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Changing Sociodemographic Factors and Teen Fertility: 1991–2009

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Abstract

This study analyzed the roles of trends in sociodemographic factors known to be related to the risk of a teen birth. The goal was to analyze the roles of these trends in maternal education, family structure and mother's age at first birth in the likelihood of adolescents becoming teen mothers across multiple birth cohorts of women covering the years since 1991. Data are from the 1995, 2002, 2006–2010 and 2011–2013 National Surveys of Family Growth (NSFG). Consecutive birth cohorts of female respondents were constructed and retrospectively followed to estimate the risk of a teen birth for each cohort. Logistic regression models estimate the odds of a teen birth across cohorts and within strata of the predictors across cohorts. Maternal education rose across cohorts; the proportion who were non-Hispanic white declined. In general, the likelihood of an adolescent birth did not change within categories of the predictors that are considered at higher risk for a teen birth across birth cohorts. Specifically, there was no change in the odds of a teen birth among women whose mothers did not finish high school, those born to teen mothers and those not from two-parent families. The odds of a birth declined across cohorts for black women. The findings suggest that much of the decline in teen birth rates is due to declines in the proportion of teens in higher risk categories, rather than to declines within those categories.

Keywords

Teen birth; Maternal education; Birth cohort; Age at first birth; Fertility trends

Background

Adolescent childbearing is associated with adverse outcomes for both teen mothers and their children. Children born to teen mothers face greater risks of poor health, unstable families, poverty and academic failure than children born to older women [1–3]. They are more likely to die as infants, children and adolescents as are children born to older mothers [4]. In addition, their risks for hospitalization, academic failure, becoming a foster child and receiving public assistance as a young adult are also substantially higher [1, 4, 5]. Moreover, teen mothers are less likely than their peers to graduate from high school and attend college [2]. They are less likely to be employed and they earn lower wages [2, 3]. Therefore, they are more likely to be poor as adults and to rely on public assistance [6].

Overall, teen birth rates in the U.S. have declined since the late 1950s though this trend has been uneven. The birth rate declined fairly steadily from 1960 to 1978 before stabilizing. It started rising in 1987 and peaked in 1991 at 61.8/1,000. Since then the teen birth rate has been again declining steadily, falling to an historic low of less than 50/1,000 in 1999 and dropping to 26.6 by 2013 [7, 8]. Teen birth rates have also declined among all racial/ethnic groups, but the levels and rates of decline differ across groups. Rates for non-Hispanic whites are consistently less than half of those of African Americans and Hispanics. Until the mid-1990s, black teen birth rates were higher than those of whites and Hispanics, but the decline in the black teen birth rate since 1991 was steeper than those for other groups. Consequently, Hispanics are now the racial/ethnic group with the highest teen birth rate [8, 9].

Calculation of the U.S. teen birth rate relies on birth certificate and Census data and can produce overall trends and racial/ethnic trends. However, those data do not allow for examination of the risk of becoming a teen mother, nor do they permit evaluation of factors other than race/ethnicity. To address this situation, this study uses national survey data to estimate the risk of becoming a teen mother for women born in different years and into different sociodemographic subgroups.

Predictors of Teen Birth

The likelihood that a woman gives birth before age 20 is strongly influenced by maternal and family characteristics. Several of these factors and their relationship to the odds of a teen birth, including mother's educational attainment, mother's age at first birth and family structure, have been studied using both national data and smaller surveys [10–12]. These factors, among others that constitute the family sociodemographic profiles of adolescents, have changed over time as social, cultural and economic trends have unfolded. The educational attainment of women, including mothers, has risen in the past several decades whereas the proportion of youth raised in stable two-parent families has declined [13, 14].

Maternal Education—The education of adolescents' parents, particularly mothers, has been consistently found to be related to adolescent sexual behaviors and outcomes, including age at first sex, contraceptive use, pregnancy and childbearing [10, 12, 15–22].

In 1960, 57.5 % of women ages 25 and older had not finished high school; only 5.8 % had a college degree. By 2010, only 12.4 % had not finished high school, whereas 29.6 % had finished college [13]. This trend holds for the mothers of adolescents [10, 16, 23, 24]. Thus, the overall proportion of youths with mothers who had gone no farther than high school has declined over time as the proportion of college-educated mothers has risen. Increasing maternal education suggests a decreasing proportion of teens at risk for a teen birth and therefore declining teen childbearing.

