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FIFTY YEARS OF UNINTENDED BIRTHS: EDUCATION GRADIENTS IN UNINTENDED FERTILITY IN THE U.S., 1960-2013

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Fifty Years of Unintended Births:
Education Gradients in Unintended Fertility in the U.S., 1960-2013

Abstract (200 words): Education differentials in unintended fertility in the United States are longstanding, dating back at least to the 1930s. When the hormonal contraceptive pill was introduced, unwanted fertility fell, and demographers predicted that education gradients would also erode. Yet current surveys show continued high unintended fertility and large education differentials. It is not clear when the decline prompted by the Pill stalled or why the predicted educational convergence failed to materialize. To address these questions, we analyze trends in unintended births using data from ten fertility surveys carried out between 1965 and 2013. We show that unintended fertility declined for all women in the 1960s and 1970s, but educational differentials remained stable. Starting in the 1980s, unintended fertility continued to decline for women with a college degree, but stabilized for less educated women, producing increased education differences. These recent trends were largely driven by mistimed rather than unwanted fertility. Our findings, taken together with evidence on the timing of changes in contraceptive access and the economic returns to a college degree, suggest that women's evolving labor force participation plays a larger role in explaining trends than contraceptive access. Unintended fertility both reflects and contributes to socioeconomic polarization in U.S. family systems.

13,469 words (all text, tables, and references); 9,836 words (text only)

Running head: Education Gradients in Unintended Fertility
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Fertility surveys dating back as far as the 1930s show higher levels of unplanned[1] fertility among disadvantaged women than among wealthier and more educated women (Freedman, Whelpton, and Campbell 1959; Kiser and Whelpton 1949; Pearl 1939; Whelpton, Campbell, and Patterson 1966). These findings were reinforced by qualitative research showing that high birth rates among poor women were largely attributable to unwanted fertility (Rainwater 1960). However, the advent of the birth control pill fundamentally changed the reproductive behavior of American women. Married women were quick to start using the Pill, and unmarried women followed soon after, leading to a rapid decline in unwanted births (Goldin and Katz 2002). Demographers predicted that the U.S. would evolve into a "contraceptive society," i.e., one in which contraceptive use was universal and nearly all births were planned (Dixon 1970; Westoff and Ryder 1977). The widespread adoption of the Pill was also expected to eliminate socioeconomic gaps by giving women and couples of all social classes a more effective means to plan, space, and limit childbearing.

Fertility surveys from the 1960s and 1970s indeed found evidence that socioeconomic gradients, proxied by education, shrank in the 1960s and 1970s as fewer women reported unwanted births (Westoff and Ryder 1977). Further declines seemed inevitable. Yet recent studies have shown little change in unintended fertility since the early 1980s: levels of unintended fertility remain high, and education gradients remain large (Mosher, Jones, and Abma 2012). This persistence presents an empirical puzzle: At what point did declines in unintended fertility stall? What happened to the expected declines in class differentials, and

[1] Both terminology and measures are inconsistent across early surveys. We use the term "unplanned" as a general umbrella term to cover different measures across the period of study. We use "unwanted", "mistimed", and "unintended" in their current definitions: an unwanted birth is a birth for which a woman reported that, at the time of conception, she wanted no more children; a mistimed birth is a birth that was wanted, but occurred sooner than desired; an unintended birth is a birth that was either unwanted or mistimed.

why? In this paper, we explore potential explanations for why birth intendedness varies across socioeconomic status and document the evolution of education gradients (as a proxy for socioeconomic status) in unwanted, mistimed, and unintended fertility over the second half of the twentieth century in the United States. Using harmonized data from ten cross-sectional fertility surveys covering a period of more than fifty years, we present descriptive and multivariate analyses to identify when educational differences stopped shrinking and to trace subsequent trends. Based on our findings, we reflect on and evaluate theories about contemporary differences in unintended fertility and consider the role of unintended fertility in a larger pattern of socioeconomic polarization in U.S. family systems.

Evolving education differences in unintended fertility

Demographers identified higher levels of unplanned fertility among disadvantaged women throughout the first half of the twentieth century (Freedman, Whelpton and Campbell 1959; Pearl 1939; Ryder and Westoff 1973; Westoff and Ryder 1977; Whelpton, Campbell, and Peterson 1966). This early work primarily presented planning status as a characteristic of the complete reproductive history rather than the individual birth (e.g., comparing women who met their desired family size with women who surpassed it), so results from these surveys are not easily comparable to current measures. Starting with the 1965 National Fertility Survey (NFS), intendedness was measured at the level of the individual birth; the questions used in the 1965 NFS have appeared in U.S. fertility surveys ever since, with only minor modifications. One of the central findings of the 1965 NFS was the high level of unwanted fertility (i.e., births that took place to women who reported not wanting any [additional] children at the time) in the United States (Ryder 1973; Ryder and Westoff 1971). Unwanted births made up a large part of the growth in birth rates during the Baby Boom, and many of the differences in birth rates across

sociodemographic groups in the U.S. were explained primarily by unwanted births. In particular, less educated women had much higher levels of unwanted fertility than women with more education. The 1970 NFS showed a decline in unwanted birth rates between the early 1960s and the second half of the decade (Westoff 1975; Westoff and Ryder 1977). The declines were largest among the groups with the highest unwanted birth rates in the earlier survey (black women vs. white women; Catholic women vs. non-Catholic women; less educated vs. more educated women). As a result of these trends, differentials in both unwanted fertility and overall birth rates declined during the decade, and demographers predicted an eventual convergence in fertility across education groups (e.g., Westoff and Ryder 1977: 293).

The National Surveys of Family Growth (NSFG), a series of cross-sectional surveys of fertility and contraceptive behavior, were instituted in part to track unintended fertility, inspired by the high levels of unwanted births and apparent subsequent decline documented in the two NFSs (Campbell and Mosher 2000). NSFGs were fielded 6 times between 1973 and 2002, at approximately 5 to 7 year intervals; the NSFG is currently conducted through continuous data collection, with data releases scheduled every two years. Although the questions used to measure unintended fertility have changed somewhat over time, particularly in the way that mistimed births (births to women who want children but at a later point) are categorized, these questions produce largely comparable trends (Campbell and Mosher 2000; Mosher, Jones, and Abma 2012). According to the 1973 NSFG, 13.1% of births to mothers age 15-44 were unwanted (Munson 1977). Women with a college degree reported only 7.4% of their births as unwanted, compared to 16.5% for women with less than a high school education. The overall proportion of births that were unwanted declined slightly by 1982, to about 9.8%, then increased to 13.8% in the NSFG conducted between 2006-2010 (Mosher, Jones, and Abma 2012). Among women with

a college degree in the 2006-2010 data, only 4.0% of recent births were unwanted, compared to 23.2% of births to women without a high school degree. Published reports on overall unintended fertility (i.e., including mistimed as well as unwanted births) are not available until 1982, but show similar trends of increases in the 1980s and 1990s (Mosher, Jones, and Abma 2012).

