Published in final edited form as:
J Fam Issues. 2010 July 1; 31(7): 906–933. doi:10.1177/0192513X09351508.

Single Mothers, Single Fathers: Gender Differences in Fertility after a Nonmarital Birth

Karen Benjamin Guzzo[*] and **Sarah R. Hayford**[**]

Karen Benjamin Guzzo: guzzo@kutztown.edu; Sarah R. Hayford: sarah.hayford@asu.edu

[*] Department of Anthropology and Sociology, Kutztown University, P.O. Box 730, Kutztown, PA 19530

[**] School of Social and Family Dynamics, Arizona State University, P.O. Box 873701, Tempe, AZ 85287-3701

Abstract

Research on nonmarital fertility has focused almost exclusively on unmarried mothers, due in part to a lack of fertility information for men. Cycle 6 of the National Survey of Family Growth allows exploration of nonmarital fertility for both genders. We compare the characteristics of unmarried first-time mothers (n = 2,455) and fathers (n = 797), use event history techniques to model second birth hazards, and examine the distribution of men's and women's second births across types of relationships. Our analysis is motivated by questions about how selection into nonmarital fertility relates to subsequent fertility behavior and by theories of mate selection and the "relationship" market. We find that unmarried mothers are more likely to have a second birth than unmarried fathers, driven largely by a higher hazard of having a noncoresidential second birth.

Keywords

Fertility; gender; nonmarital fertility; parity

It is conventional to begin articles on nonmarital fertility with a remark on the rapid increase of births outside of marriage starting in the 1970s and to follow with a comment on the negative outcomes -- including reduced educational attainment and lower earnings among women -- associated with births outside of marriage. These trends are well-documented in the extensive literature devoted to this increasingly common family behavior. Nonmarital fertility is also linked to distinctive patterns of subsequent fertility and union formation. In particular, having a nonmarital first birth decreases the likelihood of a woman ever marrying (Upchurch, Lillard, and Panis 2001). Perhaps as a result, mothers who have a first birth outside of marriage have become increasingly likely to have any and all subsequent births outside of marriage (Hoffman and Foster 1997; Wu, Bumpass, and Musick 2001).

However, it is unclear whether the same trends are occurring among men, as most research on nonmarital fertility concentrates on women (but see Guzzo and Furstenberg 2007; Hynes, Joyner, Peters, and Yang DeLeone 2008 for exceptions). Studying family formation from the perspective of a single sex is a reasonable simplification when most fertility takes place in stable unions. Given increasing rates of union dissolution and nonmarital childbearing, though, it is no longer possible to assume that men and women follow the same patterns of relationship formation and childbearing (Greene and Biddlecom 2000). When a child is born

Correspondence to: Karen Benjamin Guzzo, guzzo@kutztown.edu.

outside of marriage, both parents experience a nonmarital birth. But if that relationship ends, mothers and fathers may take very different paths, and these differences may result in differential patterns of subsequent childbearing and childrearing.

In this paper, we take advantage of newly available data on men's family formation from the 2002 National Survey of Family Growth (Cycle 6) to compare men's and women's family formation after a first nonmarital birth, focusing on fertility outcomes. Describing the contexts in which subsequent children are born is necessary to understand the long-term consequences of nonmarital fertility. Recent policy initiatives have focused on marriage as an important step toward improving parent and child outcomes for children conceived outside of marriage. Married-couple households are economically better off than households headed by single parents, and marriage is more stable than either cohabiting or non-coresidential relationships, though the benefits of marriage are less clear-cut when parents marry someone other than the child's biological parent. Not only is there evidence suggesting that people with children from a prior relationship are less likely to repartner (Qian, Lichter, and Mellott 2005), but the stability of subsequent unions may also be affected. Existing ties with the previous partner can destabilize marriage with a current partner; conversely, a parent's marriage may disrupt children's relationship with the nonresidential parent. Still, existing evidence suggests that children fare better in married stepfamilies than cohabiting stepfamilies (Thomson, Hanson, and McLanahan 1994; White and Gilbreth 2001; Manning 2002; Manning and Lamb 2003; Brown 2004). Thus, having multiple children outside of marriage may amount to a compounding of disadvantage among already disadvantaged unmarried parents and their children.

In addition, comparing men's and women's outcomes can shed light on the degree to which family formation outcomes reflect the causal influence of unmarried parenthood versus the process of selection into nonmarital fertility. Men and women may be subject to different forces of selection into nonmarital parenthood: these potential differences can be assessed through descriptive analysis of unmarried first-time parents to ascertain whether they share a general socioeconomic and demographic profile or if there are differences by gender. The experience of unmarried parenthood is also different for men and women. Since mothers generally retain physical custody of children, and nonresidential father involvement declines over time (Furstenberg and Harris 1992; Furstenberg 1995), mothers disproportionately bear the social burdens of unmarried parenting. Differences between mothers' and fathers' experience after a nonmarital birth that can be attributed to characteristics predating the birth suggest important influences of selection, while differences that persist after these characteristics are accounted for would highlight the importance of the experience of nonmarital parenthood for subsequent outcomes.

In this paper, we study the occurrence and relationship context of second births following a nonmarital first birth. We use partnership formation to explain fertility differences because previous research points to the centrality of relationship status as a determinant of fertility after a nonmarital birth (Hayford 2005; Wu and Martin 2002). Our analysis proceeds in two stages. We first examine parents' characteristics at birth and their subsequent fertility and family structure. This largely descriptive analysis fills a gap in the study of men's fertility by comparing unwed fathers to unwed mothers and allows us to assess the degree to which selection into nonmarital fertility operates in the same way for men and women. Next, to assess whether men and women appear to face different family formation conditions after the first birth, we examine subsequent births and their relationship context. We study the likelihood of having a second birth and analyze the link between relationship status at a nonmarital first birth (noncoresidential or cohabiting) and at subsequent births (noncoresidential, cohabiting, or married).

We focus on fertility as an outcome because it is relatively easy to measure and is directly comparable across men and women. Although earlier survey research suggested that nonresidential and unmarried fathers tended to underreport children, the innovative design of the survey used in the present analysis (Cycle 6 of the National Survey of Family Growth) situates men's fertility within relationships. This approach has been shown to increase reporting of male fertility, and a comparison of births reported in the NSFG with births from the vital statistics system suggests high quality male fertility data (Martinez, Chandra, Abma, Jones, and Mosher 2006). We discuss the quality of male fertility data in more detail in the data and limitations sections of the paper.

