evidence suggests that requesting leave is associated with lower performance ratings, lower future earnings, and workplace stigma (Rege & Solli, 2013; Rudman & Mescher, 2013; Williams, Blair-Loy, & Berdahl, 2013). As such, even if fathers have access to paid leave from their employers, they may not use it.

Despite the lack of access and cultural barriers to paid paternal leave in the United States, as much as 88% of American fathers take some time off after the birth of a child (Petts & Knoester, 2018; Pragg & Knoester, 2017). However, less than half of fathers take paid leave, and few workers take leave under FMLA (Klerman et al., 2012; Petts, Knoester, & Li, 2018). Thus, many fathers may rely on other ways of taking time off such as sick and personal days (Harrington et al., 2014). Perhaps not surprisingly, fathers in the United States take relatively short periods of leave, with average leaves lasting one week or less, and more advantaged fathers, on average, take longer periods of leave (Harrington et al., 2014; Petts, Knoester, & Li, 2018; Pragg & Knoester, 2017).

Overall, the structure of paternity leave in the United States contributes to inequality such that only those who have access to (and are willing to take) leave may experience the potential benefits of paternity leave. Given that access to leave varies by socioeconomic status, the current structure may contribute to accumulating advantages or disadvantages by further dividing families by whether they are parental-leave rich or parental-leave poor (McKay et al., 2016; McLanahan, 2004; O'Brien, 2009). This divide may be particularly consequential today given the challenges that modern parents face (Marsiglio & Roy, 2012; Waldfogel, 2006).

Paternity Leave and Father-Child Relationships

Consistent with a life course perspective and the concept of cumulative advantage, experiences early in life are important, and access to potential advantages can begin even before birth due to variations in prenatal care and fathers' involvement during pregnancies, for example (Gilligan et al., 2018). Furthermore, parenting practices after birth are important for child development and often have long-term implications for children's well-being (Carlson, 2006; DiPrete & Eirich, 2006; Gilligan et al., 2018; Waldfogel, 2006). These parenting practices may vary by parents' levels of financial, human, and social capital, which may result in cumulating advantages or disadvantages over time (Coleman, 1988; McLanahan, 2004). For example, parents with higher levels of financial, human, and social capital may maintain stronger parental and co-parenting relationships that help to promote favorable outcomes for children. In contrast, parents with fewer resources may experience strains and stresses that pose relationship challenges and contribute to lower child well-being (DiPrete & Eirich, 2006; Elder, 1994; McLanahan, 2004; McLanahan & Beck, 2010; O'Rand, 2006). Thus, access and exposure to resources early in life, typically through one's parents, contribute to accumulating advantages throughout the life course (DiPrete & Eirich, 2006; McLanahan, 2004; 2009; McLanahan & Beck, 2010).

Access to paternity leave may be one potential resource for families. Because family members are interdependent, or linked, children may benefit from any advantages that paternity leave-taking provides to families (Elder, 1994; McLanahan, 2004). One potential benefit of paternity leave is the opportunity for fathers to have a dedicated period of time off work to bond with and learn about their new child. Spending time with a child increases the likelihood that a father will know how to meet his child's needs, enabling fathers to become sensitive and responsive parents (Lamb & Lewis, 2010; Waldfogel, 2006). As such, leave-taking may help to promote fathers' sensitivity and attachment—especially with regard to a specific child—by allowing fathers to spend time with their child from birth. Although periods of paternity leave are relatively short in the United States, shorter leaves (i.e., leaves of less than 2 weeks) have been found to be associated with father-child bonding and fathers' family behaviors in other cultural contexts (Pailhé, Solaz, & Tô, 2018). Furthermore, spending time with a newborn child can provide fathers with joy, encourage feelings of generativity, and help fathers to establish identities as caring, engaged fathers (Lamb & Lewis, 2010; McKeering & Pakenham, 2000). As part of this process, fathers may become more confident and committed to fathering roles (Pragg & Knoester, 2017; Rehel, 2014).

By providing time for fathers to develop paternal sensitivity and attachment to their child, paternity leave may also help to promote better father-child relationships. Parental sensitivity and responsiveness are important because these characteristics help to facilitate children's attachments to their parents and often lead to fewer behavior problems as well as more positive social, emotional, and cognitive development throughout childhood (Carlson, 2006; Lamb & Lewis, 2010; Rothbaum & Weisz, 1994; Sroufe, Carlson, & Shulman, 1993; Waldfogel, 2006). Fathers who are attached to children early in life are also more likely to have closer relationships with their child later in life (Brown, Mangelsdorf, & Neff, 2012; Cabrera, Fagan, & Fame, 2008; Lamb & Lewis, 2010), and the benefits of paternity leave may be particularly important within a population that has high rates of partnership instability (Knoester et al., 2019; McLanahan, 2009). Thus, early experiences in children's lives—including fathers' leave-taking behaviors—may be associated with father-child relationships later in childhood. We expect that paternity leave-taking will be positively associated with 9-year-old children's perceptions of father-child relationship quality, and this association will be particularly likely if fathers take relatively long leaves (i.e., 2 or more weeks) (Hypothesis 1).

Mediating Factors

Associations between paternity leave-taking and subsequent father-child relationship quality are thus expected to be due to family processes that occur throughout the life course. For example, the advantage of having access to, and the ability to take, [longer] paternity leaves may lead to reinforcing patterns of fathers' engagement, co-parenting support, parental relationship satisfaction, and "good father" identities (i.e., that fathers identify themselves as good fathers). In turn, these cumulative advantages may be associated with stronger father-child relationships later in childhood, particularly among socioeconomically disadvantaged populations (Knoester et al., 2019; McLanahan, 2009; McLanahan & Beck, 2010; Petts & Knoester, 2018; Pragg & Knoester, 2017).

One frequently studied benefit of paternity leave is the potential to increase fathers' engagement. Increasingly, fathers express a desire to be actively engaged in their children's lives but struggle to find time to meet their desired level of involvement (Doucet, 2013; McGill, 2014). By providing time off from work, paternity leave allows fathers to establish early bonds with their child as well as provides an opportunity for fathers to engage with their child from birth (Pragg & Knoester, 2017; Rehel, 2014). In turn, the early experiences offered by paternity leave may be associated with more frequent father engagement during infancy and also may increase the likelihood that fathers remain highly engaged in their child's life throughout childhood (Cabrera et al., 2008; Roggman et al., 2002). Indeed, longer periods of paternity leave are associated with more frequent father engagement throughout the first few years of a child's life (Haas & Hwang, 2008; Huerta et al., 2014; Neponmyaschy & Waldfogel, 2007; Petts & Knoester, 2018; Pragg & Knoester, 2017). Children are also more likely to report good relationships with their fathers if they had a highly engaged father while growing up (Flouri & Buchanan, 2002; Lamb & Lewis, 2010). As such, the associations between longer paternity leaves and father-child relationships may be, at least in part, mediated by fathers' engagement.