Family Structure—Family structure and stability affect the likelihood that teen girls have a birth [11, 21, 25]. Teens in stable, intact families delay sex longer [14–16, 18, 26]. There is less evidence that family structure predicts whether teens use contraception at first sex [10, 16].

Teenagers born in the 1950s were more likely to live with both parents in an intact family and less likely to ever live in a mother-only family or a stepfamily than those in the 1960s [14]. The proportion of teen girls who grew up continuously in two-parent families declined with year of birth among those born in the 1960s, 1970s and early 1980s [24]. Over consecutive cohorts from 1966 to 1980, the proportion of teen girls who experienced living in non-intact and single parent family situations rose. Given the association between family structure and teen childbearing, this trend suggests that the proportion of teens at greater risk for a birth has increased.

Mother's Age at First Birth—The age at which teens' mothers had their first birth is related to teens' sexual behavior and fertility outcomes. It is inversely associated with their likelihood of transitioning to first sex [10, 14, 18]. Although most daughters of teen mothers do not become teen parents themselves, their risk of doing so is greater than that for daughters of older mothers [10–12, 27, 28].

Describing trends in teens' mothers' age at their first births is challenging; it is difficult to gauge the proportion of births to a given birth cohort that occurred to women whose first birth took place during her teens. To estimate trends in mothers' age at first birth, using birth certificate data to calculate the proportion of births that were to adolescents in given years is helpful but not definitive. During the 1950s, 12.0 % of births were to women younger than 20; that rose through the 1960s and 1970s, peaking in 1975 when 18.9 % of births occurred to women under age 20 [29]. Since then, the proportion of births that occurred to teens has declined. By 2012, only 8 % of births were to adolescent mothers [8]. This trend suggests that the proportion of teens with this risk factor for teen childbearing has declined over time.

Additional factors have been shown to be associated with teen fertility. In particular, family income or poverty status has been shown to be associated with the risk of becoming a teen mother. Young women from low-income backgrounds are more likely to have a teen birth than their more economically advantaged peers [30–34]. Moreover, racial/ethnic differences in teen fertility rates have persisted; non-Hispanic whites have consistently had lower rates than blacks or Hispanics. Until the mid-1990s, non-Hispanic black teens have had the highest rate, followed by Hispanic teens. The steeper decline in rates among blacks since the early 1990s, coupled with the steady but slower decline for Hispanics, led to Hispanics having higher rates than non-Hispanic whites and blacks, a pattern that has prevailed since 1995 [7].

The goal of this study was to analyze the roles of these trends in maternal education, family structure and mother's age at first birth in the likelihood of adolescents becoming teen mothers as the overall rate was declining since 1991 in a linear manner (Fig. 1). Figure 1 shows the teen birth rate in the U.S. from 1991 to 2013 (the most recent year available) during which the teen birth rate fell by more than half. Our approach was to analyze teen births among women who were born in years that made them eligible to be teens during 1991–2009, that is, women born from 1974 to 1990. Focusing on the most recent period for which data are available and in which the overall trend was clear and fairly linear, allows us to test whether this trend was found within sociodemographic levels. To address this goal, the following research questions were posed.

Research Questions

1. Do the distributions of family sociodemographic risk factors for a teen birth vary across birth cohorts since 1991?
2. Does the percent of women having a first birth as a teen decline within family sociodemographic strata across birth cohorts?
3. To better understand the effects of changes in family sociodemographic factors on trends in the proportion of women with a teen birth, what would have been the percentage of women with a teen birth in recent cohorts if the distribution of those factors had remained the same as in the 1974–1977 cohort?
4. Given the overall decline in teen birth rates since 1991, does the risk of a teen birth decline within family sociodemographic strata across birth cohorts net of other factors?

Data and Methods

Data and Sample

Data for this study are from the 1995, 2002, 2006–2010 and 2011–2013 cycles of the National Survey of Family Growth (NSFG). The NSFG is cross-sectional and is based on in-person interviews of a national sample of women and men 15–44 years of age in the household population of the U.S. The data for women contain complete pregnancy and birth histories, retrospectively reported. Data from all four cycles were pooled and four consecutive birth cohorts of female respondents were constructed, including women born from 1974 to 1990. Most cohorts include respondents from more than one NSFG cycle.