Characteristics of Single Mothers and Single Fathers

An extensive literature is dedicated to describing the characteristics of women who bear their first child outside of marriage (see, e.g., Ellwood and Jencks 2004; Ventura, Bachrach, Hill, Kaye, Holcomb, and Koff 1995; Wu and Wolfe 2001 for overviews of this literature). For instance, we know that nonmarital births disproportionately occur to women who are younger (Morgan and Rindfuss 1999), racial/ethnic minorities (Driscoll et al. 1999), and those from less advantaged backgrounds (Ellwood and Jencks 2004; McLanahan 2004). Less is known about unmarried fathers. This knowledge gap is part of a larger neglect of men's family formation patterns, due primarily to the difficulties in collecting accurate information on men's union and especially fertility behaviors (Greene and Biddlecom 2000; Forste 2002). Prior research has shown, for instance, that men tend to underreport their children, especially for nonmarital births and nonresidential children, when asked standard questions about past fertility (Lerman 1993; Bachu 1996; Rendall et al. 1999). The few studies that do examine men reveal some clues about men who have children outside of marriage. Landry and Darroch Forrest (1995) find that fathers of children born outside of marriage are older than the mothers of these children, but it is not clear whether this age gap is significantly different from the age gap between married parents (Lopoo and Carlson 2006). A study of early fatherhood finds that African American and Hispanic men are more likely than non-Hispanic white men to have children by age 25, and men from disadvantaged family backgrounds also have elevated rates of early fatherhood (Hynes, Joyner, Peters, and Yang DeLeone 2008). These patterns are similar to findings for early motherhood. However, young, unmarried, and childless women often partner with men who are older or who have prior family experiences, so research on young fathers may not fully capture the heterogeneity of unmarried fathers. Differences in the composition of unmarried parents may influence subsequent fertility and relationship formation. However, given high levels of homogamy in the United States, we hypothesize that unmarried first-time mothers and fathers will be largely similar in terms of educational attainment, race and ethnicity, and family background. We expect that unmarried first-time fathers will be slightly older than unmarried first-time mothers, but that this age difference will not contribute to differences between men and women in second birth rates.

Relationship Formation after a Nonmarital Birth

For women, having a nonmarital first birth has been found to depress subsequent fertility relative to having a first birth inside marriage (Upchurch, Lillard, and Panis 2002; Wu and Martin 2002). This negative relationship appears to be largely a result of the relationship between early nonmarital fertility and subsequent marriage formation. Women who have a first birth outside of marriage are less likely to ever marry than childless women (Qian, Lichter, and Mellot 2005), and birth rates are lower on average for unmarried women than for married women (Martin, Hamilton, Sutton, Ventura, Menacker, and Munson 2005; Martinez, Chandra, Abma, Jones, and Mosher 2006).

Previous research suggests that men's relationship formation is less affected by prior family experience than women's. As noted above, women with children from previous partners are less likely to form a subsequent union; numerous studies have documented reduced odds of first marriage, remarriage, and cohabitation among mothers (Becker, Landes, and Michael 1977; Buckle, Gallup, and Rodd 1996; Bumpass, Sweet, and Martin 1990; Clarkberg, Stolzenberg, and Waite 1995; Le Bourdais, Desrosiers, and Laplante 1995; Lichter, Graefe, and Brown 2003; Qian, Lichter, and Mellot 2005). The evidence for men is mixed, with some studies finding that nonresident children encourage cohabitation (Stewart, Manning, and Smock 2003; Wu and Schimmele 2005), others finding a negative influence on union formation (Clarkberg, Stolzenberg, and Waite 1995; Clarkberg 1999; Sweeney 1997, 2002), and still others finding no association (Becker, Landes, and Michael 1977; Lampard and Peggs 1999).

Men and women's subsequent childbearing after a nonmarital first birth likely differs because mothers and fathers have different constraints, opportunities, and preferences when dating and forming subsequent relationships. Differences in partnership formation between unmarried mothers and unmarried fathers may be explained by economic search models of marriage and relationship formation. According to these models, men and women who are trying to find a partner search for the person with the most desirable characteristics and compete with others for these desirable mates (Becker 1981; Oppenheimer 1988). Children reduce parents' attractiveness as partners and their ability to search and compete for partners, lowering their rate of partnership formation and pushing them toward less committed relationships. Children are labor-intensive and expensive, limiting parents' time and resources available for relationship formation. Moreover, the existence of a child is a clear signifier of a partner's past sexual relationship, often one in which there is still some contact with the ex-partner. Jealousy over ongoing contact with a prior sexual partner, even if the sexual relationship is over, can damage the stability of new unions (Edin and Kefalas 2005; Furstenberg 1995; Monte 2007).

Parents may also be disadvantaged on the relationship market if individuals looking for new mates are reluctant to take on a stepparent role or unclear about the expectations for their relationship with the children. As Cherlin (1992) noted, stepfamilies are ambiguous institutions, where roles are not clearly defined. If this is true of married stepfamilies, it is even more likely to be the case for unmarried stepfamilies, since relationships between various members are informal (Stewart 2007). Because of their weaker bargaining position due to their lower "attractiveness" relative to nonparents and decreased availability for committed relationships, parents may be less likely to form long-term unions like marriage and instead form more temporary relationships such as cohabitation and noncoresidential romantic unions. And because mothers are much more likely than fathers to have physical custody of children, and as a consequence carry more of the burden of care and financial support for children, mothers are disproportionately affected by the presence of children in the formation of relationships.

In addition to limiting opportunities for partnership, children may also reduce parents' motivation to find a new partner. Here, too, mothers and fathers are likely to experience these effects differently. Some parents may be reluctant to date at all -- having experienced the demise of one relationship, they may be unwilling to enter new relationships if they perceive the risks or consequences of another union dissolution to be too high (Cherlin et al. 2004; Edin 2000). Even parents who would like to have a new relationship may be cautious in introducing new partners to their children, lest their children get attached to partners who may be around for only a short time or become exposed to undesirable characteristics of new partners. The potential effects of children on the type of union formed (marriage, cohabitation, non-coresidential union) vary. On the one hand, parents may have a preference

for nonmarital unions if they are reluctant to legally bind themselves and their children to a new partner who is not biologically related to the children. Fathers, especially, may not want to take on additional financial responsibilities for nonbiological children from new relationships or for additional biological children. On the other hand, given that most people want to marry and believe marriage is the best situation in which to raise children (Thornton and Young-DeMarco 2001) and that marriage promotion programs emphasize the benefits of marriage over other union types, parents might prefer marriage to other types of relationships. Because unmarried mothers are more likely to have custody of children than unmarried fathers, their relationship decisions may be more strongly influenced by concerns for children.

Based on the existing body of research, we argue that men and women who have children while unmarried fare differently when searching for mates. These differences will affect both the formation of subsequent sexual unions and the type of union formed, which in turn shape the rates of having additional children. Compared to unmarried mothers, unmarried fathers face fewer constraints on the formation of new unions and are less likely to avoid new partnerships because of concerns about existing children. Since we hypothesize differential treatment of mothers and fathers in the relationship market, we expect that the effect of a nonmarital birth on the occurrence and relationship context of second births will be stronger for women than for men. Specifically, we hypothesize that women will be less likely than men to have a second child after a nonmarital first birth. Among those that do have subsequent children, we expect that women will be more likely than men to give births in less stable unions (noncoresidential unions and cohabitation) than in marriage.

Method

This analysis uses data from the 2002 National Survey of Family Growth (NSFG). The NSFG is a nationally representative, household-based cross-sectional survey of Americans aged 15–44, with a sample of 7,643 women and 4,928 men. Racial and ethnic minorities and individuals age 25 and under were oversampled; all descriptive statistics are weighted to reflect oversampling. Past cycles of the survey interviewed only women, but the most recent cycle included men. The inclusion of men presents a major advance for the study of men's fertility and family formation and allows comparisons between men and women with what appears to be the most accurate source of men's fertility data collected to date. The primary advantage of using the NSFG over other sources that contain both male and female fertility data (namely the National Longitudinal Surveys of Youth (NLSY)) is that fertility data in the NSFG is collected in the context of relationships (discussed below). In addition, the sample is more representative of the current population than panel surveys such as the NLSY, which were representative when initiated but become less representative over time due to attrition and immigration. Our analytical sample is restricted to men and women with a nonmarital first birth (n = 3,266). Missing information on relationship status at second birth excluded 14 cases, and an additional 2 cases were excluded because they were missing information on one of the covariates (nativity) discussed below. This leaves a final analytic sample of 3,250 individuals (795 men and 2,455 women).