Paternity leave-taking also may be associated with parental relationship dynamics. Individuals increasingly favor egalitarian relationships (Gerson, 2010; Pedulla & Thebaud, 2015) and egalitarianism is associated with higher quality romantic relationships (Carlson, Hanson, & Fitzroy, 2016; Carlson, Miller, & Sassler, 2018; Frisco & Williams, 2003). Taking time off work when a child is born may symbolize a father's commitment to being an engaged parent who shares co-parenting responsibilities. Moreover, paternity leave-taking may provide time for parents to be together during a meaningful time in their lives, and parents may work together to face the challenges of raising a child, as well as establish expectations about how childcare will be divided (Almqvist & Duvander, 2014; Bünning, 2015; Rehel, 2014). Through this collaboration, parents may be more likely to perceive the division of labor as equitable and have fewer conflicts (Almqvist & Duvander, 2014; Bünning, 2015; Nomaguchi, Brown, & Leyman, 2017). As such, paternity leave-taking may be positively associated with co-parenting support and relationship satisfaction (Kotsadam & Finseraas, 2011; Petts & Knoester, 2019).

Parents' relationship quality is also associated with father-child relationship dynamics. Two mechanisms may explain this association. First, there is evidence of a spillover effect; a positive, supportive relationship between parents may lead parents to be more supportive in other relationships such as those with children (Cox, Paley, & Harter, 2001; Erel & Burman, 1995). Conversely, parents' relationship problems may spillover into parent-child relationships (Cox et al., 2001). Second, higher quality parental relationships may help children to feel secure within their families (Davies & Cummings, 1994). Increased emotional security may help children to feel more attached to their parents, which may be associated with their perceptions of parent-child relationships (Cox et al., 2001; Davies & Cummings, 1994; Erel & Burman, 1995; Grych & Fincham, 1990). Thus, parents' co-parenting support and relationship satisfaction may, at least in part, mediate the association between paternity leave-taking and father-child relationship quality.

Paternity leave-taking may also help to strengthen and promote "good father" identities. That is, fathers may be more likely to consider themselves as fulfilling fathering expectations and acting as a good father if they take paternity leave. Having opportunities to parent and bond with their child and committing to fathering behaviors may further increase the likelihood that men develop "good father" identities (Pasley et al., 2014; Pragg & Knoester, 2017; Rane & McBride, 2000). Moreover, identities that entail having positive attitudes toward fathering are associated with greater father involvement (Goldberg, 2015; Pragg & Knoester, 2017). Similarly, fathers who embrace involved-father identities are more likely to be engaged in their children's lives and provide emotional support to their children (Petts, Shafer, & Essig, 2018; Rane & McBride, 2000). Thus, it seems likely that paternity leave-taking may encourage the development and strengthening of "good father" identities, which may reinforce patterns of positive fathering activities.

Nonetheless, it is also possible that fathers' engagement, parents' relationship quality, and "good father" identities shape fathers' decisions about paternity leave-taking. Indeed, evidence suggest that fathers' attitudes and commitments toward family and parenting predict patterns of leave-taking (Duvander, 2014; Petts, Knoester, & Li, 2018; Pragg & Knoester, 2017). These factors are likely also interrelated. For example, "good father"

identities increase the likelihood of father engagement (and vice versa), and father engagement is associated with higher parental relationship quality (and vice versa) (Goldberg, 2015; McClain & Brown, 2017; Pragg & Knoester, 2017). Regardless, experiences during paternity leave such as bonding with the child and mother are also likely to help to promote fathers' engagement, parents' relationship quality, and "good father" identities (Huerta et al., 2014; Kotsadam & Finseraas, 2011; Petts & Knoester, 2019; Pragg & Knoester, 2017), and the cumulative advantages of these interrelated, reinforcing fathering commitments may promote better father-child relationships. Thus, we expect that the associations between paternity leave-taking and children's perceptions of father-child relationship quality will be, at least in part, mediated by fathers' engagement, co-parenting support, parental relationship satisfaction, and fathers' identities (Hypothesis 2).

Other Factors

A number of factors may confound the association between paternity leave and father-child relationship quality. As we noted earlier, fathers with higher socioeconomic statuses are more likely to have access to leave and take longer periods of paternity leave than less advantaged fathers (Huerta et al., 2014; Petts, Knoester, & Li, 2018; Winston, 2014). Father-child relationships may also be more tenuous in disadvantaged populations (Edin & Nelson, 2013; McLanahan, 2004). Moreover, other contextual factors such as a child's age and gender, religious participation, and relationship status with the child's mother may each influence patterns of leave-taking (e.g., married fathers may take longer leaves than unmarried fathers) as well as father-child relationships (e.g., father-child relationships are stronger when parents remain together) (McLanahan, 2009; Petts, Knoester, & Li, 2018).

Method

Data

Data for the present study come from the Fragile Families and Child Wellbeing Study (FFCW). The FFCW is a longitudinal birth cohort study that follows 4,898 focal children, born between 1998 and 2000, and their parents. Fragile families are defined as unmarried parents and their children, and these data consist of an urban sample with high percentages of low-income, minority, and unmarried parents (although married parents were also included). Parents were interviewed shortly after the birth of a focal child (Wave 1), and then approximately one (Wave 2), 3 (Wave 3), 5 (Wave 4), 9 (Wave 5), and 15 years later (Wave 6). Starting at Wave 5, the focal children were also interviewed. For the present study, we utilize data from Wave 1 (information about parents at birth), Wave 2 (paternity leave indicators), Wave 4 (mediating variables), and Wave 5 (focal children's reports of father-child relationships).

Participants

The sample is restricted to families in which fathers were employed at the time of the child's birth (to be eligible to take paternity leave) and returned to work following the birth, families who were asked questions about paternity leave, and families in which fathers were interviewed at Wave 2, mothers and fathers were interviewed at Wave 4, and children were

interviewed at Wave 5. To reduce endogeneity problems, fathers who reported not having access to leave were omitted ($n = 29$) to focus on fathers who presumably were able to take time off after having a child (results including these fathers are similar to those presented). These restrictions result in a sample size of 1,319 families.