Based on published reports, then, it is possible to capture the broad outlines of trends in unintended and unwanted fertility for the post-Baby Boom period. However, estimates are not consistently available from all existing surveys, and not all published reports include groupings by education. The first task of this article is purely descriptive: to provide consistent, continuous time trends for unwanted, mistimed, and unintended births overall and by education level for the period 1965-2013, similar to work analyzing trends in educational gradients for other fertility behavior such as the mean age at childbearing (Yang and Morgan 2003) and premarital conceptions and births (England, Shafer, and Wu 2012).

The second task of this paper is more directly explanatory. We use event history analysis to model trends in unintended fertility controlling for age and marital status, among other sociodemographic characteristics. These models assess the contribution of the changing demography of U.S. fertility to changes in unintended fertility. Because our goals are primarily descriptive, we do not propose formal hypotheses, but we do suggest expectations based on existing data and knowledge about unwanted, mistimed, and unintended fertility and their associations with other social and demographic trends. To do so, we explore potential reasons why more and less educated women differ in their fertility behavior.

Explaining education differences in unintended fertility

Many explanations have been proposed for the large educational differences in unintended birth rates, including access to contraception, knowledge of contraceptive methods, self-efficacy,

relationship context, stigma and support from social and family networks, financial costs of childbearing, and conflict with academic or employment goals, among others. We focus on two major factors that contribute to unintended fertility: the availability of effective and affordable contraceptive methods (and abortion) and the motivation to limit childbearing. We focus on these two factors because they are both theoretically important and vary substantially over the period of study in different ways; we do not measure them directly but outline how they evolved over the period of study and how they might be linked to changes in unintended fertility.

Access to contraception and abortion

Educated women are likely to have better access to medical knowledge and medical facilities, as well as more financial resources available for obtaining contraception and abortion (Jaffe 1964; Musick, England, Edgington, and Kangas 2009). A belief in the importance of contraceptive availability drove the early predictions that education gradients in unintended fertility would decline with the introduction of the Pill (e.g., Westoff and Ryder 1977). Recent research suggests that access to contraception and abortion play a relatively small role in explaining current differentials in unintended fertility (Edin, England, Shafer, and Reed 2007; Sable, Libbus, and Chiu 2000). However, the importance of these factors has changed over time and thus may be relevant in explaining long-term trends. The latter half of the 20th century saw the introduction of more effective hormonal methods of contraception, beginning with the Pill in the 1960s and more recently with injectable contraception and the contraceptive patch, along with newer and safer forms of the IUD. Abortion was legalized across the United States in 1973; since then, state-level access restrictions have fluctuated, with growing restrictions in the 1990s and 2000s. Evidence suggests that the cheaper and easier effective contraception is to afford and access, the more likely it will be adopted, with a corresponding decline in unintended fertility

(Peipert, Madden, Allsworth, and Secura 2012). The relationship between abortion laws and unintended fertility is more mixed (Beltz, Sacks, Moore, and Terzian 2015; Coles, Makino, Stanwood, Dozier, and Klein 2010; Medoff 2014). Still, these changes could be a potential driver of education differences.

Birth control also became easier and more affordable to obtain during this period. The Title X Family Planning program, enacted in 1970, created a network of family planning centers that provide cost-effective family planning, among other services, for low-income individuals. Two years later, Congress required Medicaid to cover family planning and contraception (Gold et al. 2009). These changes dramatically improved access to contraception among economically disadvantaged and less educated women. There were similar changes in private insurance to increasingly cover contraception during the 1980s and 1990s (Sonfield et al. 2004). For better-educated women, though, the move to family planning coverage in private insurance likely changed behavior only slightly, largely acting as a cost-shifting mechanism. As such, the least educated women may have benefited most from the overall trend toward decreasing cost and increasing access in the 1960s and 1970s, and educational disparities in unintended childbearing should have declined.

Motivation to limit childbearing

Preventing unintended fertility requires not only access to the means of prevention, but also the desire to limit childbearing to times when it is actively sought. From the earliest studies of unintended fertility, researchers recognized that women varied in their approach to having children (Freedman, Whelpton and Campbell 1959; Pearl 1939; Rainwater 1960; Ryder and Westoff 1973; Westoff and Ryder 1977; Whelpton, Campbell, and Peterson 1966). Some women (the wealthiest and most educated) planned births around financial or family circumstances.

Others (disproportionately poor and less educated) were open to simply having children as they came – conceiving births that were later labeled unintended. Contemporary theories of unintended fertility link this difference in motivation to prevent births to variation in the "opportunity costs" of childbearing. Assuming that women do the bulk of childrearing, especially when children are very young, and that market work is often incompatible with childrearing, having a child often means forgoing or reducing paid employment (Becker 1960; Becker and Lewis 1973; Hotz, Klerman and Willis 1997; Willis 1973). A higher potential income is associated with higher opportunity costs of childbearing and should increase women's motivation to prevent unintended fertility. As more women have entered the labor force over the twentieth century, opportunity costs related to employment should become more important, and variation in work experience and in employment conditions may play a larger role in education differences in unintended fertility.

As has been amply documented, women's educational attainment and labor force participation changed dramatically over the past 50 years. In 1970, a third of women had less than a high school degree and only 11% had four or more years of college, but by 2014, only 6% had less than a high school degree and 40% had four or more years of college (U. S. Bureau of Labor Statistics 2015a). Accompanying these educational shifts are changes in the employment behavior of women. In 1965, less than half (45%) of women in the prime working ages of 25-54 were employed (Mosisa and Hipple 2006). The proportion of employed women 25-54 rose substantially in the following decades, peaking in 1999 at 77% before falling slightly to 74% in 2014 (Mosisa and Hipple 2006; U. S. Bureau of Labor Statistics 2015a). Much of the growth can be attributed to maternal employment, which increased 25 percentage points between 1975 (47%

of mothers with children under 18) and 2000 (73%) before falling slightly to 71% in 2014 (U. S. Bureau of Labor Statistics 2010; U. S. Bureau of Labor Statistics 2015a).

Beginning in the 1980s, economic returns to a college degree increased for women (DiPrete and Buchmann 2006). More generally, the labor market has become increasingly stratified, with stagnant wages among the lowest wage earners since 1980 (U. S. Bureau of Labor Statistics 2015b). Unemployment and underemployment are highest among the least educated (U. S. Bureau of Labor Statistics 2015c; Carnevale and Smith 2015), and the available jobs offer fewer benefits and less appealing working conditions (i.e., irregular work scheduling, few opportunities for advancement, frequent layoffs) (Fronstein 2005; Golden 2015). The conditions of employment among less-educated women suggest few, if any, opportunity costs to births that are not explicitly planned despite the more direct financial strains having a child may place on low-income individuals. Conversely, well-educated women have experienced rising employment rates and seen their incomes substantially increase over the past few decades (U.S. Bureau of Labor Statistics 2010), raising the opportunity costs of childbearing over time. This polarization of the labor market implies that the opportunity costs have grown most for highly educated women, and thus that unintended fertility should have fallen more for these women.

