Factors Associated with Multiple-Partner Fertility among Fathers

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Abstract

Using data from males in the 2002 NSFG, we incorporate a life-course perspective to examine correlates of multiple-partner fertility, or having biological children with more than one partner. Preliminary multivariate analyses find that family background characteristics, individual factors, characteristics of sexual experiences and characteristics of fathers' first birth are associated with the odds of experiencing multiple-partner fertility. For example, older males, racial and ethnic minorities, those who grew up without both biological parents, a young age at first sex and at first birth, and having a first birth outside of marriage or cohabitation are associated with greater odds of multiple-partner fertility, while being born outside the United States, having parents who were married at the time of one's birth, and having more children with the mother of their first child are associated with reduced odds. We also examine factors associated with the *type* of multiple-partner fertility, highlighting those who had births within successive nonmarital relationships (compared with those who had at least one marital birth). Cohort trends suggest that multiple-partner fertility that occurs only outside of marriage has increased slightly, while multiple-partner fertility in marital relationships is declining. We find that fathers who are younger, black or Hispanic have greater odds of experiencing nonmarital multiple-partner fertility versus multiple-partner fertility with at least one marital birth.

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High rates of marital dissolution in the United States, combined with long-term increases in childbearing outside of marriage, have led to the occurrence of "multiple-partner fertility," or having biological children with more than one partner.[22,23,30] For example, the percentage of births that occur outside of marriage has increased from 18 percent in 1980 to 35 percent in 2003.[25,37] Declines in marriage and increases in nonmarital fertility may be linked to lower levels of father involvement and attachment to their child and their child's mother[22] and thus lead to increases in multiple-partner fertility. In addition, a growing percentage of births occur to unmarried cohabiting couples.[5,32] Because cohabiting relationships are less stable than marriages,[5,6] increases in cohabitation may also contribute to multiple-partner fertility.

An estimated one in three mothers and fathers of children born in urban areas have already had a child with a previous partner.[9] The implications of multiple-partner fertility for parents and children appear to differ by parent gender. Mothers are more likely to co-reside with children by multiple partners, while fathers are more likely to live apart from children by previous partners, which places these non-resident children at a greater risk of economic disadvantage.[8] Estimates of urban populations indicate that rates of multiple-partner fertility are especially high among low-income and minority groups,[9,15] which may contribute to disparities in social and economic outcomes through unstable unions for parents and resource depletion for children.[8,15]

Until recently, limited research has assessed the prevalence and correlates of multiple-partner fertility. This paper uses data from a new nationally representative survey to examine three research questions: 1) What is the prevalence and trends in multiple-partner fertility among males? 2) Are family and individual socio-demographic factors associated with multiple-partner

fertility among males?; 3) Are characteristics of men's first birth and first partner associated with their likelihood of experiencing multiple-partner fertility?; and 4) Do family, individual and first birth characteristics differentiate men who experience multiple-partner fertility in only nonmarital relationships from those who experience multiple-partner fertility in at least one marital relationship?

Understanding factors associated with multiple-partner fertility is important because of its potentially negative consequences for women, men and children. In general, children from a previous union reduce parental union formation prospects, especially for mothers[18,36] although findings for fathers have been mixed.[2,33] One study found that having children is negatively associated with men's subsequent chances of forming unions.[2] However, another study found that neither resident nor nonresident children is associated with men's chances of entering a new marriage, but men with nonresident children have greater odds of entering into a cohabiting union.[33] Men may be unwilling to assume responsibility for a new partner's previous children, and women may be reluctant to marry a partner with financial obligations to children from other relationships.[38] Couples in which the father (but not the mother) has already had children with a previous partner are less likely to marry or cohabit following the birth of a child.[10] Moreover, having children with multiple partners is often a source of tension in couple relationships following a new child's birth.[21] For example, both mothers and fathers with previous births to other partners report lower levels of supportiveness, more arguing, and lower reports of global relationship quality than those with no previous birth partners.[8] The prevalence of multiple-partner fertility among African Americans (both men and women) may co-occur with the decline in marriage among this population.[30]

Multiple-partner fertility also has important consequences for children. When men father children with more than one woman, they are faced with competing demands on their time and resources,[21-23,29] which may lead to "swapping" their commitment from children they had in a previous relationship to children with whom they are currently living.[23,29] This reduces social and economic investments in non-resident children as fathers take on new parenting roles.[23] For example, among non-resident fathers, those with biological children in a new union pay significantly less child support than other non-resident fathers[23] and, after controlling for the amount of child support ordered, the amount of total support paid decreases with the number of previous birth partners.[28]