Paternity Leave-Taking

For our study, we define paternity leave-taking as taking time off work for the birth of a child, regardless of whether fathers utilized a paternity leave policy (because this information is not included in the data). Fathers reported on whether they took any time off of work after the birth of the focal child, and how many weeks of leave (paid or unpaid) they took, in the Wave 2 survey. *Paternity leave-taking* is categorized as (a) no leave (used as reference category), (b) one week, and (c) 2 or more weeks of leave. We used a categorical measure because supplemental analyses suggested that the associations between length of paternity leave and the outcome measures were not always linear. Supplementary analyses suggest that the categories for 2 weeks of leave and more than 2 weeks of leave were not substantively different from one another, and we combined them in our study due to the relatively small number of fathers who took more than 2 weeks of leave (less than 7% of fathers in our sample; $n = 88$).

Father-Child Relationship Quality

The focal children reported on the quality of their relationships with their fathers at Wave 5. *Father involvement* is indicated by children's responses to the question "Does your dad spend enough time with you?" Responses range from 0 (*never*) to 3 (*always*). *Father-child closeness* is indicated by children's responses to the question: "How close do you feel to your dad?" Responses range from 1 (*not very close*) to 4 (*very close*). *Father-child communication* is indicated by children's responses to the items "How well do you and your dad share ideas or talk about things that really matter?," rated from 1 (*not very well*) to 4 (*extremely well*), as well as two items rated from 0 (*never*) to 3 (*always*): "Does your dad talk over important decisions with you?" and "Does your dad listen to your side of an argument?" These communication items were standardized ($M = 0$, $SD = 1$), and the mean is used as the indicator ($\alpha = .73$) such that higher scores indicate stronger levels of communication. Although we report results with separate models for each indicator of father-child relationship quality, the results are largely consistent when all three indicators of father-child relationship quality are combined to create a single index. (Results can be found in the online supplement, Table 4s.)

Mediating Variables

Measures for each of the mediating variables are taken from the Wave 4 survey that occurred approximately 5 years after the child's birth. *Father engagement* is based on how many days per week (ranging from 0–7 days) fathers reported engaging in eight activities with the focal child: singing songs or nursery rhymes; reading stories; telling stories; playing inside with toys; telling child you appreciated something he/she did; play outside in the yard, park, or a playground; take child on an outing (such as shopping, or to a restaurant, church, museum, or special activity or event); and watch TV or a video together ($\alpha = .88$). Mean responses are used such that higher scores indicate greater engagement.

Co-parenting support is taken from mothers' responses to questions about how often, rated from 1 (*rarely true*) to 3 (*always true*): (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]," and (f) "You can count on [father] for help when you need someone to look after [child] for a few hours" ($\alpha = .81$). Each of these questions refers to behaviors specifically associated with the focal child. The mean response is used such that higher scores capture stronger perceived support.

Relationship satisfaction indicates mothers' responses to the question "In general, would you say that your relationship with him (father) is excellent, very good, good, fair, or poor?" Responses were coded to range from 1 (*poor*) to 5 (*excellent*). The indicator of a "good father" identity is taken from fathers' responses to the question: "Please think about how you feel about yourself as a father to [the focal child]. Would you say that you are an excellent father, a very good father, a good father, or not a very good father?" Responses were not very good, good, very good and excellent. Due to a small number of fathers responding "not very good" ($n = 16$), the final variable ranges from 0 (*good or not very good*) to 2 (*excellent*). We also ran supplementary models using Wave 2 indicators of each of these variables (Wave 3 indicator for "good father" identity because this question was not asked at Wave 2) instead of Wave 4 indicators, and results were consistent with those we present here.

Control Variables

Control variables are taken from the Wave 1 survey. These include mothers' and fathers' age; educational attainment, from 1 (*did not complete high school*) to 4 (*college degree*); and race/ethnicity (White, Black, Latino/a, or other race/ethnicity, with White used as reference category). Parents' work hours are categorized as (a) part-time (less than 35 hours a week) or (b) full-time (35 a week or more, used as reference category). An additional category of does not work is included for mothers. Relationship status with the mother is categorized as (a) married (used as reference category), (b) cohabiting, and (c) nonresident. Controls are also included for fathers' (0 = *less than \$10,000* to 8 = *\$75,000 or more*) and mothers' income (0 = *less than \$5,000* to 6 = *\$30,000 or more*), number of other children, whether the focal child is father's first child, child age (at Wave 5), child gender (1 = *male*) father's religious participation (0 = *never* to 4 = *once a week or more*), whether fathers did not establish paternity in the hospital, and mother's self-reported health (0 = *poor* to 4 = *great*).

Change scores for key control variables (income, work hours, relationship status with mother) were included in supplementary models to assess whether changes in these factors accounted for the associations between paternity leave-taking and father-child relationships. The substantive conclusions were similar in the models we report here. (Results accounting for these factors can be found in the online supplement.) We also considered whether the associations between paternity leave-taking and father-child relationship quality varied by relationship status with the mother by including interaction terms in the models. Although recent evidence suggests that paternity leave-taking may be particularly influential for

nonresident fathers (Knoester et al., 2019), we did not find evidence that the associations presented vary by fathers' relationship status.

Variables that reflect fathers' attitudes at Wave 1 are also included. *Positive father attitudes* measure fathers' mean level of agreement (1 = *strongly disagree* to 4 = *strongly agree*) on whether (a) "Being a father and raising children is one of the most fulfilling experiences a man can have," (b) "I want people to know that I have a new child," and (c) "Not being a part of my child's life would be one of the worst things that could happen to me" ($\alpha = .70$). In the FFCW, fathers were also asked to identify which fathering role (provide financial support, teach child about life, provide direct care, show love and affection, provide protection, or serve as an authority figure and discipline) was most important. *Engaged father attitudes* indicates fathers who identified either providing direct care or showing love and affection as most important. *Traditional gender attitudes* is a dichotomous variable indicating whether fathers agree that: "It is much better for everyone if the man earns the main living and the woman takes care of the home and family."