Sample weights from each cycle were applied as instructed in statistical documentation accompanying the NSFG Public Use File [35] resulting in appropriately weighted statistics for the combined data file. Sampling errors were produced using SUDAAN, statistical software designed to handle the complex sample designs of surveys like the NSFG. The NSFG surveys have received approval from the Research Ethics Review Board (RERB), the IRB at the National Center for Health Statistics (NCHS), the headquarters of the NSFG within the Centers for Disease Control and Prevention. This ensures that the survey conforms to U.S. Federal regulations and to regulations in the HHS Policy for Protection of Human Research Subjects in the Code of Federal Regulations. All persons gave informed consent prior to their inclusion in the study. The study sample includes respondents who were age 20 or older at interview so that their entire teen fertility risk period occurred before the interview. Women who arrived in the U.S. after their teen years who could have had a teen birth before immigrating were excluded from the analyses.

Variables

Outcome—The outcome is first birth by age 20. Age at first birth in months was calculated from two variables measuring respondent date of birth and date of her first birth.

Independent Variables—The focal independent variable is year of woman's birth (birth cohort). Women were divided into four consecutive birth cohorts. The analyses incorporated

three variables that describe respondents' family situation while growing up: (1) education of the respondent's mother ('maternal education'); (2) age at first birth of the respondent's mother ('maternal age at first birth'), and (3) family structure in which the respondent was raised. Maternal education is a four category variable, ranging from less than high school to a bachelor's degree or more. Maternal age at first birth was dichotomized: women whose own mothers' first birth occurred before age 20 comprised one category; those whose mothers were at least 20 years old at first birth comprised the second category. Women who were continually raised in a two-parent family (with the same two parents) were compared to women who grew up in all other situations. Unfortunately, the data do not allow us to include a childhood family income or poverty measure in the analyses, as income is not ascertained for respondents' family of origin. However, maternal education is often used as a proxy for income or poverty status, when income is not available. All multivariate models also controlled for race/ethnicity. The categories are Hispanic, non-Hispanic white (NH white), non-Hispanic black (NH black) and non-Hispanic other (NH other).

Analyses

Crosstabulations addressed the first two research questions. First, analyses estimated the distribution of the family sociodemographic factors across birth cohorts. The proportions of women in each subgroup of the three sociodemographic factors plus race/ethnicity in the first and last cohort were compared via Chi square tests. Next, the percentage of women with a first birth by age 20 for each category of these factors was also compared across cohorts using Chi square tests to test for differences between the first and last cohorts.

The third research question was addressed by applying the distributions of maternal education, family structure and mother's age at first birth in the 1974–1977 cohort to each of the more recent cohorts. Standardized percentages were calculated separately for each of the factors by multiplying the percent with a birth in each of the subsequent cohorts by the percentage of the sample that stratum of the factor represented in the 1974–1977 cohort. This produced estimates of the proportion of change since the 1974–1977 cohort in the percentage of women with a teen birth that was due to changes in the distribution of each factor.

Multivariate logistic regression was used to answer the last research question. The main effects model predicted the odds of a first teen birth by age 20 by birth cohort net of sociodemographic factors. The next models predicted the odds of a teen birth by consecutively interacting birth cohort with each factor of interest; each model included the same factors and varied only in the factor that was interacted with birth cohort. The first birth cohort, those born 1974–1977, served as the reference category. ANOVA tests (Wald F tests) were used to test for cohort effects within each level of the sociodemographic variables. This approach allows statistical comparisons within the strata across birth cohorts net of the other factors.

Results

Bivariate Results

Table 1 presents distributions of sociodemographic factors for each birth cohort; the distributions of each factor for the first and last cohort were compared. The proportion of women whose mothers had less than high school education declined and the proportion who finished college rose. The difference in the proportion who did not live in intact, two-parent families rose from the first to the last cohorts although the change only approached significance. The proportion of women born to a teen mother was 35.1 % for the 1974–1977 cohort and 30.9 % for the 1986–1990 cohort; this difference also approached significance. The racial/ethnic distribution of the 1974–1977 cohort differed significantly from that of the 1986–1990 cohort; non-Hispanic whites declined from 65.3 to 59.2 %.