Mistimed and unwanted fertility

We describe trends in unwanted, mistimed, and unintended fertility separately. Although unwanted and mistimed births result from the same proximate determinants (sex without effective contraception), they take place in different life course circumstances. Unwanted births, by definition, occur at the end of the childbearing career (although the end of the childbearing career occurs at different ages for different women). Mistimed births, in contrast, can happen either early or later in the childbearing career. Thus, their distribution is likely to have been

differentially affected by changes in marriage and family systems. More specifically, the amount of time women are "at risk" of an unwanted birth is determined by desired family size and age at first birth. On average, the more children a woman wants, the lower the potential for an unwanted birth, and the later she starts childbearing, the shorter the period at risk for an unwanted birth. Desired family size in the United States declined slightly after the Baby Boom but has been largely stable since the 1970s, while the average age at first birth has increased steadily over this period (Blake 1974; Hagewen and Morgan 2005; Mathews and Brady 2009; Martin et al. 2012). Since rising age at first birth implies less time at the end of the childbearing years, from a purely demographic perspective, we would expect to see declines over time in the proportion of births that are unwanted. In contrast, rising ages at first birth, and the accompanying changes in normative and desired age at first birth, would lead to increased time in which women are at risk for a mistimed early birth, so we would expect increases in mistimed fertility.

However, the relationship between fertility and family change in the U.S. and trends in unwanted and unintended fertility cannot be considered purely in terms of the demographic consequences of changing exposure to risk of an unplanned conception. Changing levels of unintended births may also be a *cause* of fertility change. For example, the declines in completed family size after the Baby Boom were largely attributable to declines in unwanted births related to more widespread use of the contraceptive pill and surgical sterilization (Westoff and Ryder 1977). As Bailey (2006) has shown, the introduction of the hormonal contraceptive pill led directly to a later age at first birth, presumably at least in part by allowing women to more effectively prevent mistimed births. These fertility trends have been experienced differently by more and less educated women, which suggests that unwanted and mistimed fertility may also

have changed differentially by education. The narrowing education differentials in completed fertility observed in the 1960s have continued in subsequent decades (Bailey, Guldi, and Hershbein 2013; Westoff and Ryder 1977). In contrast, education differences in first birth timing have increased. The average age at first birth increased from 21.4 in 1970 to 25.6 in 2011, with the most rapid change occurring between 1970 and 1990 (Mathews and Brady 2009; Martin et al. 2012). Most of the increase has been among the better-educated segments of the population; age at first birth has changed little since the Baby Boom for the less-educated. These patterns suggest continued convergence in the proportion of births that are unwanted by education level but educational divergence in mistimed and thus unintended fertility.

Data and methods

Data

Data for this analysis come from the Integrated Fertility Survey Series (IFSS), a harmonized dataset combining data from ten surveys of fertility and family behavior conducted in the United States between 1955 and 2002, supplemented by data from the 2006-10 and 2011-2013 releases of the continuous cycle of the National Survey of Family Growth (NSFG). The component surveys of the IFSS are the Growth of American Families (GAF) surveys of 1955 and 1960; the National Fertility Surveys (NFS) of 1965 and 1970; and the NSFG of 1973, 1976, 1982, 1988, 1995, and 2002. The IFSS compiles data from all surveys and harmonizes the original data, including weights and survey design variables, into comparable formats. Harmonized IFSS data are available online at http://www.icpsr.umich.edu/icpsrweb/IFSS/ . We do not use data from the GAF surveys for this analysis because these surveys collected data on birth wantedness for only a limited subset of births.

All IFSS component surveys and the continuous NSFG are nationally representative, but the populations represented vary. Table 1 presents the sampling frames and sample sizes of each survey. The most notable difference in the sample frames is the exclusion of never-married women in the early fertility surveys. Single women with children in the household are included starting in the 1973 NSFG, but never-married women are not fully represented in the samples until the 1982 NSFG. Nonmarital births are included in retrospective birth histories in all surveys. That is, the sample represents the fertility experience, both within and outside marriage, of women who eventually marry. This subset includes a majority of unmarried mothers in the years covered by these surveys. For example, of women who had nonmarital births in the 1960s, approximately 86% of white women and 67% of black women married within 15 years after the birth of the child (Gibson-Davis 2011). Still, the fertility experiences represented in the survey sample frames are biased estimates of overall U.S. fertility. We return to the implications of the sample frame in the limitations section.

<Table 1 about here>

In all, the surveys used in this analysis include 83,566 women and 154,914 births. Because abortion is severely underreported in survey data in the United States (Jones and Kost 2006), we analyze only pregnancies that end in live birth. Our analysis thus only speaks to educational differences in unintended births and cannot disentangle the impact of conceptions and abortions on these differences. For the descriptive analyses, our analytic sample is based on births. We exclude births with missing dates (dropping n=139). We further limit observation to the 111,524 births occurring in 1960 or later, after the introduction of the Pill. To minimize bias related to retrospective reporting and age truncation (especially since different age groups were included across the surveys), we analyze births within the ten years prior to each survey

(n=72,001 births). Finally, we drop births with missing data on wantedness or intendedness (n=469). After these restrictions, our final analytic sample consists of 71,532 births. For the multivariate analyses, our sample is based on women (rather than births) because we are modeling the risk of having different types of birth (or no birth), as we discuss below. For consistency across surveys, we exclude women who were age 45 or over at the time of the survey (n=1031), and we exclude women with any missing dates of marriage (n=313) or birth (n=32). Finally, one woman with a missing weight was excluded, bringing the final sample size to 82,189 women.

Measures

All IFSS component surveys and the continuous NSFG collect complete fertility histories. We use these data to analyze trends in birth wantedness and intendedness across 11 time periods spanning the second half of the 20th century: 1960-64; 1965-69; 1970-74; 1975-79; 1980-84; 1985-89; 1990-94; 1995-1999; 2000-2004; 2005-09; and 2010-2013. Most of these time periods are five-year periods; the last period is slightly shorter because of the timing of the latest survey. We also tested multivariate models specifying change over time as a linear, quadratic, or cubic function of calendar year, but models using the dummy variable specification provided better model fit.

The basic approach to measuring unintended births was similar across surveys. For each pregnancy, women were first asked if they had stopped using contraception (or never started using contraception) deliberately in order to get pregnant at that time. If they were using contraception at the time of conception, or reported any other reason for not using, they were then asked if, at the time they became pregnant, they ever wanted to have another child. Finally, if they did want a child at some point, they were asked whether the pregnancy happened earlier

than they wanted. If a woman never wanted another child at the time of the pregnancy, the pregnancy is considered "unwanted." (In early surveys, these births are sometimes referred to as "excess fertility" or "number failures.") Wanted births include those that a woman stopped contracepting deliberately in order to conceive as well as those for which she wanted another child at some time. Wanted births that occurred too soon are labeled as "mistimed." The category "unintended" is made up of both unwanted and mistimed births.