Analytic Strategy

To test the first hypothesis regarding whether paternity leave-taking is associated with father-child relationship quality, we use different regression techniques. Ordinary least squares (OLS) regression models are used to estimate children's perceptions of father-child communication at Wave 5, and generalized ordered logistic regression models are used to estimate children's perceptions of father involvement and father-child closeness. Generalized ordered logistic regression is used for these variables because they are ordinal dependent variables and numerous control variables within these models violate the proportional odds assumption (i.e., that the relationship between all pairs of ordered groups—not very close vs. other options; quite close vs. other options; etc.—is the same, resulting in only one set of coefficients for the model). For example, in the model predicting father involvement, the proportional odds assumption was violated by mother's age, mother's income, mother's work hours, relationship status, child gender, and whether the child was the father's first child. Generalized ordered logistic regression models allow the proportional odds assumption to be relaxed for variables that violate this assumption, resulting in one set of coefficients for variables that do not violate the assumption and separate coefficients for each pair of ordered groups for variables that violate the assumption (Williams, 2016). We present only coefficients for paternity leave-taking in our tables to simplify the presentation of results and provide a direct comparison to the selection models that we use. (Full results can be found in the online supplement.)

To test the second hypothesis regarding mediation effects, the KHB method is used to assess whether associations between paternity leave-taking and father-child relationship quality are mediated by fathers' engagement, co-parenting quality, parental relationship satisfaction, and "good father" identities. The KHB method decomposes the overall effect (paternity leave-taking on father-child relationships) into direct and indirect effects using the same scale, and it allows for the inclusion of multiple mediators which allows for a comparison of indirect effects across multiple mediators (Breen, Karlson, & Holm, 2013; Kohler, Karlson, & Holm, 2011). Unlike many mediation models, the KHB method is suitable for both linear

and nonlinear models (Kohler et al., 2011). Given that we use nonlinear models in our study (ordered logistic regression), the KHB method is an appropriate technique to use.

Most variables have few, if any, missing values (less than 2% missing), with the exception of father's income (10% missing). Regression-based imputation was used to preserve the sample size for all analyses. Results are largely consistent when multiple imputation is used, but these results are not reported because the command used to conduct the KHB analyses (*khb* in Stata 15) only reports total indirect effects in multiply imputed models and does not report coefficients for specific mediating variables.

Selection

We also considered the possibility that the associations between paternity leave-taking and father-child relationship quality may be due to selection effects. Selection effects are primarily a concern if fathers' reports of leave-taking are driven by unobservable factors (e.g., access to a leave policy, fathers' personality) that are also associated with the outcomes. As such, we take a couple of approaches to account for selection effects. First, to account for selection effects on observed factors in the regression models (used to test the first hypothesis), we utilize augmented inverse propensity weighted (AIPW) estimators. AIPW estimation is similar to propensity score matching (PSM), which attempts to approximate an experiment where groups are matched on observed covariates such that any difference between the matched groups should be attributed to the treatment. Because PSM is only applicable when there is a single treatment (e.g., did/did not take leave), AIPW estimators are used because there are multiple treatments (i.e., lengths of paternity leave) (Cattaneo, 2010).

For the AIPW estimation, we used a set of Wave 1 covariates that have been found to be associated with paternity leave-taking and father-child relationship quality: parents' age, race, education, income, work status prior to birth, number of other children, whether focal child is father's first child, relationship status with mother, child gender, father's religious participation, and fathering attitudes (Duvander, 2014; Huerta et al., 2014; Lamb, 2010; Petts, Knoester, & Li, 2018; Pragg & Knoester, 2017). We then used these variables to simultaneously predict paternity leave-taking and the outcome variables (in separate models) in order to estimate the average treatment effects of length of paternity leave. We then omitted cases in which the common support assumption (that propensity scores overlap between the treatment and control groups) was not met. This reduced our analytic sample size for models accounting for selection to 1,302 (17 cases violated the common support assumption). We also assessed whether balance was achieved in each model (i.e., covariates did not differ statistically between the treatment and control groups), and pre- and post-tests suggested that balance was largely achieved (there was less balance on variables with little variance, but results are similar in models that omit these variables). We then ran the final models, and we report those results.

Unfortunately, AIPW estimates cannot be used in KHB models. Thus, to account for selection effects on observed factors in the mediation analyses, we use inverse probability of treatment weighting (IPTW). IPTW is another technique that uses propensity score matching; the estimates obtained from propensity score matching are used to generate

weights, which are equal to the inverse of the probability of receiving the treatment. These weights are then included in analytic models to account for variations based on whether respondents are in the treatment or control groups (i.e., did/did not take leave), such that these groups differ in whether they received the treatment but are similar on all other baseline characteristics (Austin & Stewart, 2015). We take a similar approach as described earlier, using the same Wave 1 covariates to match fathers in the treatment (took leave) and control (did not take leave) groups and generated propensity scores for each observation. Including weights to account for selection into taking leave based on the observed factors available allows us to account for selection to the extent we are able. In supplementary models, we also used IPTW to test the first hypothesis, and those results were consistent with those presented. (Summary results using IPTW can be found in the online supplement.)

Finally, we considered whether our analyses may be biased by attrition. Of the fathers who were employed at the time of the child's birth, 26% ($n = 833$) experienced attrition by Wave 4. Fathers who dropped out of the sample were more disadvantaged at the time of the child's birth than were fathers who were interviewed at Wave 4 (e.g., lower income and education; less likely to be married, White, and work in a professional occupation). Yet, there was not a statistically significant difference in leave-taking patterns between fathers who remained and dropped out of the sample. To account for attrition bias, Heckman's (1979) two-stage method was used in sensitivity analyses. Because the Heckman procedure did not change the results (summary results accounting for the Heckman procedure can be found in the online supplement), we present our findings without the Heckman procedure applied.

Results

Summary statistics for all variables are reported in Table 1, and separate mean values are reported by length of leave taken. Results show that fathers in our sample take about a week off after the birth of a child, on average. Only 21% ($n = 283$) of all fathers, and 27% ($n = 283$) of fathers who take leave, take 2 or more weeks off.