Table 2 presents the percentage of women who had a birth by age 20 within each stratum of the sociodemographic variables across birth cohorts. The percentage of women with a teen birth declined from 22.7 % for women born 1974–1977 to 18.7 % of those born 1986–1990. There were no significant differences between the percentage with a teen birth in the first and last cohorts for any maternal education subgroup. The proportion of women with a teen birth declined from the first to last cohorts for women from two-parent families but not among women from other families. The percentage of women who had a teen birth did not vary from the first to most recent cohorts among women whose mothers were teen mothers but declined among those whose mothers were older at first birth. The percentage with a teen birth declined from the 1974–1977 cohort to the 1986–1990 cohort for blacks and Hispanics but not for other racial/ethnic groups.

Figure 2 compares the actual percentages of women who had a teen birth in each birth cohort (dashed line) with the estimated percentages who would have had births had the 1974–77 distributions for maternal education (red line), family structure (green line) and maternal age at first birth (purple line) been applied to the stratum-specific percentages with a teen birth for each cohort. If maternal education distributions had not changed from those that existed for the 1974–1977 cohort (when 20.4 % of teens had a mother who did not finish high school), the percentage with a teen birth would have been 9 % higher among the 1986–1990 cohort (when the proportion of teens whose mothers had less than high school was 15.9 %) than it actually was and would have been higher for every cohort since the first. If women in all cohorts experienced the same distribution in family structure as that experienced by the 1974–1977 cohort, the percentage with a birth in every subsequent cohort would have been lower; by the most recent cohort, it would have been 4 % lower than it actually was. If the proportion of women in the 1974–1977 cohort with teen mothers was applied to all later cohorts, the proportion of women with a teen birth would have been 5 % higher among those born in the last cohort.

Multivariate Results

Table 3 presents the results of multivariate logistic regression models predicting the odds of a teen birth across birth cohorts controlling for sociodemographic factors. Women born 1986–1990 were significantly less likely to have a teen birth than those born 1974–1977,

before and after controlling for sociodemographic factors. Mother's education was inversely related to the odds of a teen birth, women who grew up with both parents were significantly less likely than others to have a teen birth, and the daughters of teen mothers were more likely to become teen mothers themselves than the daughters of older mothers. Non-Hispanic black and Hispanic women were more likely than non-Hispanic white women to have a teen birth (not shown).

Table 4 presents the results of the multivariate logistic regression models predicting a teen birth with interactions between birth cohort and the sociodemographic factors. With the exception of women whose mothers had a high school education, the odds of a teen birth did not vary across cohorts within maternal education categories. Among the daughters of high school-educated mothers, those born in the late 1980s were less likely to become teen mothers than those born 1974–1977.

Among women from two-parent families, those in the most recent cohort were only 72 % as likely to have been teen mothers as those in the first cohort. There were no cohort differences in the odds of a birth among women from other family backgrounds. There were no cohort differences in the odds of a teen birth among daughters of teen mothers; whereas daughters of adult mothers born 1986–1990 were less likely to have had a teen birth than those born 1974–1977. Black women born 1982–1990 were less likely to have been teen mothers than black women in the first cohort; there were no cohort differences among other racial/ethnic groups, net of the other sociodemographic factors.

Discussion

This analysis used national data to explore changes in the risk of becoming a teen mother across birth cohorts that correspond to the years beginning with the start of the most recent decline in U.S. teen birth rates: 1991. We examined trends in both the distribution of basic risk factors associated with teen birth and then trends in the relationships between these risks and becoming a teen mother.

This study provides support for the premise that a portion of the decline in teen birth rates since 1991 is associated with, among other factors, changes across birth cohorts in some basic demographic factors, particularly with the increased proportion born to more educated mothers and therefore a steady rise in the proportion of women at lower risk for a teen birth. This relationship stems from the inverse relationship between maternal education and age at first sex and the positive association between maternal education and use of contraception among adolescents [16, 36, 37]. The results also suggest that the decline in overall teen birth rates would have been greater had the proportion of women who grew up in two-parent families not declined across birth cohorts.