There are variations in question wording and response categories across surveys; we list these questions in Appendix Table A1. In particular, there was no direct question about timing in the 1965 and 1970 NFS. For these surveys, we construct the mistimed category indirectly, by subtracting unwanted births from all unplanned births (i.e., births that were not conceived when women had stopped contracepting deliberately to conceive). Our exploratory analyses suggest that the NFS approach estimates slightly lower levels of mistimed fertility and higher levels of unwanted fertility relative to the NSFG approach. The two approaches produce similar estimates of unintended fertility. Thus, trends in mistimed and unwanted births in the 1960s should be interpreted with caution. (But recall that births in the 1960s are measured by the 1973 and 1976 NSFGs as well as the NFS, so the pooled trend is not fully driven by any one survey.) Surveys also varied in how they classified uncertain or ambivalent responses to questions about birth wantedness. All surveys included a "don't know" response; some surveys also separately recorded answers like "didn't care" and "indifferent." We combine all uncertain responses with "unwanted" in analyses.

Educational attainment is measured at the time of the survey because dates of enrollment are not available in most surveys. Educational attainment at the time of the survey may be higher than education at the time of the birth for some women, although enrollment after having

children is relatively rare (Goldrick-Rab and Sorenson 2010; Institute for Women's Policy Research 2014). A larger concern is that educational attainment may be partially determined by fertility, especially early unplanned fertility. We discuss this possibility in the limitations section. The IFSS harmonized variable reports educational attainment as years of schooling. Based on this measure, we created four education categories: no high school degree (less than 12 years), high school degree only (12 years), some college education (more than 12 but less than 16 years), and bachelor's degree or higher (16 years or more). Unfortunately, degree attainment is not consistently available across surveys. Thus, it is not possible to create an accurate measure of degrees received. We also considered using reported years of schooling to create relative measures of education (e.g., education terciles or quartiles). However, some surveys report education in ranges rather than exact years. The approach we adopt is the most straightforward way of creating a meaningful education measure that is reasonably consistent over time. It is important to underscore that while our categorization of education is the same in all surveys, these categories do not have the same meaning over the period of study. Most notably, the proportion of women attending and graduating from college increased substantially over the second half of the 20th century. Thus, the selectivity and social meaning of college education for women changed over time. We describe changing education gradients in unwanted and unintended fertility in the context of the shifting meaning of education.

We control for demographic factors related to education and unintended fertility that may have changed over the period of study. Control variables include age (15-17, 18-19, 20-21, 22-24, 25-29, 30-34, 35 and over), marital status (married vs. unmarried), race-ethnicity (non-Hispanic white, non-Hispanic Black, non-Hispanic other race, Hispanic), parity, and the timing of the most recent birth (no previous birth, had a child less than 24 months ago, had a child 24-28

months ago, had a child more than 48 months ago). Most of these measures are straightforward and highly comparable across surveys, with a few exceptions. In some surveys, complete marriage histories are collected, while in other surveys start and end dates are recorded only for the first, second, and most recent marriage. For consistency, we count only the first, second, and most recent marriage in all surveys; for the few women who were married more than three times, some of the time spent married is treated as time spent unmarried. Approaches to measuring race-ethnicity varied somewhat over time. Although the NFS included Hispanic women, these surveys did not measure Hispanic ethnicity. In the 1973 NSFG, the first survey that measured Hispanic ethnicity, less than 3% of the sample identified as Hispanic, and the Hispanic population was likely smaller in the earlier surveys. Thus, we treat all women in the NFS sample as non-Hispanic. Previous analyses of fertility using these data suggest that this assumption does not distort results (Hayford, Guzzo, and Smock 2014). Unfortunately, because cohabitation was not measured in the earlier surveys, we are unable to distinguish cohabiting from non-cohabiting women. Similarly, other potential control variables such as family background or religiosity are not included because they were not consistently available across surveys.

Analyses

All analyses use survey weights, and all standard errors are adjusted for complex survey design using SURVEY procedures in SAS. We begin with simple tabulations of the proportion of births that were reported as unwanted, mistimed, and unintended by mother's education and by the time period of birth. We then proceed to multivariate analyses to test the statistical significance of time change and to account for changes in the composition of the population and fertility behavior that affect exposure to risk of an unintended conception. We expected different trends for unwanted and mistimed births, and descriptive analyses fit these expectations (see

Figures 1 and 2 below). We therefore initially estimated models treating unwanted and mistimed births as separate outcomes. However, in the event history framework, we found that the primary predictors of unwanted vs. mistimed births were age and parity. Although time trends differed for unwanted and mistimed births, education gradients did not differ in the multivariate models. We therefore present the simpler three-outcome model (unintended birth, intended birth, no birth) rather than the model differentiating between wanted and mistimed births as an outcome.

We use discrete-time event history analysis with person-months as the unit of analysis. For these analyses, women enter the sample at age 15, the year 1960, or ten years prior to the survey, whichever is latest, and contribute person-months until the date of the survey. The outcome measure is lagged by 9 months in order to describe the association of birth intendedness with the context at the time of conception of the birth. Months while a woman is pregnant are not included in the analysis, since women are not at risk of conception during pregnancy. We use a competing risks framework to estimate the hazards of experiencing an unintended birth vs. an intended birth or no birth. Results are presented in the form of two sets of contrasts: the relative risk of having an unintended birth vs. no birth and the relative risk of having an unintended birth vs. an intended birth. These two contrasts can be thought of as conceptually equivalent to unintended birth rates and the ratio of unintended to intended births. Because the hazard of having a birth is very low in any given month, the hazard of having no birth approaches one, and the first contrast (unintended birth vs. no birth) is roughly comparable to an unintended birth rate. The second contrast (unintended birth vs. intended birth) is the ratio of unintended to intended birth hazards. These two contrasts may show different trends if educational gradients in intended fertility change over time.

The primary focus of this analysis is to understand how educational differences in fertility change over time. To address this question, we estimate interactions between measures of educational attainment and time period. As noted above, we specify time as a series of dummy variables for five-year periods; we include interactions between educational categories and each time period. We use the period 1975-79 as the omitted category in these models. We chose this period because descriptive analyses indicated a change in the trend lines around this time, making it a useful comparison point, and to avoid possible measurement issues (related to the different questions used in the NFS) associated with using the earliest time point as a reference category. In exploratory analyses, we ran all models separately by time period in order to assess whether the relationship between intended and unintended fertility and other controls changed over time. We found some suggestion of race-ethnic convergence over time, but results for educational gradients did not change when taking this variation into account. Since race-ethnic convergence is not the main focus of this analysis, we do not include these interaction terms in the final models. Coefficients for other variables did not vary consistently over time.