Also, the mean values provide initial evidence that leave-taking is associated with the dependent and mediating variables. First, children reported more frequent involvement by fathers, greater closeness, and better communication with fathers if fathers took leave, on average. However, effect sizes are weak; leave-taking explains approximately 2% of the variation in father-child relationship quality. There is also evidence suggesting that father-child closeness and communication are higher when fathers take 2 or more weeks of leave compared to when fathers take one week of leave (t -tests indicate significant differences at $p = .038$ and $p = .008$, respectively). Second, fathers who take leave have higher levels of father engagement when children are approximately 5-years-old compared to fathers who do not take leave; mothers report higher co-parenting support and relationship satisfaction if fathers take leave; and fathers rate themselves as better fathers if they take leave. Once again, effect sizes are weak, because leave-taking explains 1–3% of the variation in the mediating factors. There is also evidence that father engagement is higher and mothers report being more satisfied in their relationships with fathers, on average, when fathers take 2 weeks or more of leave compared to when fathers take one week of leave (t -tests indicate significant differences at $p = .018$ and $p = .002$, respectively).

Before testing our hypotheses, we also examined correlations between our key variables. A correlation matrix is presented in Table 2, and results show a weak positive correlation between leave-taking and each indicator of father-child relationship quality. However, the correlations for taking 2 or more weeks of leave are consistently stronger compared to taking one week of leave, and only the correlations between taking 2 or more weeks of leave and father-child relationship quality are statistically significant. Results also suggest that each of the mediating variables is positively correlated with father-child relationship quality, as expected (and the correlation coefficients are statistically significant); correlation coefficients suggest modest correlations between most of the mediating variables and indicators of father-child relationship quality (coefficients ranging from .20 to .30), but a weaker correlation between coparenting quality and father-child relationship quality (coefficients of .12 or less). Results in Table 2 also suggest that although all of the mediating variables are positively correlated as expected, none of these correlations is especially strong (all less than .45). As such, treating these as separate mediating variables is appropriate.

To test our first hypothesis, we use OLS regression models to analyze the associations between paternity leave-taking and children's reports of father-child relationship quality at age 9. Results are reported in Table 3. As shown in the first column (see Table 3a), taking one or 2 or more weeks of leave is positively associated with father involvement. A Wald test showed that these coefficients are not statistically different from one another ($p = .062$). The positive association between taking one week of leave and father involvement persists in the selection models, but the association between taking 2 or more weeks of leave is no longer significant. Additionally, as shown in the middle columns of Table 3(b), taking one week or 2 or more weeks of leave is positively associated with father-child closeness. A Wald test showed that the coefficients for one and 2 or more weeks of leave are statistically different from one another ($p = .024$). These results persist in the corresponding selection model. Finally, as shown in the last two columns of Table 3(c), taking 2 or more weeks of leave is positively associated with father-child communication, and this association persists in the selection model. However, taking one week of leave is not associated with father-child communication, and a Wald test confirmed that the coefficients for one and 2 or more weeks of leave are statistically different from one another ($p = .019$). Overall, the results in Table 3 largely support the first hypothesis that paternity leave-taking, and especially leaves lasting 2 or more weeks, is positively associated with 9-year-old children's perceptions of father-child relationship quality.

Results from KHB analyses that assess the second hypothesis regarding whether the associations between paternity leave-taking and father-child relationships are mediated by father engagement, co-parenting support, relationship satisfaction, and "good father" identities are presented in Table 4. (Note that coefficients in Table 4 are slightly different than those in Table 3 because KHB analyses rescale the coefficients to allow these to be directly compared to each other and because IPTW is used in these models). Consistent with results from Table 3, the total effect estimates for taking one and 2 or more weeks of leave are positively associated with each aspect of father-child relationship quality (with the exception of the association between taking one week of leave and father-child communication). Furthermore, as expected, there is evidence that the direct effect estimates for the extent to which leave-taking predicts father-child relationship quality become lower

and less significant compared to the total effect estimates (often becoming statistically nonsignificant), after the mediating variables are considered.

As shown in the first panel (a) of Table 4, we do not find support for our expectations regarding mediation in explaining the associations between one week of leave-taking and father involvement, father-child closeness, and father-child communication; that is, the total indirect effect estimates for each aspect of father-child relationship quality are not statistically significant. However, as shown in the second panel (b) of Table 4, results for the association between taking 2 or more weeks of paternity leave and father-child relationship quality support our hypothesized expectations for mediation. Specifically, the total indirect effect estimate is statistically significant for father involvement and father-child communication, and the mediating variables collectively explain about 32–45% of the association between taking 2 or more weeks of leave and these two indicators of father-child relationship quality. Furthermore, the results suggest that a statistically significant portion of the association between taking 2 or more weeks of leave and father-child relationship quality was explained by mothers' relationship satisfaction (12–23% of the total effects explained). Patterns of father engagement (13–16% of the total effects explained) and "good father" identities (6–10% of the total effects explained) also contributed to the total indirect effect in predicting father involvement and father-child communication, but were not statistically significant individually.

Discussion

Paternity leave-taking is believed to be beneficial to families, but research on these potential benefits is limited—especially within the U.S. context. The current study draws from a life course perspective and the concept of cumulative advantage to build upon theories about how fathers' identities matter for paternity leave-taking and fathering behaviors. We focus on analyzing the extent to which paternity leave-taking is associated with children's reports of father-child relationships 9 years after their birth. By utilizing children's reports and longitudinal data, our study advances our understanding of the potential implications of paternity leave-taking. The results suggest that taking paternity leave, and taking 2 or more weeks of leave in particular, seems to enhance father-child bonds throughout childhood, at least in part because it encourages parents' relationship satisfaction, as well as fathers' engagement and "good father" identities to a lesser extent. Consequently, paternity leave-taking appears to be positively associated with 9-year-old children's perceptions of fathers' involvement, father-child closeness, and the quality of father-child communication.

First, we found support for our hypothesis that paternity leave-taking, and especially relatively longer lengths of leave-taking in the U.S. context (i.e., 2 weeks or more), would be positively associated with father-child relationship quality. Consistent with a life course perspective, these findings suggest that early family experiences are important in shaping later family outcomes (DiPrete & Eirich, 2006; Elder, 1998; Gilligan et al., 2018). Specifically, when fathers have the ability to take time off work after the arrival of a new child—and commit to taking more time off than most fathers typically do in the United States—they may be able to more effectively nurture better relationships with their child. Fathers and their children are inextricably linked (Elder, 1994), and having a relatively

longer period of time (within the context of the U.S.) together immediately following birth may enable fathers and their children to bond (Petts & Knoester, 2018). This bonding period may increase the likelihood that fathers engage in sensitive, responsive parenting (Lamb & Lewis, 2010; McKeering & Pakenham, 2000). Children may also be more likely to develop secure attachments to their father (Cabrera et al., 2008; Waldfogel, 2006). As such, paternity leave-taking may help to facilitate a family environment that promotes positive child development and fosters better relationships between fathers and their children.