Women's fertility histories were collected in the traditional manner, in a separate module by dates. The collection of men's fertility data in the NSFG used a different, and arguably better, approach, indexing men's childbearing to specific relationships (Martinez et al. 2006). A list of partners is compiled for each male respondent (current cohabiting partner/wife, up to three wives, first premarital cohabiting partner, and three most recent sexual partners); for each partner, men are asked whether they had any children with that partner. Men are also asked if there are any additional children by partners not discussed. If a man

reports a child, standard information on the child is collected (date of birth, gender, and so on).

The quality of the male fertility data in the NSFG appears to be high and comparable to that in other surveys. In comparing the weighted estimates of births among men 15–44 in the NSFG from 1997–2001 to vital statistics data for the same period, the vital statistics figures are within the 95% confidence interval of the NSFG estimates for both the total period and single years, with the exception of those aged 15–19 (Martinez, Chandra, Abma, Jones, and Mosher 2006). For 15–19 year-olds, the NSFG estimates are lower than those in vital statistics, largely because the sampling frame surveyed men who were 15–19 in 2002 (at the time of interview). In using the five-year period prior to survey for a comparison, vital statistics data refer to men who were age 15–19 during 1997–2001 whereas many of the NSFG's 15–19 year-olds were actually younger than 15 during this time (e.g., men who were 15 in 2002 were only 10 in 1997 and thus having few or no children). Another study comparing early male fertility (which is largely nonmarital) across different surveys found that estimates of the prevalence of early male fertility were relatively consistent across the NSFG and the 1979 and 1997 NLSY (Hynes, Joyner, Peters, and Yang DeLeone 2008).

The restriction to men aged 44 or younger does miss some fertility among older men. The birth rate for men aged 40–44 was 22.6 births per 1,000 men in 2002, but it quickly declines as age increases, with the birth rate only 7.4 for men 45–49, 2.4 for men 50–54, and 0.3 for men 55 and older (Martin, Hamilton, Sutton, Ventura, Menacker, and Munson 2005). Among women aged 15–49 who had a child in 1988, less than 6% of the fathers of their children were 40 or over, and men who were unmarried, Black, or partnered with lower-income women (i.e., those most likely to have a birth outside of marriage) tended to be younger than other fathers (Landry and Darroch Forrest 1995). Thus, the restriction to men aged 44 or younger is unlikely to exclude a substantial amount of nonmarital fertility. Together, previous research suggests that the overall quality of the fertility data in the NSFG is relatively good and comparable to that of other data sources. Some underestimation of men's fertility, particularly nonmarital fertility, may occur due to the under-sampling and under-representation of at-risk populations that is common in household-based surveys (Hernandez and Brandon 2002), but we are fairly confident that the data capture the vast majority of children born to the men included in the survey. We return to the issue of potential underreporting of male fertility in discussion of the results.

Our analysis has two components. First, we begin with a brief overview of the characteristics of mothers and fathers with nonmarital first births. This descriptive analysis includes characteristics of parents both at the time of birth and at the time of the survey, as well as subsequent family formation events experienced by unmarried parents. Second, to better understand the relationship between sociodemographic characteristics and subsequent fertility, we proceed to model the likelihood of having a second birth using event history methods. Men and women enter the analysis the year of a nonmarital first birth and are censored at the next birth, the time of interview, or 10 years after the first birth, whichever comes first. (Exploratory analyses showed very few births more than 10 years after the first birth; models run without the 10 year restriction are substantively similar. Results from these analyses are available from the authors on request.). We use a Cox proportional hazard model to first estimate the relative hazard of a second birth for men and women with a first nonmarital birth. Next, we run discrete-time multinomial logistic models, examining both the occurrence and the relationship context of second births. The dependent variable in these analyses is a four-category variable indicating no birth, a noncoresidential birth, a cohabiting birth, or a marital birth in the month. Both sets of models include both fixed and time-varying characteristics. In the Cox model, we include time-varying measures of relationship status after the first birth in order to assess the degree to which relationship formation affects

the hazard of having a second birth. The multinomial models do not include relationship status as a covariate since relationship status is incorporated in the outcome variable. Because exploratory models suggested a crossover between male and female fertility rates around three years after the first birth, we add a dummy variable for duration distinguishing the first three years after the first birth as well as an interaction between gender and this duration variable, thus relaxing the proportional hazards assumption of the Cox regression model.

Variables and measures

The key variables of interest concern relationship status at the second birth. For women, this information is taken from dates of cohabitation and marriage and dates of births. For men, this information comes from the union type in which they reported the birth. We also include an indicator of whether the individual was cohabiting at first birth. Based on the well-documented relationship between social disadvantage and the risk of nonmarital fertility, we include several socioeconomic and demographic characteristics. These covariates include age at first birth, race/ethnicity, and nativity, as well as several measures indicating socioeconomic status: family structure at age 14, respondent's mother's education and age at first birth, and whether the respondent had a high school degree at first birth. We also incorporate time-varying measures of relationship status (cohabiting and married) and whether the respondent has a high school degree or GED.

Results

We begin with a description of socioeconomic characteristics of unmarried first-time fathers and mothers (Table 1). Unmarried parents, especially fathers, are disproportionately minority, with fewer unwed mothers than fathers Hispanic or foreign born. There is some suggestion that mothers may be more disadvantaged than fathers; they are less likely to have lived with both biological parents at age 14 and tend to begin childbearing sooner than first-time unmarried fathers. In addition, women whose first birth was nonmarital are less likely than men whose first birth was nonmarital to have had this birth in a cohabiting relationship. This difference in relationship status implies heterogamy with respect to parity among unmarried parents since first-time mothers and fathers are not necessarily partnered with each other. That is, first births to unmarried mothers may not be first births for the fathers of these children, and vice versa.

In addition to background characteristics, Table 1 includes measures of current socioeconomic status (education, income, employment status). These characteristics are likely jointly determined with subsequent fertility, so they are not used in multivariate models. We describe them here to help sketch a profile of men and women who began childbearing outside of marriage. Women who were unmarried at their first birth were more educated at the time of the survey than men, although at the time of their first birth, roughly equal proportions had at least a high school education. This pattern is somewhat surprising in the context of our general hypothesis that nonmarital fertility is more disruptive for women's lives than for men's lives, as well as with the indicators of greater disadvantaged background among unmarried mothers. At the time of survey, both mothers and fathers were about 32 years old, with no significant differences by gender (not shown), so their greater education does not reflect more time available to complete a degree. Their higher achievement is consistent with generally higher educational attainment among low-income women than low-income men and may reflect greater formal and informal support directed at mothers' continued schooling compared to fathers'. Fathers were more likely than mothers to be currently employed full-time, which also mirrors more general trends between mothers and fathers. Fathers may feel more pressure than mothers to work to support children whereas mothers may have the availability of welfare or a male partner to provide

support; both social expectations and child support laws emphasize the importance of fathers' financial contributions.