Having children in multiple households also affects fathers' visitation with their children. One study found that an increase in the number of co-resident biological and step-children of fathers is associated with a reduction in the frequency of visitation with biological children in other households.[22] An analysis of children born in urban areas indicates that fathers who have children with previous partners are less likely to have contact with a subsequent child within about three years of the birth.[8] The link between multiple-partner fertility and lack of contact is of particular concern because low levels of contact are associated with reduced psychological well-being and lower academic achievement among children, as well as with greater behavioral problems and more troubled peer relationships.[4,17,24,31] Father-absent families may also experience uneven or inconsistent parenting behaviors, which can also have negative consequences for children.[8,26]

A better understanding of factors associated with multiple-partner fertility may provide information on target populations for intervention. This research paper expands on previous research by using a recent nationally representative sample of males to examine the prevalence

of multiple-partner fertility. This paper specifically examines the type of unions in which multiple-partner fertility occurs, comparing multiple-partner fertility that occurs only outside of marriage with multiple-partner fertility that occurs in marital relationships.

Framework

We use a life-course approach to provide a framework for assessing factors associated with fathering children with multiple women. One principle of a life-course perspective is that life-course transitions, such as the transition to a birth with another partner, can be understood only within the context of the social relationships in which a person is involved.[1,12] In addition, a life-course approach emphasizes that individuals bring a history of experiences to their decision-making. Therefore, we posit that multiple-fertility is influenced not only by individual characteristics, but also by childhood relationships with family members and by characteristics of adult relationships with partners.

Critical life-course concepts of the *timing* and *sequencing* of life events also can be applied to research on multiple-partner fertility.[11] We hypothesize that the *timing* of sexual experience and the *timing* of first births may influence the likelihood of experiencing multiple-partner fertility. Age is also an important factor, since older men have a longer exposure time to shift in and out of relationships. The relative *sequencing* of life events may also influence individual decisions and behaviors, including fertility behaviors. Thus, we posit that the relative sequencing of union formation and fertility may also influence multiple-partner fertility; for example, men who have a first birth outside of a union are hypothesized to have a greater risk of subsequent fertility with another partner.

Factors Associated with Multiple-Partner Fertility

Our literature review focuses primarily on five current studies that have examined factors associated with multiple-partner fertility. The first three studies assessed prevalence and correlates of multiple-partner fertility among families with children born in urban areas from the Fragile Families and Child Well-being survey (Fragile Families).[7,9,30] Two other studies examined first-birth characteristics of closely-spaced multiple-partner fertility among young adult women from the National Longitudinal Study of Adolescent Health,[16] and cohort differences in multiple-partner fertility among males in the National Survey of Family Growth.[15]

Family and Individual Factors Associated With Multiple-Partner Fertility. A life-course approach highlights the role of individual histories in decision-making, and we posit that family structure in males' family of origin will influence future family formation and their risk of multiple-partner fertility. Researchers have consistently found an association between living in a non-intact family in childhood and union dissolution and nonmarital childbearing in adulthood, highlighting intergenerational trends in family formation patterns.[3,27] And some research has found that family structure is associated with multiple-partner fertility. For example, growing up with two biological parents is associated with reduced odds of multiple-partner fertility among urban parents.[8]

Other socio-demographic factors are also associated with multiple-partner fertility. Because nonmarital childbearing is higher among low-income populations and among racial and ethnic minorities,[9,15,16] trends in childbearing outside of marriage may lead to especially high rates of multiple-partner fertility in these populations. Moreover, findings from studies of urban parents show that multiple-partner fertility patterns vary by race/ethnicity.[8,9,13,16,30] On average, African-American parents are about twice as likely as whites to experience multiple-partner

fertility, while multiple-partner fertility among Hispanic mothers and fathers is between the rate of whites and blacks.[16,30] Multivariate analyses reveal that African-American mothers and fathers have greater odds of multiple-partner fertility than whites.[9] Alternatively, immigrants have lower odds of multiple-partner fertility than those who were born in the U.S.[8,16] Racial/ethnic differences may reflect, in part, differences in socioeconomic status. For example, young women whose parents were in poverty had increased odds of a subsequent birth with a new partner.[16] The odds of multiple-partner fertility also increase with age[9,14,16,30] reflecting longer exposure to this risk.