Results

Descriptive results

Figure 1 shows change over time in the proportion of births reported as unwanted for all women and by educational attainment (no high school degree, high school degree only, some college, bachelor's degree or higher). The sample sizes for these proportions are reported in Table 2, along with the distribution of mothers by educational attainment in each five-year time period. Overall, the proportion of births reported as unwanted fell during this time period from about 25% of births in 1960-64, or nearly one in four births, to 14% in 2010-13. This decline was sharpest in the first two decades of the period of analysis, from 1960 to 1980. After 1980, the

level of unwanted fertility did not decline farther and appears even to have increased slightly starting in the late 1990s. These trends suggest the early decline in unwanted fertility was sparked by the introduction of hormonal contraception in the 1960s, then followed by a period of plateau at relatively high levels.

<Figure 1 about here>

<Table 2 about here>

In all time periods, unwanted births were most common among the least educated women and least common among the most educated women. In the first part of the period, trends did not vary substantially by education level – women in all education groups experienced the rapid decline in unwanted births in the 1960s and 1970s. Unlike early work analyzing the 1960s (Ryder and Westoff 1977), we did not find evidence of a narrowing educational gap for unwanted births in this time period. This difference may be to the larger age ranges included in our analysis or to differences in the outcome used (proportion of completed fertility vs. proportion of all births). We discuss these differences further in the discussion section of the paper; our results suggest the early conclusions and predictions of declining gradients were overstated.

Starting in the 1980s, however, there is some suggestion of differential change by education level. Women in the highest and lowest education groups (women with a bachelor's degree and women without a high school degree) experienced stability in the proportion of births that were unwanted between 1980 and 2010. In contrast, women in the middle groups, those with a high school degree or some college but less than a bachelor's degree, reported an increase in the proportion of unwanted births. This increase was largest among women with a high school degree; while the level of unwanted fertility among this group was similar to women with some

college at the start of the period, by the early 21st century women with a high school degree but no college experience more closely resemble women without a high school diploma. This convergence is likely due to educational selectivity – as the proportion of women attending college increases, women without any postsecondary education are increasingly negatively selected. As a result of these shifts, the difference between women with a bachelor's degree and women in the middle education groups increased, while the difference between women without a high school degree and women with intermediate levels of education declined.

Figure 2 presents trends for mistimed births; again, sample sizes appear in Table 2. Declines in mistimed births are less marked than declines in the proportion of births reported as unwanted. In particular, mistimed births do not show the same sharp fall during the 1960s as unwanted births (Figure 1). This trend is somewhat surprising given the evidence that the earliest adopters of the Pill were younger married women (Westoff and Ryder 1971). It may be that norms about desired first birth timing changed simultaneously with the introduction of the Pill, so that birth at young ages were not initially considered mistimed (cf. Bailey 2015). It is also possible that the restricted sample frames of the early surveys underestimate declines; we discuss this possibility further in the limitations section. For women with a bachelor's degree, the proportion of births reported as mistimed fell steadily between the 1960s and the early 21st century. For women in other education groups, the trend lines are close to flat for most of the period under study.

<Figure 2 about here>

Figure 3 displays trends for unintended births overall. Since unintended births combine unwanted and mistimed births, Figure 3 is produced essentially by adding trend lines from Figures 1 and 2. In this combined category, the divergence between the most educated women

and other education groups is more pronounced. All women experienced a decline in the proportion of births that were unintended in the 1960s and early 1970s, but this decline was largest for women with a bachelor's degree or higher. While unintended births continued to decline for the most educated women in the 1970s, 1980s, and 1990s, the declines slowed and eventually plateaued for women without any college education. As a result, education differences in unintended births were much larger toward the end of the period than they were in the 1960s.

Multivariate results

These bivariate descriptions do not account for changes in the race-ethnic composition of the population, marriage rates, or birth timing. They also do not account for the time at risk of an unwanted or mistimed birth. We therefore proceed to multivariate analysis of unintended births. As described in the methods section, we use event history analysis to model the hazards of two possible competing outcomes, an unintended birth and an intended birth, and present results (Table 3) in the form of two sets of contrasts. The first, the relative risk of having an unintended birth vs. no birth, can be interpreted as an unintended birth rate. This rate the behavioral outcome of interest. The second, the relative risk of having an unintended vs. an intended birth, is most closely comparable to the proportions shown in the figures.

<Table 3 about here>

Time trends from the multivariate models are largely similar to the bivariate results from Figure 1. Recall that the reference category for time trends is the period 1975-79 and the reference category for education is women without a high school degree. For both column 1 and column 2, coefficients for the pre-1975 time period are positive, indicating higher unintended fertility before 1975, although the difference between the early and late 1970s is not statistically significant for the unintended vs. intended contrast. The coefficients are largest in magnitude in

the early period, indicating a continuing decline during this period. After 1975, coefficients in column 1 are mostly positive and statistically significant, showing an upturn in unintended fertility for the least educated women. Coefficients in column 2 are mostly not statistically different from zero. The similarity in time trends in multivariate and descriptive analyses (Figure 3) suggests that change over time in the proportion of births that are unintended is not primarily explained by changes in the exposure to risk or in the population composition. In additional analyses (not shown), we estimated models without sociodemographic controls. The coefficients for the time trends (for both main effects and interactions, and for both contrasts) differed very little from those shown here, adding further evidence that trends in unintended births are not the result of compositional change.

Results for education differ somewhat between the multivariate and bivariate analyses. The main effects coefficients, which represent educational differences in the period 1975-79, the reference period, show the expected negative and statistically significant relationship between education and the hazard of having an unintended birth vs. no birth (column 1). Women in all other education categories have lower unintended birth rates than women without a high school degree. Coefficients in column 2 are smaller in magnitude for women with a college degree, not statistically significant for women with some college, and positive for women with a high school degree (though only marginally significant, $p<.10$). That is, the proportion of births that are unintended is larger among women with a high school degree than among women without a high school degree once other characteristics are taken into account. These unexpected results imply that there is variation by education in intended birth rates as well and points to the importance of considering differences in intended births as well as unintended births when analyzing variation in the proportion of births that are unintended.

The primary focus of this analysis is change over time in educational differences in unintended fertility, represented here by the interactions between time period and education. Table 3 includes joint significance tests for each set of education interactions (based on Wald chi-square tests) as well as the magnitude and significance of each interaction. For women with a bachelor's degree, both sets of interactions (unintended birth vs. no birth, unintended birth vs. intended birth) are jointly statistically significant. The coefficients are relatively small and not individually statistically significant before 1975. Thus, consistent with the descriptive results, there is no evidence of educational convergence in unintended fertility in the 1960s and 1970s. Starting in 1985, the interaction terms are larger and negative: relative to women without a high school degree, women with a bachelor's degree experienced less increase in unintended fertility and potentially even a decline. That is, the widening gap between women with a bachelor's degree and less educated women shown in Figure 3 persists when controlling for individual characteristics.