Table 1 shows the proportion of unmarried parents who have a second child and the proportion of these children who are born in coresidential unions. Men are less likely than women to have another child after a nonmarital first birth, but the difference is small. Differences in the relationship status of second births are larger. Half of women's second births occur outside of a coresidential union (33.2 / 66.5) compared to less than one-fifth of men's (11.5 / 61.2); over 40% of men's second births are in marriage (25.8 / 61.2) but less than a third of women's are in marriage (21.1 / 66.5). It is possible that some of the differences between men and women stem from underreporting of higher-parity births by men, but we do not believe that underreporting fully explains the observed differences in subsequent fertility. In particular, it seems unlikely that men are underreporting higher-parity births after reporting an initial birth, given that men are most likely to report children born at older ages (Rendall et al. 2006) and children they are involved with, and men tend to be more involved with younger children and with children born in more recent relationships (Furstenberg 1995; Manning and Smock 1999, 2000) If men failed to report second births, we would expect to see that men were much less likely than women to have a second child. Instead, the largest differences are in the distribution of second births across unions, not the occurrence of second births. Finally, differences in the distribution of second births by relationship status match differences in current relationship status, which is less likely to be subject to misreporting. About 45% of both men and women who began childbearing nonmaritally were married at the time of interview, but far more women were separated, divorced, widowed, or never-married (36.5%) than men (25.4%) whereas men were more likely than women to be cohabiting (28.3% vs. 18.3%).

Multivariate results

These descriptive statistics show that women are more likely than men to have second births outside of coresidential unions. It is not clear whether this difference comes from differences in relationship formation, as we hypothesize, or from differences in men's and women's fertility behavior outside of relationships. To disentangle these possibilities and to assess the effects of characteristics at first birth, we estimated nested event history models. The first of these models includes only gender, duration, and a gender-duration interaction; the second adds both time-invariant characteristics at the time of the first birth and time-varying measures of education and relationship status. Results are shown in Table 2.

Model 1 shows the hazard ratios from the baseline Cox proportional model. The hazard ratio for "female" represents the difference in birth rates at durations more than three years after the first birth, and the interaction between female and duration allows for variations in gender differences over time. Contrary to our initial expectations, women have higher second birth rates than men at long durations (hazard ratio (HR) = 1.43). In the first three years after the first birth, women have lower fertility rates than men, but this difference is very small (HR = 0.98 = 1.43 * 0.69). It is possible that these unexpected findings may result from compositional differences between fathers and mothers who had their first child while unmarried. For example, Table 1 showed that unmarried mothers are younger on average than unmarried fathers; this age difference might explain women's higher birth rates at longer durations since first birth.

However, Model 2 suggests that compositional differences do not account for gender differences in fertility. Socioeconomic and demographic variables account for a minimal amount of women's higher second birth rates in the 10 years following a first birth. Several of the socioeconomic and demographic variables are significantly correlated with subsequent fertility. As expected, age at first birth is negatively associated with the hazard of

a second birth. Black men and women are more likely to have a second birth than their white counterparts. Men and women without a high school degree at the time of the survey had second birth hazards 1.27 times those of parents with a degree, and maternal education is also inversely related to the risk of having a second birth. Because differences between unmarried fathers and mothers in these characteristics are small (Table 1), however, these relationships do not explain gender differences in fertility.

As expected, relationship status is strongly related to second birth hazards. Individuals who were cohabiting and especially those who were married during the year are much more likely (HR = 1.37 and 2.59, respectively) to have a second birth than those who were not in a coresidential relationship. In contrast, cohabiting at first birth significantly *decreases* the hazard of having a second birth, net of current relationship status (HR = 0.89). This finding is unexpected but may be related to the instability of cohabiting unions in which children are born; research based on the Fragile Families studies shows that cohabitations among unmarried parents are often unstable (Carlson, McLanahan, and England 2004; Osborne 2005). The demise of these relationships may delay subsequent childbearing.

Controlling for relationship status does not reduce the coefficients for gender differences in birth hazards. That is, gender differences in relationship formation do not appear to explain male-female differences in second births. In separate models (not shown), we tested for differences between men and women in the association between relationship status and birth hazards. We found no statistically or substantively significant interactions and concluded that relationship formation has similar effects on men's and women's fertility.

Our initial hypothesis that women would be less likely than men to have a second birth following a nonmarital first birth is not supported. Although unmarried mothers have slightly lower birth rates than unmarried fathers at short durations after the first birth, at longer durations women are significantly more likely than men to have a second birth. These differences are not explained by differences in relationship formation, and sociodemographic characteristics at the time of birth do not account for the correlation between gender and second birth rates. However, descriptive results (Table 1) showed substantial differences between men and women in the distribution of births across relationships; examining these differences may provide further insight into men's and women's status in relationship markets. We turn to competing risk event history models to jointly examine the likelihood of having a birth and of the relationship context of the birth.

Table 3 shows results from a multinomial model analyzing the relative likelihood of having a birth outside a coresidential union, a cohabiting birth, and a marital birth relative to no birth in a given person month. We present these three contrasts along with two additional comparisons generated by the same model, the contrasts between a cohabiting and a marital birth relative to a noncoresidential birth. From these results, it is clear that the higher risk of a second birth among women is due to the higher risk of having a noncoresidential second birth in particular. Compared to men, women with a nonmarital first birth are almost 3 times as likely to have a noncoresidential birth than no birth and about a third as likely to have a cohabiting or marital birth than a noncoresidential birth, while there are no statistically significant differences in the risks of having a cohabiting or married birth relative to no birth. There are no differences by gender in the risk of a cohabiting birth relative to a marital birth (not shown). These results are consistent with our hypothesis that women who have nonmarital first births are more disadvantaged than men in terms of the relationship context of subsequent births.

Cohabitation at the first birth is associated with having subsequent births in a coresidential union. Individuals who were cohabiting at their first birth are 5.2 times as likely to have a

cohabiting birth than a noncoresidential birth and 2.2 times as likely to have a marital birth than a noncoresidential birth. Combined with results from Table 2, which showed lower birth hazards for parents cohabiting at the first birth, this association suggests heterogeneity among those cohabiting at first birth. It may be that cohabitors whose unions dissolve have lower second birth rates than average, but those whose relationships survive go on to have a second birth.

Other differences by socioeconomic and demographic characteristics emerge when examining the risk and type of a second birth. Although Hispanics did not exhibit overall birth hazards that were significantly different from non-Hispanic whites (Table 2), competing risk models show that Hispanics are more likely to have a noncoresidential or cohabiting birth rather than no birth. Blacks are also more likely to have a second birth in a noncoresidential or cohabiting relationship rather than no birth, though they have a lower risk of a marital birth relative to no birth, (by about 57%) or relative to a noncoresidential birth (by about 70%). Together, this suggests that nonmarital first births among minorities are more likely to be followed by higher-parity nonmarital births than first births among whites. Low educational attainment is also associated with births in less stable relationships. Individuals who had not yet graduated from high school at their first birth and did not return to school are about 40% more likely than high school graduates to have a noncoresidential or cohabiting birth relative to no birth (first two columns), and have lower odds of having a marital birth rather than no birth (third column). Finally, the older men and women were at their first birth, the less likely they are to have a noncoresidential or cohabiting birth than no birth. An earlier age at birth also increases the risk that a subsequent birth will be marital rather than noncoresidential.