A number of other individual characteristics have been found to be associated with multiple-partner fertility. More religious mothers and fathers with college degrees were less likely to have children with multiple partners.[9] Conversely, mothers who worked in the year before their baby's birth, mothers and fathers who thought about aborting the focal child, men in only fair or poor health, and fathers with some history of incarceration had increased odds of experiencing multiple-partner fertility.[9,13] In analyses of young mothers, Guzzo and Furstenberg[16] found that those who experienced troubles in school or who had repeated a grade, and those who initiated sexual activity before age 15 had greater odds of a subsequent birth with a new partner. Although causality has not been determined, men who have ever been incarcerated are also more likely, on average, to report multiple-partner fertility.[19]

Characteristics of First Births and Multiple-Partner Fertility. Characteristics of women's first births are also associated with the transition to subsequent births with new partners. For example, a study of births in urban areas found that although multiple-partner fertility is rare among teen mothers, mothers whose first birth occurred between the ages of 14-16 and 17-18 were more than twice as likely to have had children with multiple partners,

compared to mothers who began childbearing at age 30 or older.[9,13] Also, a longer time since last birth, a weak or non-existent relationship with the father of their first child, and an unwanted first birth increase the odds that young mothers will experience a closely-spaced birth with a new partner.[16]

Marital/cohabitation status at first birth is an indicator of commitment to the relationship and child that is associated with the likelihood of having a subsequent birth with a new partner. For example, young women who had a first birth in a cohabiting relationship had lower odds of multiple-partner fertility than women who did not co-reside with the father.[16] Similarly, men who were married at the time of a prior birth had reduced odds of having a child with a new partner.[9,15,16] Because cohabiting relationships tend to be less stable than marriages, having a birth within a cohabiting union may be associated with greater odds of multiple-partner fertility. In addition, mothers and fathers in *current* cohabiting, visiting, and non-romantic relationships were more likely to report multiple-partner fertility than married parents; however, current marital status may be a consequence of partners' fertility history.[9,13,30] Moreover, fathers who have had more than one child with only one mother report the highest quality relationships,[8] which may be associated with a reduced risk of multiple-partner fertility.

The premise of recent work on multiple-partner fertility is that the majority of men experiencing multiple-partner fertility do so within un-committed nonmarital relationships.[9,15,16] However, limited data have been available to assess the types of relationships within which multiple-partner fertility occurs. For example, men who have children within a series of marital relationships may differ from men who experience multiple-partner fertility within only nonmarital relationships.

Hypotheses

Based on our review of the literature, we hypothesize that: 1) multiple-partner fertility has been increasing, especially multiple-partner fertility that occurs outside of marriage; 2) family and individual characteristics (including family structure outside of two biological parents, African American race/ethnicity and an early timing of first sex) will be associated with a greater risk of multiple-partner fertility, while being born outside of the U.S. will be associated with reduced odds; 3) characteristics of the first birth (including a young age at first birth and a nonmarital first birth) will be associated with greater odds of multiple-partner fertility; and 4) factors associated with multiple-partner fertility that occurs only within nonmarital relationships will differ from those associated with multiple-partner fertility that occurs within at least one marital relationship. We hypothesize that more disadvantaged family backgrounds (including family structures outside of two biological parents and racial and ethnic minority status) will be associated with greater odds of a sequence of nonmarital multiple-partner fertility compared with multiple-partner fertility that includes at least one marital birth.

Method

Data and Sample

We used data from the 2002 National Survey of Family Growth (NSFG) male file for analyses of multiple-partner fertility. The survey, conducted by the National Center for Health Statistics, was administered to 4,928 males between the ages of 15 and 45, with over-samples of Hispanics, African-Americans, and teenagers. Respondents were questioned about their sexual relationships, marital and cohabiting relationships, birth histories, and other factors relating to reproductive health and family formation. For analyses of multiple-partner fertility among fathers, we analyzed a sample of 1,731 men ages 16 to 45 who reported having at least one

biological child. Our sample includes 316 men who fathered children with more than one woman.

Measures

We examined two dependent variables. The first is a two-category variable, comparing those who experienced multiple-partner fertility with those who experienced single-partner fertility. We created measures of multiple-partner fertility from responses to questions about biological children in the relationship histories enumerated in the questionnaire.[a] The second dependent variable specifies the type of multiple-partner fertility by marital status, comparing men who fathered children with only one woman (single-partner fertility), men who had only nonmarital multiple-partner births (nonmarital multiple-partner fertility), and men who experienced multiple-partner fertility and were married to at least one of the mothers of their children, including 41 males who had only marital births and 147 men who had at least one marital birth and one nonmarital birth (multiple-partner fertility with at least one marital birth).