As the proportions of teens in these various sociodemographic categories have shifted over time, so has the meaning of the categories. There has been a steady rise in the proportion of adults with a high school diploma or college degree. In past decades, leaving high school without a diploma was common and a high school diploma was considered a substantial achievement. Even during the relatively brief 17-year period covered by the cohorts in this

study, the percentage of women with mothers who went beyond high school rose from 45 to 56 %. During earlier times, most jobs that offered a decent standard of living required no more than a high school diploma. More recently, by contrast, dropping out of high school and often, not going beyond high school, is seen as a failure and a path to economic hardship as an increasing number of jobs with security, benefits, possibilities for advancement and a middle-class wage require at least some post-secondary education. Moreover, the income gap between those with more and less education has widened markedly during the last quarter of the twentieth century [38].

The circumstances and meaning of teen motherhood have also changed over time. When women in the first cohort in this study were teens, teen birth rates were more than twice as high as they were for the last cohort. Moreover, 31 % of earlier teen births were to married women compared to about 11 % of those among more recent births [7]. Thus, the children born to teen mothers in the early 1990s often entered different family and economic circumstances than those born in the late 2000s. Their chances of growing up in a stable, middle-class two-parent family were slightly higher than those of children of later teen mothers. As the percentage of teen births that were to unmarried teens rose over the past decades, the often dim prospects of both mother and child became a focus of research and policy. Thus, although maternal education, maternal age at first birth and family structures are measured in the same way across cohorts, any interpretation of the results presented here must take into account that the meaning of these variables, and the categories that comprise them, have changed over time.

The results also suggest that the declining birth rate is not due to a decrease in the risk of a birth among teens in higher risk groups measured here. The data show that there was no significant decline in the risk of becoming a teen mother *within* the higher risk sociodemographic groups across the birth cohorts. During a time period when teen birth rates fell by more than half, the odds of a teen birth for those whose mothers did not finish high school, those from non-intact families and those for daughters of teen mothers did not change across cohorts (Table 4). In contrast, growing up in a stable, two-parent family or being born to an adult mother, low-risk categories, was more protective for recent cohorts during this period of steady decline since 1991. Taken together, the trends in risk factors and the lack of decline of the risk of a birth within higher risk groups across birth cohorts provide support for the premise that a portion of the decline in teen birth rates is due to a decreasing proportion of teens falling into high risk categories among the factors analyzed here. They also provide support for the related premise that declines in adolescent childbearing rates are not the result of declines in teen birth rates among the young women in these high risk categories but to the increasing proportion of teens who were in lower risk categories.

Limitations

Many factors affect the chances that a teenager will become a parent, including contraceptive methods and policies, access to sexuality education and health care, and social and economic influences at the individual, family, school, community and national levels. Although some of these measures are available for analyses of a given point in time, analysis

of teen childbearing over a long period of time involves trade-offs. While we were limited in the number of factors available and measured consistently over the past several waves of national datasets including the NSFG, we concluded that it was important to use what was available to shed light on long-term changes in the way these factors are associated with teen childbearing. These data, even with their limitations, contribute to our understanding of long-term trends beyond what vital statistics data, which contain race/ethnicity but no background information, can tell us about trends.

Conclusion

Teen birth rates have been generally declining in the U.S. since the late 1950s [7, 9]. Currently, the teen birth rate is lower than at any time since at least 1940 and it has declined steadily since a peak in 1991 [9]. Results from this analysis suggest recent downward trends are associated with changes in the demographic characteristics of women, particularly increases in educational attainment. However, there have not been corresponding declines in the risk of becoming a teen mother among those in higher risk categories, such as lower maternal education, growing up in a non-intact family or being the daughter of a teen mother. Recognizing these trends may increase understanding of the forces behind changes in the teen birth rate.

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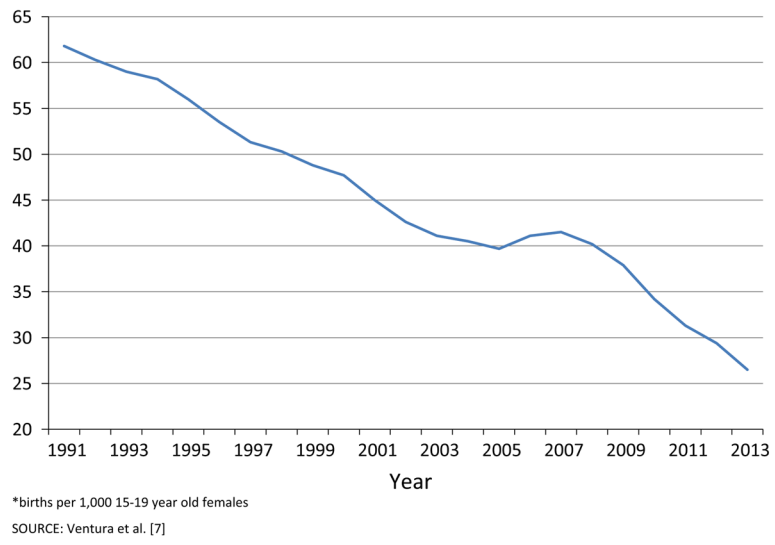