Discussion and conclusion

Discussion

Given high rates of union instability for both marital and nonmarital unions, researchers can no longer assume that men's patterns of fertility and family formation are identical to women's (Greene and Biddlecom 2000). In particular, having a child outside of marriage has different implications for men's and women's subsequent family formation, including both childbearing and union formation behaviors. As such, it is increasingly necessary to study both men's and women's family behaviors. In this article, we compare men and women who have nonmarital first births and their subsequent fertility, using a new data source that is well-equipped to study both men's and women's fertility and union histories.

We find few significant differences between the characteristics of unmarried first-time fathers and mothers. Unmarried fathers and mothers come from similar family backgrounds, as measured by maternal education and maternal age at first birth. Men are older on average at their first birth, more likely to be Hispanic and foreign born, and slightly more likely to come from a two-parent family. More interestingly, they are also more likely to be in a cohabiting relationship at the time of a first nonmarital birth. This difference is important because it suggests that men's and women's relationship markets differ even prior to a nonmarital first birth. Although cohabiting relationships are less stable than marriages, they are more stable than noncoresidential relationships (Carlson, McLanahan, and England 2004; Osborne 2005) and so may lead to differences in subsequent patterns of childbearing and union formation.

We find that characteristics at first birth – notably age, education, and relationship status – are associated with second birth rates. However, gender differences in second birth hazards persist even after these characteristics are accounted for. Our initial hypothesis was that nonmarital births would depress women's status on the relationship market more than

men's, and that women would therefore be less likely to have a second birth. Our results do not fully support this hypothesis.

On the one hand, among individuals with a nonmarital first birth, women are less likely than men to go on to have additional children in coresidential relationships. This difference is consistent with our hypotheses that different patterns of child coresidence translate into greater ease for men of both attracting and dating potential mates. The difference could also reflect a double-standard in which unwed fathers (perhaps especially those who are involved with their children) are seen as admirable or at least relatively unstigmatized compared to unwed mothers, who must combat an image of promiscuity and oftentimes are grouped together as welfare recipients, with all the accompanying negative stereotypes (Bock 2000). It is also possible that a positive experience with single motherhood might encourage women to have additional children outside of marriage (Hertz 2006) or that a negative experience with the father of their first child may discourage women from marrying or cohabiting if they become pregnant again (Edin and Kefalas 2005).

On the other hand, and contrary to our expectations, women have higher second birth rates than men at long durations after the first birth and only slightly lower rates in the first three years after the first birth. Women's higher subsequent fertility in the long-term may reflect the greater social importance of biological parenthood in women's lives (Hays 1996). Higher second birth rates for women may also reflect a desire to provide first-born children with siblings. Men, on the other hand, are far less likely to have custody of any or all of their children and thus less likely to be concerned about sibling relationships. In addition, men may be more likely to fulfill parenthood norms by taking on social father responsibilities toward children of subsequent partners. Men may also avoid subsequent childbearing (especially outside of a relationship) if they do not see their first child often but are forced to pay child support -- in essence, getting few of the rewards but much of the cost of parenthood. More generally, the characteristics of partners (both in the relationship that produced the first child and in later relationships) may affect subsequent fertility in ways not accounted for in this analysis. Unfortunately, the NSFG does not contain complete information for partners in noncoresidential unions.

It is worth nothing that there is some reason to expect that unmarried first-time mothers might be somewhat more heterogenous in respect to age and education than first-time fathers. Because there are more biological constraints on women's childbearing, combined with greater social pressures to have children, some nonmarital fertility among women may be occurring to older, well-educated childless women, the so-called "Murphy Brown" mothers. There is a burgeoning literature on "choice" moms: women who choose to have children outside of marriage, often using sperm banks so that they do not have a partner population of unmarried fathers (e.g., Mattes 1994; Morrisette 2008). As such, unmarried mothers include both young poor women and older, college-educated women. However, recent research indicates that these "Murphy Brown"-type unmarried mothers make up a relatively small proportion of unmarried mothers (Hayford and Guzzo 2006). While we were unable to examine education status at birth due to data constraints, we found very little evidence of these mothers in the current analysis when just looking at age; there were only 258 individuals (192 mothers) 30 or older and 55 people (35 women) 35 or older in our analytical sample. Removing these individuals from the analysis did not change the results substantively.

Limitations

There are several limitations to this work. First, despite the innovative approach to measuring men's childbearing, where fertility is indexed to men's relationships, it is still likely that some men did not report their nonresidential children, either purposely or because

they did not know of them (Sorensen and Zibman 2001). Comparisons with vital statistics suggest that births to men are not particularly underestimated in the NSFG (Martinez et al. 2006), but Rendall and colleagues' 2006 work suggests that births to young, unmarried and African American men are most likely to be underreported in the NSFG. Our analysis is limited to men *who have reported* at least one nonmarital birth -- presumably the men most inclined to know about and be involved with their children. To the extent that we miss the most disadvantaged men and those who have the weakest relationship with their children, our results underestimate differences between men and women due to the experience of parenthood, and in fact men who under-report nonmarital fertility may be most likely to have subsequent nonmarital children since they face virtually no costs to parenthood. Moreover, because standard household-based surveys tend to miss disadvantaged men (Hernandez and Brandon 2002), the NSFG may be missing the men most likely to experience nonmarital fertility, thus capturing a fairly select group of unmarried fathers. For instance, men who report a nonmarital birth in the NSFG may be disproportionately likely to be in coresidential unions at either their first or second births compared to a more representative group of unwed fathers or compared to the unwed mothers in the NSFG (who might be more representative of unwed mothers in general), which could bias our results toward showing fewer negative effects of nonmarital childbearing on subsequent childbearing for men than women. It is likely that some of the gender differences in subsequent fertility may arise because the men least likely to report a nonmarital birth or least likely to be sampled are those most likely to have subsequent births, particularly outside of marriage. Fertility rates tend to be higher among young men and African Americans, for instance. Thus, it might be more accurate to conclude that women who report a nonmarital first birth are more likely to go on to have a subsequent birth, particularly one outside of a coresidential union, than men *who report* a nonmarital first birth, which is consistent with our theoretical argument about differences in the relationship market after a nonmarital first birth. Unfortunately, while it is sometimes possible to estimate the *absolute* magnitudes of male fertility using other fertility data sources, methodologies to estimate the relative magnitude of associations between socioeconomic and demographic characteristics and fertility behaviors have not yet been developed (Rendall, Joyner, Peters, Yang, Handcock, and Admiraal 2006). Like other researchers who are studying gender and fertility with the NSFG (see, e.g., Hynes, Joyner, Peters, and Yang DeLeone 2008; Zhang 2008), we believe we should continue to make use of available data sources -- taking pains to be aware of the potential limitations -- rather than abandon the pursuit completely.