We include measures of individual, family background, and sexual history characteristics, as well as characteristics of the first birth, in bivariate and multivariate analyses. Individual characteristics include age at interview date, race/ethnicity, and a measure of whether or not the respondent was born outside the U.S. Family background characteristics include a dichotomous measure of whether the respondent's parents were married at his birth and a categorical measure of family structure at age fourteen, comparing those who grew up with two biological or adoptive parents with those who grew up with one biological and one adoptive parent, a single biological parent, or some other family structure. We include measures of the number of siblings that were born to the respondent's mother and a dichotomous measure of

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[a] We removed four respondents who reported duplicate relationships, marital or cohabiting relationships having the same relationship start date.

mother's labor force status when the respondent was between the ages of five and fifteen (comparing those whose mothers worked full-time for pay with all others who worked less than full-time for pay). Parent education is based on the parent with the highest level of education and compares those who completed high school or less with those who completed some college or more. We include a dichotomous measure of whether or not the respondent's mother had her first birth before age twenty, as well as the respondent's age at first sex. Finally, characteristics of the first birth include the respondent's age at first birth, whether he was married, cohabiting, or in neither a marital or cohabiting relationship with the mother of his first child, and the number of children that he fathered with this woman.

Analytic Methods

We incorporated bivariate and multivariate analyses to assess factors associated with multiple-partner fertility. Bivariate chi-square and t-test models compare factors associated with categories of our dependent variables. For multivariate analyses, we use logistic regression to examine the dichotomous variable of whether men who have fathered children with more than one woman are different from men who have children with only one woman. Multinomial logistic regression allows us to examine whether men who experience multiple-partner fertility within nonmarital-only relationships differ from those who do so in at least one marital relationship and men who father children with only one woman.[20,34] All analyses were weighted and run in Stata to control for the complex sampling design of the NSFG 2002.

Results

Bivariate Results

Table 1 shows individual, family background, sexual history and first birth characteristics

for the full sample of fathers. The first set of columns displays these characteristics by type of

fatherhood (comparing multiple-partner fertility with single-partner fertility). Fathers who had

births with multiple partners accounted for 17 percent of the sample, and those fathers who had

children with a single partner comprised 83 percent of the sample. Additional analyses (not

shown here) eliminating very young fathers from the sample indicate that 18% of fathers aged

25-44 experienced multiple-partner fertility. Table 1 also includes information on the type of

relationships in which multiple-partner fertility occurred. Among fathers who experienced

multiple-partner fertility, 29 percent had all births outside of marriage and the remaining 71

percent had at least one birth in a marital relationship (including 24 percent in marital-only

relationships and 46 percent in at least one marital relationship and at least one nonmarital

relationship).

Insert Table 1 here

In an analysis of three birth cohorts of men (see Figure 1), we found cohort differences in

experiencing multiple-partner fertility by age 30. Specifically, 4.4 percent of men born between

1957 and 1962 fathered children within multiple marriages, compared to 0.3 percent of men born

between 1963 and 1967 and 0.9 percent of men born between 1968 and 1972. Cohort analyses

also indicate a decline in the proportion of men who reported experiencing both marital and

nonmarital multiple-partner births; 5.3 percent of men born between 1957 and 1962 reported

fathering children with different women within both marital and nonmarital relationships by age

30. This is in comparison to 2.4 percent of men and 2.6 percent of men born between 1963 and

1967 and between 1968 and 1972, respectively. Conversely, there were small increases in the likelihood of experiencing multiple-partner fertility in only nonmarital relationships. Of men born between 1968 and 1972, 3.2 percent fathered children within multiple nonmarital relationships, whereas 2.4 percent of men born between 1963 and 1967 and 1.3 percent of the oldest cohort reported fathering children in multiple nonmarital relationships.