Fig. 1.
U.S. Teen birth rate*, 1991–2013

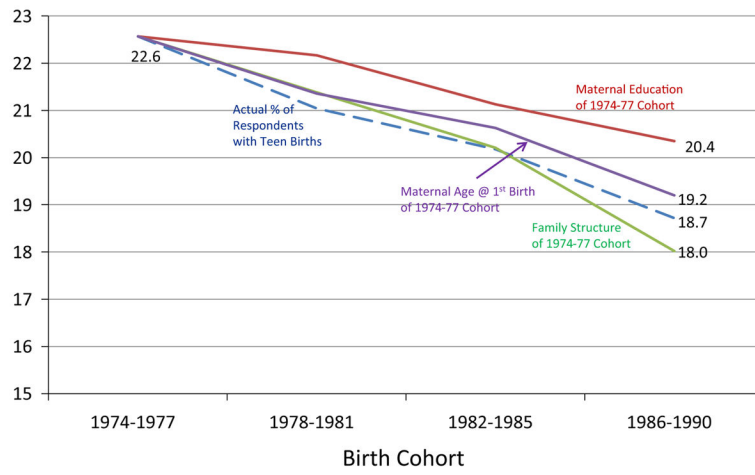


Fig. 2. Percent with a birth by age 20: actual and with 1974–1977 sociodemographic distributions

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Table 1

Distribution of family sociodemographic factors across birth cohort

Birth cohort Years 15–19	1974–1977 1989–1996	1978–1981 1993–2000	1982–1985 1997–2004	1986–1990 2001–2009
<i>Mother's education</i> ***				
< High school	20.4 (18.3–22.8)	17.2 (15.2–19.5)	17.6 (15.3–20.2)	15.9 (13.6–18.6)
High school	34.8 (32.0–37.6)	32.1 (29.9–34.4)	32.6 (29.3–36.0)	27.8 (24.7–31.1)
Some college	25.1 (23.0–27.4)	28.3 (26.2–30.6)	26.6 (24.1–29.2)	30.6 (27.4–34.0)
College degree	19.7 (17.4–22.2)	22.3 (20.0–24.8)	23.3 (20.4–26.4)	25.8 (22.7–29.1)
<i>Family structure growing up</i> ⁺				
Not 2 parents	42.5 (39.8–45.3)	41.0 (38.4–43.6)	42.6 (39.3–45.9)	46.5 (42.9–50.0)
<i>Mother's age at 1st birth</i> ⁺				
< 20 years old	35.1 (32.3–37.9)	33.7 (31.2–36.2)	32.4 (29.2–35.7)	30.9 (27.9–34.1)
<i>Race/ethnicity</i> *				
NH white	65.3 (62.1–68.4)	62.8 (59.1–65.7)	63.0 (59.0–66.8)	59.2 (54.8–63.6)
NH black	14.3 (12.6–16.3)	14.5 (12.6–16.6)	13.2 (11.0–15.8)	14.8 (12.2–17.9)
Hispanic	14.8 (12.6–17.3)	14.6 (12.4–17.2)	17.1 (14.2–20.3)	17.0 (14.0–20.6)
NH other	5.4 (4.3–7.1)	8.4 (6.1–11.4)	6.8 (5.2–8.9)	8.9 (6.4–12.3)
% in cohort	28.6	29.8	22.6	19.1
N	3,274	3,516	2,673	1,977

Analyses tested for statistical differences in distributions of SD factors between the first and last cohort

⁺ $p < 0.10$;* $p < 0.05$;*** $p < 0.001$

Table 2

Percent of women with a birth by age 20 by sociodemographic factors and birth cohort