Another set of concerns regards limitations in the contents of the NSFG. A major disadvantage of the NSFG is that we know little about the partners (i.e., the mothers/fathers) of men and women's nonmarital births. The NSFG collects a detailed marital and cohabiting history but does not collect information on noncohabiting relationships, so we are unable to examine whether men and women had their second birth with the same partner as the first birth for children born outside of coresidential unions. However, we are able to examine whether those whose first birth was in a cohabiting relationship had their second birth in the same relationship (either as an intact cohabitation or marriage): this was the case for only 342 of the 1,128 cohabiting first births. Since cohabiting relationships tend to be stronger than noncoresidential relationships, it seems relatively unlikely that most of the higher-parity births are with the same partner. Moreover, we are unable to examine whether the *quality* of partners differs for men and women, either at the time of their nonmarital first birth or at subsequent births. It is also worth noting that we are focusing on relationship status at birth, rather than conception; about 118 of the 573 marital second births appear to be premaritally conceived (that is, the births occurred within 7 months or less of the date of marriage). As such, even fewer individuals with a nonmarital first birth actually have a second birth conceived within marriage, underscoring the rarity of marital births after a nonmarital birth.

In addition, the NSFG does not contain complete retrospective histories of education (other than the date of high school completion or GED receipt) or employment, which prevents us from indexing specific births to specific socioeconomic conditions. We are thus unable to determine causality between current socioeconomic status and nonmarital childbearing. Given that women generally have physical custody of their children and do the bulk of parenting, especially in the early years, it is reasonable to suspect that the effects of childbearing on subsequent educational attainment and employment would be greater for women than men. If this is true, then the higher current (i.e., at the time of survey) levels of education among women than men in our sample of individuals with a nonmarital first birth is even more remarkable. On the whole, while we believe that the NSFG is a valuable source of new data and this research provides an important first step in understanding the potential repercussions of nonmarital fertility among men and women, replication of our analyses using different data sources that sample or collect fertility information differently would serve to strengthen our conclusions.

Conclusion

Sociodemographic factors related to the occurrence of a nonmarital first birth are similar for men and women. However, men and women face different relationship markets after (and possibly even before) a first nonmarital birth. As a result, women who have nonmarital first births are more likely than unmarried fathers to have subsequent children outside of coresidential unions. Repeated childbearing outside of marriage, especially with different partners, poses problems for both men and women. Multipartnered fertility has been negatively linked to union stability and child-parent contact (Carlson and Furstenberg 2006; Harknett and Knab 2007; Harknett and McLanahan 2005; Mincy and Huang 2001, 2002; Waller and McLanahan 2005). Thus, understanding the relationship between out-of-wedlock childbearing and subsequent patterns of union formation, childbearing, and childrearing for mothers and fathers is an important component of understanding the full effects of a nonmarital birth. Fathers and especially mothers of children born outside of marriage often go on to have additional children, but women are more likely than men to have subsequent children in noncoresidential relationships. This finding suggests that the costs of nonmarital childbearing in terms of future family formation are disproportionately paid by unmarried mothers and less so by unmarried fathers. Further research is necessary to determine whether and how these costs are distributed to children.

Acknowledgments

An earlier version of this research was presented at the 2007 American Sociological Association Annual Meetings in New York, NY. Portions of the article were prepared while the second author was supported by grant F32 HD050032-02 from the National Institutes of Health, National Institute of Child Health and Development.

References

Bachu, A. Population Division Working Paper 14. U.S. Census Bureau; Washington, DC: 1996. Fertility of American men.

Becker, GS. A treatise on the family. Cambridge, MA: Harvard University Press; 1981.

Becker GS, Landes EM, Michael RT. An economic analysis of marital instability. Journal of Political Economy. 1977; 85:1141–1187.

Bock JD. Doing the right thing? Single mothers by choice and the struggle for legitimacy. Gender and Society. 2000; 14:62–86.

Brown SL. Family structure and child well-being: the significance of parental cohabitation. Journal of Marriage and Family. 2004; 66:351–367.

Buckle L, Gallup GG, Rodd ZA. Marriage as a reproductive contract: patterns of marriage, divorce, and remarriage. Ethology and Sociobiology. 1996; 17:363–377.

Bumpass LL, Sweet JA, Castro Martin T. Changing patterns of remarriage. Journal of Marriage and Family. 1990; 52:913–927.

Carlson MJ, McLanahan S, England P. Union formation in fragile families. Demography. 2004; 41:237–261. [PubMed: 15209039]

Carlson, MJ.; Furstenberg, FF, Jr. The consequences of multipartnered fertility for parental involvement and relationships. Paper presented at the Conference on Multiple-Partner Fertility; Madison, WI: Institute for Research on Poverty, University of Wisconsin-Madison; 2006 September.

Cherlin, AJ. Marriage, divorce, remarriage. Cambridge, MA: Harvard University Press; 1992.

Cherlin AJ, Burton LM, Hurt TR, Purvin DM. The influence of physical and sexual abuse on marriage and cohabitation. American Sociological Review. 2004; 69:768–789.

Clarkberg M. The price of partnering: the role of economic well-being in young adults' first union experiences. Social Forces. 1999; 77:945–968.

Clarkberg M, Stolzenberg RM, Waite L. Attitudes, values, and entrance into cohabitational versus marital unions. Social Forces. 1995; 74:609–632.

Driscoll AK, Hearn GK, Evans VJ, Moore KA, Sugland BW, Call V. Nonmarital childbearing among adult women. Journal of Marriage and Family. 1999; 61:178–187.

Edin K. What do low-income single mothers say about marriage? Social Problems. 2000; 47:112–133.

Edin, K.; Kefalas, M. Promises I can keep: why poor women put motherhood before marriage. Berkeley, CA: University of California Press; 2005.

Ellwood, DT.; Jencks, C. The uneven spread of single parent families: What do we know? Where do we look for answers?. In: Neckerman, KM., editor. Social inequality. New York: Russell Sage Foundation; 2004. p. 3-77.

Forste R. Where are all the men? A conceptual analysis of the role of men in family formation. Journal of Family Issues. 2002; 23:579–600.

Furstenberg, FF, Jr. Fathering in the inner city: paternal participation and public policy. In: Marsiglio, W., editor. Fatherhood: contemporary theory, research, and social policy. Thousand Oaks, CA: Sage Publications; 1995. p. 1-20.

Furstenberg, FF., Jr; Mullan Harris, K. The disappearing American father? Divorce and the waning significance of biological parenthood. In: South, SJ.; Tolnay, SE., editors. The changing American family: sociological and demographic perspectives. Boulder, CO: Westview Press; 1992.

Greene ME, Biddlecom AE. Absent and problematic men: demographic accounts of male reproductive roles. Population and Demographic Review. 2000; 26:81–115.

Benjamin, Guzzo K.; Furstenberg, FF, Jr. Multipartnered fertility among American men. Demography. 2007; 44:583–601. [PubMed: 17913012]

Harknett K, McLanahan SS. Racial and ethnic differences in marriage after the birth of a child. American Sociological Review. 2005; 69:790–811.

Harknett K, Knab J. More kin, less support: multipartnered fertility and perceived support among mothers. Journal of Marriage and Family. 2007; 69:237–253.

Hayford, SR. Unpublished doctoral dissertation. University of Pennsylvania; 2005. Fertility and marriage in an era of family change.

Hayford, SR.; Benjamin Guzzo, K. The interaction of age and parity with wantedness and contraceptive use among nonmarital births. Paper presented at the Population Association of America Annual Meetings; Los Angeles, CA. 2006 March-April.

Hays, S. The cultural contradictions of motherhood. New Haven, CT: Yale University Press; 1996.