* Insert Figure 1 here *

Bivariate findings in Table 1 indicate that men who experienced multiple-partner fertility were more likely than men who had children with only one mother to be older (average age of 37 years old vs. 35 years old) and to be African American (23 percent vs. 10 percent). We also found significant differences in family background characteristics between men who fathered children with multiple mothers compared with men who fathered children with one partner. Men who experienced multiple-partner fertility were less likely to be born to married parents, or to live with two biological or adoptive parents at age 14 than men with births to only one woman. Men who fathered children with multiple women had, on average, more siblings and were more likely to have a mother who was a teen at her first birth than other fathers. On average, men who fathered children with more than one mother had their first sexual experience at a much younger age than did other fathers. They were also more likely to have had their first birth at an early age. In fact, nearly one-third of men who experienced multiple-partner fertility had their first birth before age 20 (36 percent) compared with 11 percent of other fathers. Moreover, men who experienced multiple-partner fertility were less likely to be married at the birth of their first child and had fewer children with the mother of their first child, compared with men who fathered children with only one mother.

The last two columns of Table 1 compare characteristics of two groups of fathers who experienced multiple-partner fertility: those who had only nonmarital births and those who had at least one marital birth.[b] These analyses indicate that fathers who had only nonmarital multiple-partner births tended to be younger and to be African American or Hispanic compared with those who had at least one marital birth. In addition, fathers with only nonmarital multiple-partner births were more likely to have had a mother who worked full-time during their childhood.

Multivariate Results

Results from multivariate analyses indicate support for the hypothesis that family and individual characteristics are associated with multiple-partner fertility. Table 2 shows odds ratios from logistic regression models predicting multiple-partner fertility among fathers. Model 1, which includes individual and family background characteristics, shows that an older age, Hispanic or black race/ethnicity and growing up in an "other" family structure at age 14 are associated with greater odds of multiple-partner fertility. In contrast, being born outside of the United States is associated with lower odds of fathering children with more than one woman.

Insert Table 2 here

Model 2 includes additional controls for age at first sex and first birth characteristics. Results show that race/ethnicity, foreign-born status, and family structure were no longer significant after including characteristics of first sex and first birth. Current age is the only remaining significant finding from Model 1. In addition, Model 2 indicates that fathers who were neither married nor cohabiting with the mother of their first child at the time of that child's birth had more than three times the odds of fathering children with more than one woman. Men

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[b] Because only a small sample (n=41) experienced only marital multiple-partner births, we were unable to run separate analyses for this group.

who were older at first sex and at first birth and who had a greater number of children with first mother had reduced odds of multiple-partner fertility.

Table 3 shows odds ratios from multinomial logistic regression models predicting a three-level dependent variable comparing nonmarital only multiple-partner fertility and multiple-partner fertility with at least one marital birth with single-partner fertility. The reference category for Column 1 is multiple-partner fertility with at least one marital birth and the reference category in Columns 2 and 3 is single-partner fertility. Column 1 analyses indicate an older age is associated with reduced odds of experiencing nonmarital-only multiple-partner fertility versus multiple-partner fertility with at least one marital birth, while being Hispanic or black are associated with more than three times the odds of experiencing nonmarital-only multiple-partner fertility.

Insert Table 3 here

Results in Column 2 show that fathers who were older, Hispanic or black race/ethnicity, who lived with a single biological parent at age 14, and whose mother worked full-time during childhood had greater odds of fathering children with more than one woman within only nonmarital relationships than fathering children with just one woman. In contrast, several sexual history and first birth characteristics were associated with lower odds of nonmarital multiple-partner fertility versus single-partner fertility, including: older age at first sex, older age at first birth, and having a greater number of children with the woman who gave birth to respondent's first child.

Column 3 shows the odds of experiencing multiple-partner fertility with at least one marital birth versus experiencing single-partner fertility. Fathers who were older had increased odds of experiencing multiple-partner fertility with at least one marital birth than fathering

children with only one partner. Similar to findings in Column 2, older age at first sex and at first birth, and a greater number of children with first mother were also associated with reduced odds of multiple-partner fertility with at least one marital birth. However, unlike predictors of nonmarital-only multiple-partner fertility, race/ethnicity and family structure were not significantly associated with multiple-partner fertility that included at least one marital birth compared with single-partner fertility.[c]

Discussion

Limitations

This study has some limitations, primarily due to the nature of the data collection. First, the cross-sectional format of the NSFG survey limits the number of predictors available for analyses of multiple-partner fertility. However, retrospective event histories allow us to analyze family background and individual socio-demographic factors, as well as information on the transition to first sex and several characteristics of men's first birth experiences. Further, we would ideally differentiate factors associated with multiple-partner fertility within only marital relationships from those in only nonmarital relationships, and from those that experienced multiple-partner fertility in at least one marital and nonmarital relationship, but this level of differentiation was not available with the current sample. Specifically, because multiple-partner fertility is a relatively rare event, our analyses included a small sample of men experiencing multiple-partner fertility. Also, because birth histories were not collected within relationship files for females, we were not able to determine the prevalence of multiple-partner fertility among women. Finally, our measure of multiple-partner fertility – particularly nonmarital-only multiple-partner fertility – may be under-reported, because some unmarried males may not know