In addition, we found support for our hypothesis that fathers' engagement, parental relationship dynamics, and fathers' identities would mediate at least some of the relationship between paternity leave-taking and father-child relationship quality. That is, we found evidence that part of the reason why taking 2 or more weeks of paternity leave may lead to 9-year-old children expressing greater satisfaction with fathers' involvement and reporting better father-child communication seems to be that longer periods of paternity leave-taking links to parental relationship satisfaction, as well as fathers' engagement and fathers' identities to a lesser extent. These results further highlight the interdependence of family relationships because the linked lives of fathers, children, and mothers are bound to each other (Elder, 1994; McLanahan, 2004).

Moreover, these mediating processes suggest that paternity leave-taking patterns may provide advantages to children that accumulate over time. In addition to providing time for fathers and children to bond, leave-taking may also help to strengthen parental relationships and encourage fathers to be, and identify as, engaged and overall "good fathers" (Almqvist & Duvander, 2014; Bünning, 2015; Kotsadam & Finseraas, 2011; Rehel, 2014; Petts & Knoester, 2019; Pragg & Knoester, 2017). Consistent with previous research and our hypothesized mediation processes, parental relationship dynamics appear to have implications for the quality of father-child relationships (Cox et al., 2001; Erel & Burman, 1995). Thus, children may benefit both from the initial time with fathers that paternity leave offers as well as from the accumulating benefits from fathering commitments that may add up over time.

Limitations and Future Research Directions

Our study has some limitations to acknowledge. First, these data do not contain specific information about what paternity (or parental) leave programs to which fathers had access or what type of leave they took. We define paternity leave as taking time off work for the birth of a child, but fathers who take leave may be using a parental leave policy (time off through the Family and Medical Leave Act or a paid or unpaid workplace parental leave policy) or other forms of leave such as sick, vacation, or personal days (which could be paid or unpaid). We examined variations between paid and unpaid leave in supplementary analyses, and there was some evidence that the observed associations between taking 2 or more weeks of leave and father-child relationships were stronger when fathers took paid leave. However, these results are not presented given endogeneity and selection concerns. Future studies should focus on type of leave to assess whether certain types of leave are more/less likely to provide benefits to families.

Second, our study does not fully account for potential issues related to selection and endogeneity. It is possible that unobserved factors (e.g., whether fathers have access to paternity leave from their employer, workplace support for taking leave, current parenting practices—including previous leave-taking experience—among fathers who have other children, or differences among fathers in other unmeasured factors such as relevant personality characteristics) may be influencing the associations highlighted in our study. To the extent we were able, we accounted for selection due to observed characteristics by using augmented inverse propensity weighted estimators and inverse probability of treatment weighting, as well as including control variables to minimize selection effects on key variables. We also limited our sample to fathers who did not specify that they lacked access to leave. Yet, given our reliance on secondary survey data in our study, we are not able to fully eliminate selection and endogeneity issues. Ideally, it would be helpful to have information from men prior to transitioning to fatherhood regarding access to leave, attitudes about fatherhood (and fathers' identities), parents' relationship quality, and other important factors, and then follow these men over time as they transition into parenthood to more fully account for selection factors.

In supplementary models, we incorporated interaction terms to assess whether observed relationships were moderated by whether fathers were transitioning to parenthood, and these interaction terms were not statistically significant. We also split the sample between first-time fathers and fathers with other children; leave-taking was positively associated with father-child relationship quality in both subsamples, but these positive associations were only statistically significant in the sample of fathers with other children. It is unclear whether these variations provide evidence of selection effects (i.e., fathers with other children better know how to establish good relationships with their child) or are due to variations in sample size (42% of fathers were first-time fathers; $n = 551$), particularly because there were no variations in the associations between leave-taking and father-child relationship quality in models using interaction terms. Unfortunately, in lieu of ideal data, we utilize the best available data to assess the association between paternity leave-taking and father-child relationship quality. Given that results from our study suggest that longer periods of leave may be beneficial for father-child relationship quality, future studies should continue work in this area using other innovative datasets or strategies to reduce the problems of selection and endogeneity.

Third, future studies should also consider the family contexts and fathering behaviors of fathers who are not employed at the time of a child's birth because these fathers would also have time to bond with their child (similar to fathers on paternity leave). However, the experiences of unemployed fathers may be different due to cultural norms emphasizing the importance of breadwinning for men (Marsiglio & Roy, 2012). We included fathers who were not employed at the time of the child's birth in supplementary analyses, and results were consistent with those presented; father-child relationship quality is higher when fathers take one or 2 or more weeks of leave compared to both unemployed fathers and fathers who do not take leave, and there was not a significant difference in father-child relationship quality between unemployed fathers and fathers who do not take leave. These results are not included due to selection issues associated with being unemployed, and models estimating selection effects for both unemployed and employed fathers did not converge.

Finally, although we theorize that the associations between paternity leave-taking and father-child relationship quality may be due, in part, to the processes of developing paternal sensitivity and secure attachments to a child, the present data do not contain information on these processes. Future research should focus on the specific family processes that occur during periods of leave to better understand how fathers utilize their time while on leave and what consequences this may have for families.

Practice Implications

The findings of our study have implications for families and policymakers who aim to strengthen families and promote higher quality father-child relationships. Most notably, it is important to revisit the context of leave-taking in the United States. The current structure of paternity leave in the United States provides limited opportunities for fathers to take leave and, in fact, often deters fathers from taking leave (Albiston & O'Connor, 2016; Williams et al., 2013). Furthermore, access and ability to take leave is often limited to high-SES families (Klerman et al., 2012; Winston, 2014). Thus, a lack of a national paid family leave policy limits access to important benefits for American families. Consequently, the current structure may be exacerbating inequalities. That is, the inequalities that exist in access to leave (see McKay et al., 2016; O'Brien, 2009; Petts, Knoester, & Li, 2018) may accumulate over time such that fathers who are able to take [longer] paternity leaves may be better able to bond with infant children and have more satisfying parental relationships that then promote stronger father-child relationships compared to fathers with less access to paternity leave. Providing more equitable access to paternity leave, as well as encouraging fathers to take longer periods of paternity leave, may help to change these patterns and strengthen family relationships. Results from our study suggest that there are long-term benefits of leave-taking for families, even if this leave is relatively short compared to countries with more generous leave policies. Consistent with research in other cultural contexts, implementing even short periods of [paid] leave can provide important benefits to families (Pailhé et al., 2018).