Interaction terms for differences between women with and without a high school degree are also jointly significant, although few of the coefficients are individually statistically significant. For the unintended birth vs. no birth contrast, the significant negative interaction for 1985-89 and the moderately large magnitude of the interaction terms for 1980-84 and 1990-94 suggest that in the 1980s and early 1990s, differences between women without a high school degree and women with a high school degree were significantly larger than in 1975-79. The coefficients for the post-2000 period are relatively large and positive, consistent with the apparent narrowing of the gap between women with and without a high school degree in the most recent period suggested by Figure 3, but these coefficients are not individually statistically different from zero. The interaction terms in column 2 (unintended birth vs. intended birth) are

mostly negative. The higher ratio of unintended to intended births for women with a high school degree vs. less than a high school degree (positive main effect coefficient) appears not to persist after the 1975-79 reference period. Time trends for women with some college and women without a high school degree do not differ significantly.

Results for control variables are largely consistent with findings from previous research on the determinants of unintended fertility. Unintended birth rates (the relative risk of an unintended birth vs. no birth, column 1) are higher among Black and Hispanic women than among non-Hispanic white women; the proportion of births that are unintended (the relative risk of an unintended birth relative to an intended birth, column 2) is higher among Black women than among white women but does not differ significantly between Hispanic women and non-Hispanic white women. Married women have higher unintended birth rates than unmarried women, consistent with the generally higher birth rates of married women during the period of study, but report a much lower proportion of births to be unintended. Age is negatively associated with both unintended birth rates and the proportion of births reported as unintended. Having more children and having had a birth in the past two years increase the odds of having an unintended birth vs. no birth and vs. an intended birth.

Discussion and conclusions

Summary and discussion

Simple descriptive figures show that the proportion of births reported as unwanted declined steadily and substantially for women in all education groups during the 1960s and 1970s in the United States. After 1980, however, the level of unwanted fertility stagnated at relatively high levels. Patterns of change were different for mistimed births. Women with at least a bachelor's degree experienced a steady decline in mistimed births starting in the 1960s, but less

educated women reported stable or even slightly increasing levels of mistimed births. Overall, the second half of the twentieth century saw a divergence in educational differences in unintended fertility, primarily driven by falling levels among the most educated women. Multivariate models accounting for the time at risk and the changing composition of the U.S. population confirm the growing educational divide and the marked differential between women with a college degree and all other women.

Demographers studying unplanned fertility in the 1960s and 1970s had hypothesized that the widespread introduction and growing accessibility and affordability of effective means of contraception would reduce educational gradients in unwanted childbearing, and they found some evidence of this convergence in the 1960s (Westoff and Ryder 1977). Our results do not show convergence; if anything, early declines were larger among women with a bachelor's degree or more. The lack of educational convergence occurs across our analyses of unwanted, mistimed, and unintended fertility and holds in both multivariate and descriptive analyses. The variation in results between this analysis and earlier work may be due to the age structure of our sample. Early estimates of convergence used the 1965 and 1970 NFS, two surveys of women of reproductive age. We add data from later surveys, the 1973 and 1976 NSFG. Our sample thus includes relatively more young women (since we include retrospective reports from women who were in their 40s in the 1970s as well as in the 1960s). If these younger women had lower unwanted birth rates, including them would shift early estimates down and reduce estimated convergence. Our analysis also expands on earlier results by accounting for exposure to risk and marriage rates. Relative to early descriptive results, our estimates provide a fuller depiction of unintended fertility and include multivariate analysis.

Why might unintended fertility have diverged by education? In both contemporary research and early theorizing, there are two main approaches to explaining education differentials. The first approach points to practical aspects of fertility control as the main factor leading to higher unplanned fertility among less advantaged women. The legalization of abortion and the development and dissemination of highly effective coitus-independent methods of contraception, especially the hormonal contraceptive pill, affected the entire population, but may have been more consequential for less educated women. The differences in access that persist, in turn, may explain continued education gradients in unintended fertility (Goodman et al. 2007; Dehlendorf et al. 2010). However, the timing of the growing educational gap, occurring after the biggest and most dramatic shifts in family planning methods and access, suggests that contraceptive access is not the primary cause of change. And contemporary accounts from women and couples who have experienced unintended fertility rarely focus on cost or access as a reason for non-use of contraception (Edin, England, Shafer, and Reed 2007; Sable, Libbus, and Chiu 2000).

The second approach to explaining differentials highlights the role of motivation to prevent pregnancy. Women's educational and labor force opportunities have expanded over the course of the 20th century, and the timing of trends identified in our analysis suggests that these changes have contributed to education differentials in unintended fertility. Our multivariate models and descriptive figures show that education differentials in unintended fertility widened starting in the 1980s. During the same time frame, the income gains associated with a college degree for women rose sharply (DiPrete and Buchmann 2006). Our results are therefore consistent with the hypothesis that the greater wages available to more educated women are one reason for their lower rates of unintended fertility. However, more direct empirical tests of the

opportunity costs framework have shown weak results; for instance, opportunity costs, proxied by earnings, do not seem to explain education differences in fertility (Musick et al. 2009). The opportunity costs framework, in its emphasis on rational decision-making, is also limited in its ability to fully explain unintended births, which are by definition not solely the product of explicit decisions to conceive and carry a child to term.

The demographic literature has long recognized the difficulty of measuring the full range of attitudes and outlooks about childbearing. In one of the earliest systematic studies of unplanned fertility, Pearl (1939: 214) observed that, "The more one studies the matter the more it becomes evident that the practice of contraception rests upon an extremely complicated psychological pattern of attitudes and motivations that are interwoven with social situations and integrations." Thirty-some years later, reflecting on the impact of the NFS and its new measures of fertility intentions, Ryder (1973), ruminated on the inability of these measures to capture the instability of fertility intentions, the ambivalence women may feel about childbearing, or the importance of social context in shaping childbearing goals. These concerns have become more central in contemporary research on fertility intentions, which has made some progress in both theorizing and measuring the complex social-psychological underpinnings of fertility intentions. It is clear that mixed feelings about childbearing are common (Miller, Barber, and Gatny 2013; Santelli et al. 2003; Santelli et al. 2009; Yoo, Guzzo, and Hayford 2014); that many women do not have strong feelings about childbearing either way (McQuillan, Greil, and Shreffler 2011); and that women's feelings about childbearing are strongly dependent on their current circumstances, particularly financial resources and romantic relationships (Aiken, Dillaway, and Merx-Korff 2015; Edin et al. 2007). All of these factors may contribute to unintended fertility, and the motivation to prevent pregnancy is a product not only of economic opportunity costs, but

also of personal outlook, social influences, and romantic relationships, all of which change over the life course (Bachrach and Morgan 2013). In particular, births may be reported as mistimed not only or even primarily because they are too early chronologically, but because they occur when circumstances are less than ideal.