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[c]We also ran all multivarite models among a sample of fathers aged 25 and older and found comparable results.

whether or not they have fathered a child. However, these weaknesses are offset by the strengths of the NSFG data file for examining fertility experiences among fathers, including information that allows us to differentiate fertility with more than one partner.

The current study extends a very small research literature that identifies factors associated with multiple-partner fertility. Our analyses indicate that 17 percent of fathers aged 15-44 and 18 percent of fathers aged 25-44 have had children with more than one mother. Separate analyses indicate that men who reported multiple-partner fertility fathered more than one in four (28 percent) of the children reported by fathers in the NSFG data file.[19] Thus, a substantial percentage of children have been fathered by men who have also had children with other mothers. Research suggests that these children – particularly those with non-resident fathers – receive reduced financial and social investments from their fathers,[23,28] which may place them at risk for greater behavioral problems and reduced academic achievement compared with other children.[4,17,24,31]

We also examined the types of relationships within which multiple-partner fertility occurs. Almost one third of men who had children with more than one partner did so only in nonmarital relationships. Another 24 percent of men had children with multiple partners in only marital relationships; however, our sample size in this category was too small for separate analyses. A final 46 percent had children in both marital and nonmarital relationships. Our cohort analyses suggest no overall trend in multiple-partner fertility; however, the different *types* of multiple-partner fertility showed opposing trends. Small declines in marital-only multiple-parent fertility as well as declines in fertility across both marital and nonmarital relationships were counter-balanced by an increase in nonmarital-only multiple-partner fertility. This pattern matches trends in increasing nonmarital fertility,[25,37] as well as other research that suggests that

transitions to multiple-partner fertility are more prevalent within more recent cohorts.[15] Children born within these nonmarital relationships may suffer the greatest consequences of multiple-partner fertility, because their fathers are most likely to be nonresidential.[8,19] Analyses of future cycles of the NSFG will allow us to better test whether the prevalence of multiple-partner fertility is increasing across historical time. Our analyses also suggest that separate factors differentiate men who have experienced multiple-partner fertility in only nonmarital relationships from those who had a child in at least one marital relationship.

We incorporated a life-course perspective and found that multiple domains of men's experiences influenced their odds of multiple-partner fertility, including family background characteristics, individual socio-demographics and sexual experience, and characteristics of men's first births. Men who were older at the time of the survey had greater odds of multiple-partner fertility, including nonmarital-only compared with single-partner fertility and multiple-partner fertility in at least one marital relationship relative to single-partner fertility. This finding supports other research[9,14,16,30] and suggests that older males have had more time in which to potentially end relationships with birth partners and have children in new relationships.

Also as expected, racial and ethnic minorities had greater odds of multiple-partner fertility. However, in the full sample, these findings were attenuated once we added sexual history and first birth characteristics. These findings suggest that black and Hispanic males are more likely to experience multiple-partner fertility, in part because they have an earlier age at first sex and first birth, and because they are more likely to have a first birth outside of marriage or cohabitation. However, analyses predicting the type of relationship within which multiple-partner fertility occurs indicate that black and Hispanic males have greater odds of nonmarital-only multiple-partner fertility. Because racial and ethnic minorities have especially high odds of

nonmarital-only multiple-partner fertility, children of black and Hispanic males are thus at a greater risk of having a non-resident father with children from another relationship, which places them at economic and behavioral risk.[4,17,23,24,31] Alternatively, white males have greater odds of multiple-partner fertility in at least one marital relationship compared with nonmarital-only multiple-partner fertility. Non-resident children of these fathers also face greater risks of economic instability and lower visitation from their fathers than children who reside with their father.[22,23] In addition, fathers who have children in at least one marital relationship tend to have more biological children than other men who experience multiple-partner fertility,[19] which may spread their economic and visitation resources more thinly.[8,22]

Living arrangements in males' families while they were growing up were also associated with multiple-partner fertility. Men who lived in households without either biological parent at age 14 had increased odds of multiple-partner fertility and men who grew up with a single biological parent (generally with a single mother) had increased odds of nonmarital-only multiple-partner fertility relative to single-partner fertility. These findings support other research linking family structure with multiple-partner fertility,[8] and suggest that children's early experiences with family members may influence their ability to form stable relationships in adulthood.[27,35] Thus, historical increases in nonmarital childbearing and marital dissolution may lead to an increasing prevalence of multiple-partner fertility.[22,23,30] Alternatively, we found that males who were born outside of the U.S. had reduced odds of multiple-partner fertility, which supports previous research,[8,16] and suggests that there may be cultural differences in marital and fertility patterns.