Conclusion

Overall, our study is the first known to assess the associations between paternity leave-taking and children's perceptions of father-child relationship quality in the United States. Our study is also novel in its focus on disadvantaged families, its use of longitudinal data, and its consideration of children's reports of relationships with fathers. Results suggest that paternity leave-taking, and especially relatively longer leave-taking, is positively associated with children's satisfaction with father involvement, their feelings of father-child closeness, and the quality of father-child communication and that these associations are, at least in part, explained by fathers' engagement, parental relationship satisfaction, and fathers' identities. Future work should further examine the consequences of parental leave-taking for families within the United States and seek to consider whether and how expansions of family leave opportunities may matter for American families.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Sample Characteristics

Variables	Full Sample				Paternity Leave				Effect Size ^b
	M (SD) or % (n)	Min	Max	None M (SD) or % (n)	One Week M (SD) or % (n)	2 weeks+ M (SD) or % (n)			
<u>Paternity leave-taking (Wave 2)</u>									
No leave	20% (262)	0	1	--	--	--	--	--	--
One week	59% (774)	0	1	--	--	--	--	--	--
2 weeks or more	21% (283)	0	1	--	--	--	--	--	--
<u>Dependent variables (Wave 5)</u>									
Father involvement	1.89 (1.15)	0	3	1.59 (1.23)	1.93 (1.13)	2.08 (1.06)		0.02 ^{***}	
Father-child closeness	2.25 (1.09)	0	3	1.96 (1.22)	2.28 (1.08)	2.43 (0.95)		0.02 ^{***}	
Father-child communication	0.00 (0.80)	-1.42	1.20	-0.19 (0.86)	0.01 (0.79)	0.15 (0.75)		0.02 ^{***}	
<u>Mediating variables (Wave 4)</u>									
Father engagement	3.42 (1.66)	0	7	3.07 (1.86)	3.44 (1.59)	3.70 (1.58)		0.02 ^{***}	
Co-parenting support	2.75 (0.34)	1	3	2.66 (0.33)	2.75 (0.31)	2.79 (0.29)		0.01 ^{***}	
Relationship satisfaction	3.47 (1.30)	1	5	3.06 (1.35)	3.49 (1.26)	3.76 (1.22)		0.03 ^{***}	
“Good Father” identity	1.21 (0.77)	0	2	1.07 (0.81)	1.23 (0.76)	1.29 (0.74)		0.01 ^{**}	
<u>Controls (Wave 1)</u>									
<u>Age</u>									
Mother age	25.95 (6.06)	16	44	24.68 (5.61)	25.96 (6.00)	27.08 (6.43)		0.02 ^{***}	
Father age	28.41 (7.13)	16	57	27.76 (7.43)	28.46 (7.02)	28.87 (7.13)		0.00	
<u>Race/Ethnicity</u>									
Mother is White ^a	30% (395)	0	1	10% (41)	61% (239)	29% (115)		0.18 ^{***}	
Mother is Black	43% (574)	0	1	31% (176)	54% (309)	15% (89)		0.25 ^{***}	
Mother is Latina	23% (299)	0	1	14% (43)	65% (195)	20% (61)		0.08 [*]	
Mother is other race/ethnicity	4% (51)	0	1	10% (5)	57% (29)	33% (17)		0.07 [*]	
Father is White ^a	27% (359)	0	1	7% (28)	61% (219)	31% (112)		0.22 ^{***}	

Variables	Full Sample				Paternity Leave			Effect Size ^b
	M (SD) or % (n)	Min	Max	None M (SD) or % (n)	One Week M (SD) or % (n)	2 weeks+ M (SD) or % (n)		
Father is Black	45% (597)	0	1	29% (176)	55% (326)	16% (95)	0.23 ***	
Father is Latino	24% (309)	0	1	16% (50)	64% (199)	19% (60)	0.07	
Father is other race/ethnicity	4% (54)	0	1	17% (9)	55% (30)	28% (15)	0.03	
Education								
Mother education	2.37 (1.03)	1	4	2.07 (0.94)	2.35 (1.03)	2.71 (1.03)	0.04 ***	
Father education	2.33 (1.00)	1	4	2.08 (0.90)	2.30 (1.01)	2.66 (0.99)	0.04 ***	
Income								
Father income	3.35 (2.19)	0	8	2.69 (1.88)	3.48 (2.12)	3.96 (2.30)	0.04 ***	
Mother income	2.04 (2.07)	0	8	1.77 (1.80)	1.94 (2.03)	2.62 (2.26)	0.02 ***	
Work Hours								
Mother does not work	34% (448)	0	1	20% (92)	62% (276)	18% (80)	0.06	
Mother works part-time	21% (275)	0	1	19% (51)	60% (165)	21% (59)	0.02	
Mother works full-time ^a	45% (596)	0	1	21% (130)	55% (323)	24% (143)	0.06	
Father works part-time	11% (141)	0	1	30% (42)	50% (71)	20% (28)	0.09 **	
Father works full-time ^a	89% (1178)	0	1	19% (225)	60% (700)	21% (253)	0.03	
Professional occupation ^a	17% (226)	0	1	13% (29)	56% (126)	31% (71)	0.12 ***	
Labor occupation	49% (650)	0	1	22% (144)	61% (395)	17% (111)	0.10 **	
Sales occupation	8% (112)	0	1	17% (19)	69% (77)	14% (16)	0.07	
Service occupation	24% (309)	0	1	23% (72)	53% (164)	24% (73)	0.07	
Other occupation	2% (22)	0	1	9% (2)	50% (11)	41% (9)	0.07	
Married ^d	35% (468)	0	1	10% (44)	60% (282)	30% (142)	0.23 ***	
Cohabiting	40% (523)	0	1	21% (108)	61% (318)	18% (97)	0.06	
Nonresident father	25% (328)	0	1	34% (110)	53% (174)	13% (44)	0.21 ***	
Number of other children	1.03 (1.20)	0	5	1.37 (1.40)	1.01 (1.18)	0.78 (0.97)	0.03 ***	
Religious participation	1.95 (1.35)	0	4	1.83 (1.31)	1.98 (1.37)	1.99 (1.34)	0.00	
Child is male	51% (676)	0	1	20% (137)	58% (392)	22% (147)	0.02	