Birth cohort Years 15–19	1974–1977 1989–1996	1978–1981 1993–2000	1982–1985 1997–2004	1986–1990 2001–2009
Total *	22.7 (20.4–25.2)	21.2 (19.0–23.6)	20.2 (17.6–23.1)	18.7 (15.9–21.8)
<i>Mother's education</i>				
< High school	38.2 (33.6–43.1)	38.8 (32.9–45.1)	36.9 (29.2–45.4)	39.5 (32.1–47.4)
High school	24.3 (20.4–28.6)	24.0 (20.2–28.2)	22.7 (18.6–27.4)	18.7 (14.4–23.9)
Some college	18.5 (14.8–22.9)	15.6 (12.4–19.4)	14.7 (11.6–18.4)	14.9 (11.5–18.9)
College degree	8.5 (6.0–11.8)	10.1 (7.7–13.1)	10.2 (6.9–14.8)	10.4 (6.2–16.8)
<i>Family structure growing up</i>				
Always 2 parents **	15.2 (12.8–17.8)	15.3 (12.6–18.5)	14.3 (11.4–17.9)	10.5 (8.1–13.4)
All others	32.9 (29.4–36.6)	29.6 (26.2–33.3)	28.2 (24.4–32.3)	28.2 (23.5–33.3)
<i>Mother's age at 1st birth</i>				
< 20 years old	35.0 (30.9–39.5)	34.8 (30.8–39.2)	31.6 (26.2–37.4)	33.8 (28.5–39.5)
20 years old **	16.0 (13.7–18.6)	14.1 (12.0–16.6)	14.7 (12.3–17.5)	11.3 (8.9–14.2)
<i>Race/ethnicity</i>				
NH white	16.2 (13.5–19.3)	13.3 (11.2–15.8)	15.8 (12.8–19.4)	13.1 (10.0–17.0)
NH black **	40.0 (34.4–45.9)	33.3 (28.4–38.6)	28.9 (23.8–34.7)	27.6 (22.1–33.9)
Hispanic *	35.2 (30.2–40.6)	39.5 (33.0–46.4)	29.2 (24.0–35.0)	26.6 (20.4–34.0)
NH other	21.3 (15.0–29.4)	26.7 (16.8–39.6)	21.7 (11.7–36.7)	25.9 (17.3–37.0)

Analyses tested for statistical differences in % with a teen birth within each strata of SD factors between the first and last cohort

* $p < 0.05$;** $p < 0.01$

Table 3

Odds of a first birth by age 20: main effects models

Birth cohort (years 15–19)	Odds ratio of teen birth	
	Base model	Full model ^a
1974–1977 (1989–1996)	1.00	1.00
1978–1981 (1993–2000)	0.91	0.95
1982–1985 (1997–2004)	0.86	0.91
1986–1990 (2001–2009)	0.78 *	0.80 *
2ll (df)	13.7 [3]	1327.6 [13]
n	11,440	11,440

* $p < 0.05$ ^aModel controls for race/ethnicity, maternal education, family structure, mother's age at first birth

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Table 4

Odds of a birth by age 20: cohort interaction models

Birth Cohort Years 15–19	1974–1977 1989–1996	1978–1981 1993–2000	1982–1985 1997–2004	1986–1990 2001–2009
<i>Mother's education</i>				
< High school	1.00	0.99	0.99	0.97
High school	1.00	0.99	0.94	0.63 *
Some college	1.00	0.75	0.72	0.70
College degree	1.00	1.22	1.10	1.18
<i>Family structure growing up</i>				
Always 2 parents	1.00	1.08	0.94	0.72 *
All others	1.00	0.86	0.88	0.84
<i>Mother's age at 1st birth</i>				
< 20 years old	1.00	1.03	0.90	0.92
20 years old	1.00	0.88	0.90	0.65 **
<i>Race/ethnicity</i>				
NH white	1.00	0.86	1.00	0.82
NH black	1.00	0.72	0.64 *	0.62 **
Hispanic	1.00	1.30	0.88	0.77
NH other	1.00	1.66	1.31	1.46

ANOVA tests (Wald F tests) were used to test for cohort effects within each level of the sociodemographic variables

* $p < 0.05$;** $p < 0.01$