As hypothesized within a life-course framework, our analyses also found that the timing of sexual experiences and characteristics of fathers' first births were associated with their odds of

experiencing multiple-partner fertility. An earlier age at first sex and earlier age at first birth were both associated with greater odds of multiple-partner fertility compared with single-partner fertility in all models, which supports some previous research.[9] These findings suggest that males who delay sexual intercourse and the timing of their first birth may be less likely to have children with more than one partner. To the extent that pregnancy prevention programs are effective at helping males delay sex and parenthood, they may indirectly reduce the incidence of multiple-partner fertility in the U.S. However, the link between early sex and births and multiple-partner fertility may also be endogenous. In other words, unobserved factors measuring a willingness to take risks may be associated with both early sex or fertility and multiple-partner fertility. Future analyses should test whether the association between the timing of sex and fertility and multiple-partner fertility remains, net of controls for endogeneity.

Our findings also support our hypothesis that males' attachment to the mother of their *first* child has implications for their risk of experiencing multiple-partner fertility. Specifically, men who were neither married nor cohabiting with the mother of their first child had more than three times the odds of multiple-partner fertility than men who were married to that mother, which supports some other research.[16] Other research has found that, at the time of the child's birth, many unmarried fathers want or intend to marry the mother of their child at some point in the future.[21] However, very few of these unmarried parents do eventually marry.[10] This finding suggests that those programs that can effectively intervene to help remove barriers to union formation among unmarried parents may also reduce the prevalence of multiple-partner fertility. In addition, men who father more children with the mother of their first child have reduced odds of multiple-partner fertility, a finding which supports, in part, research showing that men who father more than one child with a woman having stronger relationships.[8]

Conclusions

In conclusion, we have found that a substantial minority of fathers experience multiple-partner fertility, and that family background characteristics, individual socio-demographic factors, and characteristics of males' sexual experiences and first births are associated with the odds of experiencing multiple-partner fertility. Continued increases in nonmarital fertility and marital dissolution may contribute to the prevalence of multiple-partner fertility, which has negative implications for mothers, fathers and children.

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Table 1. Individual, family, sexual and birth history characteristics by fatherhood status among all fathers and those with multiple partner births

	Total Sample %	All Fathers			Multiple Partner Births		
		Multiple-partner fertility	Single-partner fertility		Only nonmarital births	At least one marital birth	
Individual Characteristics							
Average current age	35.0	37.0	34.6	***	34.3	38.0	***
Race/Ethnicity				***			***
Hispanic	19.8%	19.7%	19.8%		26.2%	17.1%	
Non-Hispanic white	62.0%	49.6%	64.6%		17.6%	62.9%	
Non-Hispanic black	12.4%	22.7%	10.2%		46.8%	12.7%	
Non-Hispanic other	5.8%	7.9%	5.3%		9.4%	7.3%	
Foreign born	18.2%	14.6%	18.9%		19.0%	12.8%	
Family Background							
Parents married at R's birth	89.9%	83.7%	91.2%	**	75.4%	87.1%	
Family structure at age 14				*			
Two biological/adoptive parents	74.2%	63.7%	76.4%		54.9%	67.4%	
One biological and one adoptive/step parent	9.0%	11.9%	8.4%		8.1%	13.5%	
Single biological parent	10.7%	14.6%	9.8%		24.3%	10.6%	
Other	6.1%	9.8%	5.4%		12.7%	8.5%	
Average number of siblings	2.8	3.1	2.7	*	3.1	3.1	
Mother worked full-time when R ages 5-15	42.5%	47.2%	41.5%		63.3%	40.6%	*
Parent education							
HS or less	56.7%	64.1%	55.1%		69.4%	62.0%	
Some college or more	43.3%	35.9%	44.9%		30.6%	38.0%	
Mother was a teen at first birth		49.0%	36.5%	*	45.7%	50.4%	
Sexual History							
Average age at first sex	17.0	15.5	17.3	***	15.1	15.6	
First Birth Characteristics							
Average age at first birth	25.1	21.6	25.8	***	21.6	21.6	
Marital / cohabitation status at first birth				***			
Married	63.6%	40.4%	68.5%		-	-	
Cohabiting	19.5%	19.2%	19.6%		-	-	
Neither	16.9%	40.4%	12.0%		-	-	
Average number of kids with first mother	1.8	1.6	1.8	**	1.7	1.5	
N=	**1731**	**316**	**1415**		**128**	**188**	
Weighted % =	**100%**	**17%**	**83%**		**29%**	**71%**	