Hernandez, DJ.; Brandon, PD. Who are the fathers of today?. In: Tamis-LeMonda, CS.; Cabrera, N., editors. Handbook of father involvement: multidisciplinary perspectives. Mahwah, NJ: Lawrence Erlbaum Associates; 2002. p. 33-90.

Hertz, R. Single by chance, mothers by choice: how women are choosing parenthood without marriage and creating the new American family. Oxford, New York: Oxford University Press; 2006.

Hoffman S, Foster EM. Nonmarital births and single mothers: cohort trends in the dynamics of nonmarital childbearing. The History of the Family. 1997; 2:255–275.

Hynes K, Joyner K, Peters HE, Yang DeLeone F. The transition to early fatherhood: national estimates based on multiple surveys. Demographic Research. 2008; 18:337–376.

Lampard R, Peggs K. Repartnering: the relevance of parenthood and gender to cohabitation and remarriage among the formerly married. British Journal of Sociology. 1999; 50:443–465. [PubMed: 15259195]

Landry DJ, Darroch Forrest J. How old are U.S. fathers? Family Planning Perspectives. 1995; 27:159–161 + 165. [PubMed: 7589357]

Le Bourdais C, Desrosiers H, Laplante B. Factors related to union formation among single mothers in Canada. Journal of Marriage and Family. 1995; 57:410–420.

Lerman, RI. A national profile of young unwed fathers. In: Lerman, RI.; Ooms, TJ., editors. Young unwed fathers: changing roles and emerging policies. Philadelphia: Temple University Press; 1993. p. 27-51.

Lichter DT, Roempke Graefe D, Brown JB. Is marriage a panacea? Union formation among economically disadvantaged mothers. Social Problems. 2003; 50:60–86.

Lopoo, L.; Carlson, MJ. Working Paper 05-21-FF. Center for Research on Child Wellbeing, Princeton University; Princeton, NJ: 2006. A profile of the men who father children with unwed, teenage women.

Manning, WD. The implications of cohabitation for children's well-being. In: Booth, A.; Crouter, AC., editors. Just living together: implications for children, families, and public policy. Mahwah, NJ: Lawrence Erlbaum; 2002. p. 121-152.

Manning WD, Lamb KA. Adolescent well-being in cohabiting, married, and single-parent families. Journal of Marriage and Family. 2003; 65:876–893.

Manning WD, Smock PJ. New families and nonresident father-child visitation. Social Forces. 1999; 78:87–116.

Manning WD, Smock PJ. "Swapping" families: serial parenting and economic support for children. Journal of Marriage and Family. 2000; 62:111–122.

Martin, JA.; Hamilton, BE.; Sutton, PD.; Ventura, SJ.; Menacker, F.; Munson, ML. National Vital Statistics Reports. Vol. 54. Hyattsville, MD: National Center for Health Statistics; 2005. Births: final data for 2003.

Martinez, GM.; Chandra, A.; Abma, JC.; Jones, J.; Mosher, WD. Vital and Health Statistics. Vol. 23. Hyattsville, MD: National Center for Health Statistics; 2006. Fertility, contraception, and fatherhood: data on men and women from Cycle 6 of the 2002 National Survey of Family Growth.

Mattes, J. Single mothers by choice: a guidebook for single women who are considering or have chosen single motherhood. Three Rivers Press; 1994.

McLanahan S. Diverging destinies: how children are faring under the second demographic transition. Demography. 2004; 41:607–627. [PubMed: 15622946]

Mincy, RB.; Huang, C. "Just get me to the church": assessing policies to promote marriage among fragile families; Working Paper 02-02-FF, Center for Research on Child Wellbeing; Princeton, NJ: Princeton University; 2001.

Mincy, RB.; Huang, C. The "M" word: the rise and fall of interracial coalitions on fathers and welfare reform. Paper presented at the Conference on Welfare Reform and Child Well-Being; Bowling Green State University; Bowling Green, OH. 2002 March.

Monte, LM. Blended but not the Bradys: navigating unmarried multiple partner fertility. In: England, P.; Edin, K., editors. Unmarried couples with children. New York: Russell Sage; 2007. p. 204-227.

Morgan SP, Rindfuss RR. Reexamining the link of early childbearing to marriage and to subsequent fertility. Demography. 1999; 36:59–75. [PubMed: 10036593]

Morrissette, M. Choosing single motherhood: the thinking woman's guide. New York: Houghton Mifflin Harcourt Publishing Company; 2008.

Oppenheimer, Kincaide V. A theory of marriage timing. American Journal of Sociology. 1988; 94:563–591.

Osborne C. Marriage following the birth of a child among cohabiting and visiting parents. Journal of Marriage and the Family. 2005; 67:14–26.

Qian Z, Lichter DT, Mellott LM. Out-of-wedlock childbearing, marital prospects, and mate selection. Social Forces. 2005; 84:473–491.

Rendall MS, Clarke L, Peters HE, Ranjit N, Verropoulou G. Incomplete reporting of men's fertility in the United States and Britain. Demography. 1999; 36:135–44. [PubMed: 10036598]

Rendall, MS.; Joyner, K.; Peters, HE.; Yang, F.; Handcock, MS.; Admiraal, R. Combining population and survey data for male fertility estimation. Paper presented at the annual meeting of the Population Association of America; Los Angeles, CA. 2006 March-April.

Sorensen E, Zibman C. Getting to know poor fathers who do not pay child support. Social Service Review. 2001; 75:420–434.

Stewart, SD. Brave new stepfamilies: diverse paths toward family living. Thousand Oaks, CA: Sage Publications; 2007.

Stewart SD, Manning WD, Smock PJ. Union formation among men in the U.S.: does having prior children matter? Journal of Marriage and the Family. 2003; 65:90–104.

Sweeney MM. Remarriage of women and men after divorce. Journal of Family Issues. 1997; 18:479–502. [PubMed: 12292894]

Sweeney MM. Remarriage and the nature of divorce: does it matter which spouse chose to leave? Journal of Family Issues. 2002; 23:410–440.

Thomson E, Hanson TL, McLanahan SS. Family structure and child well-being: economic resources vs. parental behaviors. Social Forces. 1994; 73:221–242.

Thornton A, Young-DeMarco L. Four decades of trends in attitudes toward family issues in the United States: the 1960s through the 1990s. Journal of Marriage and Family. 2001; 63:1009–1037.

Upchurch, DM.; Lillard, LL.; Panis, CWA. The impact of nonmarital childbearing on subsequent marital formation and dissolution. In: Wu, LL.; Wolfe, B., editors. Out of wedlock: causes and consequences of nonmarital fertility. New York: Russell Sage Foundation; 2001. p. 344-380.

Upchurch DM, Lillard LL, Panis CWA. Nonmarital childbearing: influences of education, marriage, and fertility. Demography. 2002; 39:311–329. [PubMed: 12048954]

Ventura, SJ.; Bachrach, C.; Hill, L.; Kaye, K.; Holcomb, P.; Koff, E. U.S. Department of Health and Human Services. Report to the Congress on out-of-wedlock childbearing. Hyattsville, Maryland: U.S. Department of Health and Human Services; 1995. The demography of out-of-wedlock childbearing; p. 1-133.

Waller MR, McLanahan S. "His" and "her" marriage expectations: determinants and consequences. Journal of Marriage and Family. 2005; 67:53–67.