The growing education gradients in unintended fertility therefore likely reflect growing polarization not only in economic opportunity but also in family systems in the United States. The majority of Americans still believe that marriage is the ideal setting for having and raising children (Pew Research Center 2010; Thornton and Young-DeMarco 2000). But in the period covered by our analysis, marriage rates declined steadily for women in their teens and twenties. At the same time, education gradients in marriage shifted. The most educated women are now more likely than less educated women to marry eventually, a gradient that increased in the 1980s along with the economic returns to a college degree (DiPrete and Buchmann 2006; Wang and Parker 2014). Less-educated women see economic conditions and romantic relationships as unstable, unpredictable, and untrustworthy and feel little hope of achieving marital and financial stability (Edin 2000; Edin and Kefalas 2005; Levine 2013; Silva 2012) Highly educated women, in contrast, can anticipate a point when they can achieve their ideal circumstance for childbearing and childrearing, namely marriage and financial stability. They may therefore be more strongly motivated to postpone childbearing until they reach that point.

Limitations

Pooling data from multiple surveys allowed us to examine unintended fertility over a long time period marked by substantial changes in family formation, contraceptive efficacy and availability, and economic opportunities. In general, the surveys we use in this analysis are considered to be highly comparable, especially for relatively straightforward measures such as

education and the timing of births. These surveys have been widely used to study trends over time (e.g., Bailey, Guldi, and Hershbein 2013; Brewster, Cooksey, Guilkey, and Rindfuss 1998; Finer and Philbin 2014; Kennedy and Bumpass 2008; Rindfuss, Morgan, and Swicegood 1988), and analyses specifically focused on the comparability of data across surveys have found high consistency (e.g., Ekouevi and Morgan 1991; Swicegood, Morgan, and Rindfuss 1984). However, using data from different surveys to analyze trends over time always raises the possibility that apparent trends may be driven by minor variation in survey methodology. Because of the timing of the surveys, we have overlapping data from multiple surveys to describe most time points in our analyses. The fact that time and data source are not fully collinear over the period of analysis means that the peculiarities of any one survey are less likely to drive our results, and in exploratory analyses we found that our findings were robust to the omission of one or more surveys. Still, some caution is required in interpreting results.

Surveys before 1982 have sample frames that are limited according to marriage and childbearing history. This exclusion is most severe for the earliest surveys, which include only currently married women (1965 NFS) or ever-married women (1970 NFS). Data from these surveys leaves out the fertility experience of women who do not marry; to the extent that their births are disproportionately unintended, estimates of unintended fertility for the time period covered by these surveys are biased downward and we undercount declines in unintended births. The 1973 and 1976 NSFGs include never-married women only if they have children in the household. Because never-married women without children are excluded from the sample, and thus are not present in the denominator of rates, our data overestimates both intended and unintended birth rates. However, since women with young children are included and our sample

is restricted to women with births in ten years before the survey, our analyses based on births, such as the proportion of births that are unintended, accurately represent population experiences.

The bias introduced by the limited sample frames of the earliest surveys is somewhat mitigated by the availability of data from later surveys. For example, the period 1973-1982 is described by data from the 1982 NSFG, which included all women of reproductive age in the sample frame, as well as the more limited data from the 1976 NSFG. Still, unintended fertility is likely underestimated in the earliest time period in our analysis. Thus, our description of change over time is conservative, in that the true starting levels for unintended fertility are probably higher than our reported levels. It is not clear how sample frame restrictions might bias our most central findings, those related to education gradients. It is possible that there are changes between the 1960s and the 1970s that are not captured in the limited sample frame. For example, it is likely that the least educated women are most likely to have early unintended births outside of marriage during the early time period. If these births are not captured in the limited sample frame, mistimed births are undercounted in our analysis, and education gradients may actually have been parallel or even declining in the 1960s and 1970s, rather than increasing as shown in our results. However, the significant changes we find after the 1980s are not affected by changes in sample frames, since all surveys covering this time period included all women of reproductive age.

Combining data from multiple surveys also requires compromise in the construction of measures. Early surveys do not measure cohabitation, so we are not able to account for the potential role of cohabitation in explaining education gradients. In recent years, however, the intention status of cohabiting births more closely resembles that of births to non-cohabiting

unmarried women than that of births to married women (Mosher, Jones, and Abma 2012), suggesting that the exclusion of cohabitation is unlikely to completely drive our results.

Finally, we acknowledge that reverse causation may also explain some of the education differences in mistimed fertility. Since mistimed births by definition take place earlier than desired, it may be that having an early unintended birth is a cause of low educational attainment, if it makes it harder for women to enroll in or complete college. However, recent research suggests that the educational impact of teen fertility is relatively low, once selection into early childbearing is accounted for (Kane, Morgan, Harris, and Guilkey 2013). And as the average age of childbearing increases beyond the average age of college completion, the potential for a causal impact of mistimed childbearing on education declines. It is therefore unlikely that the association between unintended childbearing and educational attainment is completely explained by the effect of fertility on education.

Conclusion

At the outset of this paper, we identified an empirical puzzle: at what point did the observed and expected declines in unintended childbearing overall and declines in the socioeconomic differentials, in particular, disappear, and for what reasons? The introduction of the Pill led to a substantial and rapid decline in unwanted births. Our results suggest that this decline was shared across all education groups, and that early analyses likely overstated educational convergence during this period. And contrary to the expectations of early scholars, the move toward a "perfect contraceptive society" did not continue linearly (cf. Westoff and Ryder 1977). We identified differentials in mistimed births as the key underlying factor in overall stable rates and the driver of growing differentials. Whereas differences in unwanted fertility have been fairly stable since the 1980s, education disparities in mistimed fertility have

been growing steadily, with college-educated women experiencing declines while other groups did not. During this time period, both the proportion of women who obtained a college degree and the returns to college education, in terms of both income and access to marriage, were expanding (DiPrete and Buchman 2006). Thus, the expanding education differentials occurred during a time period when access to contraception was not changing substantially, but conditions related to motivation to limit childbearing were. These findings suggest that the availability of effective contraception is not enough – motivation to plan childbearing is a key determinant of unintended fertility.

At the same time, it is important to recognize the substantial barriers to contraceptive access that still exist in the United States. Limited and ineffective reproductive health education, increased restrictions on abortion, and the slowed pace of development of new contraceptive methods all constrain individuals' ability to control fertility. The renewed emphasis on the distribution of long-acting reversible contraceptives (LARCs) and more affordable access to effective methods under the ACA (Guttmacher Institute 2015) may expand women's abilities to manage reproduction and thereby reduce unintended fertility. In fact, there is some evidence that unintended birth rates have declined in recent years and that these declines are linked to the expansion of LARCs (Finer and Zolna 2016). This early evidence of the potential impact of LARCs is promising. However, the introduction of the Pill, which generated similar optimism, failed to lead to long-term reductions in education gradients. We are therefore reluctant to predict that LARCs will be the pathway to a "perfect contraceptive society."