*p<0.05, **p<0.01, ***p<0.001

Table 2. Odds ratios for logistic regression of having births to multiple partners, among fathers aged 15 to 45 years old

	Multiple Partner Fertility			
	Model 1		Model 2	
Individual Characteristics				
Current age (16-45)	1.09	***	1.17	***
Race/Ethnicity				
Hispanic	1.59	*	1.30	
Non-Hispanic white / non-Hispanic other	(1.00)		(1.00)	
Non-Hispanic black	2.19	**	1.23	
Foreign born	0.55	*	0.96	
Family Background				
Parents married at R's birth	0.63		0.75	
Family structure at age 14				
Two biological/adoptive parents	(1.00)		(1.00)	
One biological and one adoptive/step parent	1.65		1.07	
Single biological parent	1.71		1.42	
Other	1.91	*	1.40	
Number of siblings	1.14		1.13	
Mother worked full-time during R's childhood	1.23		1.21	
R's parent completed some college or more	0.90		1.16	
Mother was a teen at first birth	1.40		1.11	
Sexual History				
Age at first sex	--		0.88	**
First Birth Characteristics	--			
Age at first birth	--		0.82	***
Marital / cohabitation status at first birth	--			
Married	--		(1.00)	
Cohabiting	--		1.17	
Neither	--		3.68	***
Number of kids with first mother	--		0.54	**
N=	**1731**		**1731**	
F(DF)	**6.42(12)**	***	**9.57(17)**	***

*p<0.05, **p<0.01, ***p<0.001

Table 3. Odds ratios for multinomial logistic regression of having births to multiple partners, by type of multiple partner fertility (MPF)

	Nonmarital Only MPF vs. MPF with At Least 1 Marital Birth		Nonmarital Only MPF vs. Single Partner Fertility		MPF with At Least 1 Marital Birth vs. Single Partner Fertility	
Individual Characteristics						
Current age	0.92	**	1.09	***	1.18	***
Race/Ethnicity						
Hispanic	3.23	**	3.16	**	0.98	
Non-Hispanic white / non-Hispanic other	(1.00)		(1.00)		(1.00)	
Non-Hispanic black	7.19	***	5.85	***	0.81	
Foreign born	0.96		0.86		0.90	
Family Background						
Parents married at R's birth	0.84		0.62		0.74	
Family structure at age 14						
Two biological/adoptive parents	(1.00)		(1.00)		(1.00)	
One biological and one adoptive/step parent	0.72		0.74		1.03	
Single biological parent	1.85		2.20	*	1.18	
Other	1.24		1.64		1.32	
Number of siblings	0.98		1.14		1.16	
Mother worked full-time during R's childhood	1.85		1.82	*	0.98	
R's parent completed some college or more	0.84		0.97		1.15	
Mother was a teen at first birth	0.70		0.86		1.22	
Sexual History						
Age at first sex	1.01		0.89	*	0.88	*
First Birth Characteristics						
Age at first birth	1.05		0.83	**	0.79	***
Number of kids with first mother	1.29		0.61	**	0.47	**
N=	**1731**		**1731**		**1731**	
F(DF)	**9.49(30)**	***	**9.49(30)**	***	**9.49(30)**	***

*p<0.05, **p<0.01, ***p<0.001

Figure 1. Percent Experienced Multiple-Partner Fertility by Age 30, by Marital Status and Cohort

Legend:
- % Experienced Marital Only MPF by Age 30
- % Experienced MPF with Marital and Nonmarital Birth(s) by Age 30
- % Experienced Nonmarital Only MPF by Age 30

1957-1962: 11.0% total — 4.4%, 5.3%, 1.3%

1963-1967: 5.1% total — 0.3%, 2.4%, 2.4%

1968-1972: 6.7% total — 0.9%, 2.6%, 3.2%

Cohort