White LK, Gilbreth JG. When children have two fathers: effects of relationship with stepfathers and noncustodial fathers on adolescent outcomes. Journal of Marriage and Family. 2001; 63:155–167.

Wu, LL.; Martin, SP. Working Paper 2002–14. University of Wisconsin Center for Demography and Ecology; Madison, WI: 2002. Is there an engine of nonmarital fertility?.

Wu, LL.; Bumpass, LL.; Musick, K. Historical and life course trajectories of nonmarital childbearing. In: Wu, LL.; Wolfe, B., editors. Out of wedlock: causes and consequences of nonmarital fertility. New York: Russell Sage Foundation; 2001. p. 3-48.

Wu, LL.; Wolfe, B., editors. Out of wedlock: causes and consequences of nonmarital fertility. New York: Russell Sage Foundation; 2001.

Wu Z, Schimmele CM. Repartnering after first union disruption. Journal of Marriage and Family. 2005; 67:27–36.

Zhang L. Religious affiliation, religiosity, and male and female fertility. Demographic Research. 2008; 8:233–262.

Table 1

Descriptive Characteristics of Men and Women with a Nonmarital First Birth

	Men	Women
Sociodemographic Characteristics		
Race/ethnicity		
Hispanic	27.2%	18.5%**
Non-Hispanic White	42.3%	51.1%**
Non-Hispanic Black	24.1%	25.9%**
Other	6.1%	4.6%**
Foreign born	20.5%	13.5%***
Family structure at age 14		
Both biological parents	67.8%	60.0%*
Stepfamily	10.2%	12.4%*
Other	22.1%	27.4%*
Mother's education		
Less than HS/missing	35.8%	34.5%
HS/GED	41.6%	37.4%
Some college	14.1%	18.4%
College or more	8.6%	9.7%
Mother had 1st birth <18 yrs old	21.2%	24.8%
First Birth Characteristics		
Age (years)	22.9 (−0.23)	21.6*** (−0.14)
Cohabiting	54.1%	27.3%***
Had high school diploma or GED	53.2%	54.1%
Second Birth Characteristics		
No second birth	38.4%	33.5%***
Noncoresidential	11.5%	33.2%***
Cohabiting	24.4%	12.1%***
Married	25.8%	21.1%***
Current Family Characteristics		
Union status		
Married	46.4%	45.2%***
Cohabiting, never married	26.2%	15.4%***
Cohabiting, previously married	2.1%	2.9%***
Separated, divorced, or widowed	9.1%	13.4%***
Never married	16.2%	23.1%***
Number of children	2.2 (−0.07)	2.2 (−0.04)
Current Socioeconomic Characteristics		

	Men	Women
Education		
Less than HS	28.2%	23.1%***
HS/GED	45.7%	39.0%***
Some college	16.7%	20.6%***
Associate degree	3.2%	6.8%***
College or more	6.3%	10.5%***
Labor force participation		
Employed fulltime	70.5%	46.9%***
Employed parttime	8.3%	13.5%***
Employed but temporarily not working	3.9%	4.7%***
School	0.2%	0.6%***
Not working or in school	17.1%	34.3%***
Income		
Less than $10,000	14.0%	13.7%
$10,000–14,999	8.2%	14.2%
$15,000–24,999	18.7%	18.1%
$25,000–34,999	20.3%	15.4%
$35,000–49,999	14.9%	14.8%
$50,000 or more	24.0%	23.0%
N	795	2455

Source: National Survey of Family Growth. All statistics weighted.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .001$. Significant differences between men and women using chi-square test.

Table 2

Hazard Ratios from Cox Proportional Hazards Models of the Likelihood of Second Birth among Men and Women with a Nonmarital First Birth

	Model 1	Model 2
	Hazard Ratio	**Hazard Ratio**
Female	1.43***	1.41***
Duration < 3 years	0.22***	0.27***
Female* Duration <3 years	0.69***	0.63***
Race/Ethnicity		
White		--
Hispanic		1.14
Black		1.35***
Other		1.35*
Foreign born		0.97
Family structure at age 14		
Both biological parents		--
Stepfamily		0.92
Other		0.93
Education		
Had diploma or GED at 1st birth		--
No HS diploma at 1st birth, have one now		1.03
No HS diploma at 1st birth, do not have one now		1.27***
Mother's education		
Less than HS/missing		1.24***
HS/GED		--
Some college		0.87
College or higher		1.09
Mother had her 1st birth <18 years old		1.08
Age at 1st birth		0.93***
Cohabiting at 1st birth		0.89*
Relationship status during the year		
No coresidential relationship		--
Cohabiting		1.37***
Married		2.59***
Number of person-years	16969	16969
Number of subjects	3250	3250
Number of births	1937	1937
−2 log likelihood	28161	27840

Source: National Survey of Family Growth.

*$p \leq .05$.

** $p \leq .01$.

*** $p \leq .00$

J Fam Issues. Author manuscript; available in PMC 2011 June 17.

Table 3

Relative Risk Ratios from Multinomial Event History Models of the Likelihood of Second Birth among Men and Women with a Nonmarital First Birth

	Noncoresidential vs. no birth	Cohabiting vs. no birth	Marital vs. no birth	Cohabiting vs. noncoresidential birth	Marital vs. noncoresidential birth
	RRR	RRR	RRR	RRR	RRR
Female	2.99***	1.10	1.11	0.37***	0.37***
Duration < 3 years	1.37	1.19	0.53***	0.87	0.39***
Female* Duration <3 years	0.47***	0.44***	0.86	0.93	1.83*
Race/Ethnicity					
White	--	--	--	--	--
Hispanic	1.26*	2.12***	0.82	1.68**	0.65*
Black	1.47***	1.57***	0.43***	1.06	0.29***
Other	1.55**	1.90*	0.87	1.22	0.56
Foreign born	0.89	1.00	1.17	1.13	1.31
Family structure at age 14					
Both biological parents	--	--	--	--	--
Stepfamily	1.05	0.98	1.11	0.94	1.06
Other	1.01	1.03	0.99	1.02	0.98
Education					
Had diploma or GED at 1st birth	--	--	--	--	--
No diploma at 1st birth, have one now	1.01	0.91	1.12	0.91	1.12
No diploma at 1st birth, do not have one now	1.39***	1.40**	0.80*	1.00	0.57***
Mother's education					
Less than HS/missing	1.03	1.05	1.31*	1.02	1.28
HS/GED	--	--	--	--	--
Some college	0.85	0.91	1.13	1.08	1.33
College or higher	1.18	1.02	1.20	0.86	1.01
Mother had her 1st birth <18 years old	1.14	1.19	0.83	1.04	0.73*
Age at 1st birth	0.95***	0.95***	1.01	1.00	1.07***
Cohabiting at 1st birth	0.54***	2.80***	1.19	5.15***	2.18***

	Noncoresidential vs. no birth	Cohabiting vs. no birth	Marital vs. no birth	Cohabiting vs. noncoresidential birth	Marital vs. noncoresidential birth
	RRR	RRR	RRR	RRR	RRR
Number of person-years			16969		
Number of subjects			3250		
Number of births			1937		
−2 log likelihood			15364		

Source: National Survey of Family Growth.

* p ≤ .05.

** p ≤ .01.

*** p ≤ .001