Variables	Full Sample			Paternity Leave			Effect Size ^b
	M (SD) or % (n)	Min	Max	None M (SD) or % (n)	One Week M (SD) or % (n)	2 weeks+ M (SD) or % (n)	
Child age (Wave 5)	9.30 (0.31)	8.83	11.08	9.30 (0.30)	9.31 (0.33)	9.30 (0.28)	0.00
First child	42% (551)	0	1	16% (90)	60% (331)	24% (130)	0.08*
Father did not establish paternity	14% (182)	0	1	38% (70)	51% (93)	10% (19)	0.20*
Positive father attitudes	3.77 (0.39)	1	4	3.75 (0.42)	3.76 (0.41)	3.84 (0.30)	0.01**
Traditional gender attitudes	37% (484)	0	1	19% (96)	63% (302)	18% (86)	0.07
Engaged father attitudes	67% (881)	0	1	19% (168)	58% (513)	23% (200)	0.05
Mother's health	2.96 (0.91)	0	4	2.87 (0.91)	2.92 (0.92)	3.15 (0.82)	0.01***
<i>n</i>		1319		262	774	283	

^aUsed as reference category.

^bSignificant differences by length of paternity leave were determined by Chi-square tests for categorical variables and ANOVA for continuous variables). Cramer's V is reported to show effect size for Chi-square tests and eta-squared is reported to show effect size for ANOVA.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Correlation Matrix for Key Variables

	Father involvement	Father-child closeness	Father-child communication	One week of leave	2 or more weeks of leave	Father engagement	Co-parenting support	Relationship satisfaction
Father involvement	--							
Father-child closeness	.666***	--						
Father-child communication	.617***	.648***	--					
One week of leave	.036	.034	.014	--				
2 or more weeks of leave	.084**	.087**	.099***	-.623***	--			
Father engagement	.275***	.310***	.278***	.013	.088**	--		
Co-parenting support	.086**	.100***	.120***	.033	.070*	.151***	--	
Relationship satisfaction	.251***	.292***	.275***	.027	.122***	.332***	.444***	--
“Good father” identity	.195***	.202***	.209***	.028	.055*	.294***	.102***	.179***

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3
 Associations between Paternity Leave-Taking and Children's Perceptions of Father-Child Relationship Quality

Length of Paternity Leave	(a) Fathers' Involvement			(b) Father-Child Closeness			(c) Father-Child Communication											
	Regression Model		Selection Model	Regression Model		Selection Model	Regression Model		Selection Model									
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>									
One week	0.30	0.14	.031	0.18	0.09	.041	0.32	0.15	.027	0.20	0.09	.023	0.11	0.06	.064	0.05	0.06	.372
2 or more weeks	0.36	0.17	.035	0.20	0.11	.059	0.48	0.18	.009	0.27	0.11	.011	0.21	0.07	.005	0.19	0.08	.015

Note. $n = 1319$. Generalized ordered logistic regression is used to predict father involvement and father-child closeness; OLS regression is used to predict father-child communication. Each model controls for age (mother and father), race/ethnicity (mother and father), education (mother and father), income (mother and father), hours worked (mother and father), father occupation, parental relationship and resident status, father's religious participation, number of other children, whether father established paternity at birth, father attitudes (positive father attitudes, traditional gender attitudes, and engaged father attitudes), child gender, child age, and mother's self-reported health at birth. (Full results from regression models can be found in the online supplement.) Selection models estimated using AIPW ($n = 1302$).

Table 4
 Mediation Analyses of Paternity Leave-Taking and Father-child Relationship Quality using the KHB Method

Variables	Father Involvement			Father-Child Closeness			Father-Child Communication					
	b	SE	p	Mediation Effect (%)	b	SE	p	Mediation Effect (%)	b	SE	p	Mediation Effect (%)
Total Effect	0.33	0.15	.028	--	0.42	0.16	.010	--	0.05	0.06	.422	--
Direct Effect	0.26	0.15	.088	--	0.36	0.16	.027	--	0.01	0.06	.832	--
Indirect Effect	0.07	0.07	.317	21.36%	0.06	0.08	.449	14.43%	0.03	0.03	.283	73.48%
Father Engagement	0.02	0.03	.503	5.51%	0.02	0.04	.501	5.80%	0.01	0.01	.502	16.07%
Co-parenting Support	-0.01	0.01	.373	-3.20%	-0.02	0.02	.209	-5.65%	-0.00	0.00	.484	-7.12%
Relationship Satisfaction	0.04	0.03	.098	13.56%	0.05	0.03	.100	10.93%	0.02	0.01	.085	42.81%
“Good Father” Identity	0.02	0.02	.274	5.49%	0.01	0.01	.318	3.35%	0.01	0.01	.246	21.72%
(a) One week of leave												
Total Effect	0.47	0.19	.012	--	0.70	0.21	.001	--	0.15	0.07	.031	--
Direct Effect	0.32	0.19	.094	--	0.56	0.21	.007	--	0.08	0.07	.236	--
Indirect Effect via:	0.15	0.07	.039	32.49%	0.14	0.08	.088	20.40%	0.07	0.03	.030	45.10%
Father Engagement	0.06	0.04	.098	13.26%	0.08	0.05	.089	11.80%	0.02	0.01	.092	16.11%
Co-parenting Support	-0.02	0.02	.329	-4.26%	-0.04	0.03	.126	-6.36%	-0.00	0.01	.460	-3.95%
Relationship Satisfaction	0.08	0.04	.032	17.32%	0.08	0.04	.034	11.79%	0.04	0.02	.021	22.77%
“Good Father” Identity	0.03	0.02	.189	6.17%	0.02	0.02	.246	3.19%	0.02	0.01	.152	10.17%
(b) 2 or more weeks of leave												

Note. $n = 1302$. Ordered logistic regression is used to predict father involvement and father-child closeness; OLS regression is used to predict father-child communication. Each model controls for age (mother and father), race/ethnicity (mother and father), education (mother and father), income (mother and father), hours worked (mother and father), father occupation, parental relationship and resident status, father’s religious participation, number of other children, whether father established paternity at birth, father attitudes (positive father attitudes, traditional gender attitudes, and engaged father attitudes), child gender, child age, and mother’s self-reported health at birth. Models are weighted using IPTW.