Since World War II, the United States has seen dramatic changes in fertility and family formation. The high (and early) rates of marriage and marital fertility during the Baby Boom have given way to high rates of nonmarital fertility, cohabitation, and relationship instability

(Kennedy and Bumpass 2008; Kennedy and Ruggles 2014; Ventura 2009; Wu 2008). These trends have been unevenly distributed across education groups, leading to a growing educational divide in family systems in the United States (McLanahan 2004). Our findings show that educational differentials in unintended fertility have increased along with differences in other family formation behavior. These growing differences in unintended fertility are partly a cause of other education gradients – for example, the growing difference in age at first birth by education level in the United States is at least in part attributable to higher rates of mistimed births among less educated women. But the education gradient in unintended births also reflects the growing education differences in reasons to plan and control one's fertility, because fertility intentions, and the strengths of those intentions, are situational (Bachrach and Morgan 2013). As the returns to education have grown, well-educated women have reason to plan their fertility – to postpone births until they have achieved circumstances they deem important for childbearing, such as marriage and financial stability. Their less-educated counterparts, who have experienced declining labor market conditions and face poorer marriage prospects, do not see these goals as achievable and so have fewer reasons to plan childbearing. Like other family formation behaviors in the United States, unintended fertility both reflects and reinforces the growing socioeconomic divide.

References

Aiken, Abigail RA, Chloe Dillaway, and Natasha Mevs-Korff. 2015. "A Blessing I Can't Afford: Factors Underlying the Paradox of Happiness about Unintended Pregnancy." *Social Science & Medicine* 13: 149-155.

Bachrach, Christine A., and S. Philip Morgan. 2013. "A Cognitive–Social Model of Fertility Intentions." *Population and Development Review* 39: 459-485.

Bailey, Martha J. 2006. "More Power to the Pill: The Impact of Contraceptive Freedom on Women's Life Cycle Labor Supply." Quarterly Journal of Economics 121(1): 289-320.

Bailey, Martha J. 2015. "Birth Control in America." Paper presented at the Annual Meetings of the American Sociological Association, Chicago, IL. August 21-25.

Bailey, Martha J., Melanie Guldi, and Brad J. Hershbein. 2013. "Is There a Case for a "Second Demographic Transition"? Three Distinctive Features of the Post-1960s U.S. Fertility Decline." In Boustan, Frydman, and Margo (Eds.) *Human Capital and History: The American Record.* University of Chicago Press..

Becker, Gary S. 1960. "An Economic Analysis of Fertility: Demographic and Economic Change in Developed Countries." Princeton, NJ: Princeton University Press and the National Bureau of Economic Research.

Becker, Gary S., and Harold G. Lewis. 1973. "New Economic Approaches to Fertility." *The Journal of Political Economy* 81: 279-288.

Beltz, Martha A., Vanessa H. Sacks, Kristin A. Moore, and Mary Terzian. 2015. "State Policy and Teen Childbearing: A Review of Research Studies." *Journal of Adolescent Health* 56: 130-138.

Blake, Judith. 1974. "Can We Believe Recent Data on Birth Expectations in the United States?" *Demography* 11(1): 25-44.

Brewster, Karin L., Elizabeth C. Cooksey, David K. Guilkey, and Ronald R. Rindfuss. 1998. "The Changing Impact of Religion on the Sexual and Contraceptive Behavior of Adolescent Women in the United States." *Journal of Marriage and the Family* 60(2): 493-504.

Campbell, Arthur A. and William D. Mosher. 2000. "A History of the Measurement of Unintended Pregnancies and Births." *Maternal and Child Health* 4(3): 163-169.

Carnevale, Anthony P., and Nicole Smith. 2015. "Sharp Declines in Underemployment for College Graduates." Center on Education and the Workforce, McCourt School of Public Policy, Georgetown University. https://cew.georgetown.edu/wp-content/uploads/Underemployment-Declines.pdf Accessed 1/6/16.

Coles, Mandy S., Kevin K. Makino, Nancy L. Stanwood, Ann Dozier, and Jonathan D. Klein. 2010. "How are Restrictive Abortion Statutes Associated with Unintended Teen Birth?" *Journal of Adolescent Health* 47: 160-167.

Dehlendorf, Christine, Maria I. Rodriguez, Kira Levy, Sonya Borrero, and Jody Steinauer. 2010. "Disparities in Family Planning." *American Journal of Obstetrics and Gynecology* 202: 214-220.

DiPrete, Thomas A. and Claudia Buchmann. 2006. "Gender Specific Trends in the Value of Education and the Emerging Gender Gap in College Completion." *Demography* 43(1): 1-24.

Dixon, Ruth B. 1970. "Hallelujah the Pill?" *Society* 8: 44-49.

Edin, Kathryn. 2000. "What Do Low-Income Single Mothers Say About Marriage?" *Social Problems* 47(1): 112-133.

Edin, Kathryn, Paula England, Emily Fitzgibbons Shafer, and Joanna Reed. 2007. "Forming Fragile Families: Was the Baby Planned, Unplanned, or In Between." Ch. 2 (Pg. 25-54) in England, Paula, and Kathryn Edin (Eds). *Unmarried Couples with Children.* New York: Russell Sage Foundation.

Edin, Kathryn, and Maria Kefalas. 2005. *Promises I Can Keep: Why Poor Women Put Motherhood Before Marriage*. Berkeley, CA: University of California Press.

Ekouevi, Koffi, and S. Philip Morgan. 1991. "Note on the Reliability and Validity of Mothers' Retrospective Reports of Their Children's Birthweights." 38(1-2): 140-145.

England, Paula, Emily Fitzgibbons Shafer, and Lawrence L. Wu. 2012. "Premarital Conceptions, Postconception ("Shotgun") Marriages, and Premarital First Births: Education Gradients in US Cohorts of White and Black Women Born 1925-1959." *Demographic Research* 27: 153.

Finer, Lawrence B. and Jesse M. Philbin. 2014. "Trends in Ages at Key Reproductive Transitions in the United States, 1951–2010." *Women's Health Issues* 24(3): e271-e279.

Finer, Lawrence B. and Mia R. Zolna. 2016. "Declines in Unintended Pregnancy in the United States, 2008–2011." *New England Journal of Medicine* in press.

Freedman, Ronald, Pascal K. Whelpton, and Arthur A. Campbell. 1959. *Family Planning, Sterility, and Population Growth*. New York: McGraw-Hill Book Company.

Fronstein, Paul. 2005. "Employment-Based Health Benefits: Trends in Access and Coverage." EBRI Issue Brief #284. Employee Benefit Research Institute: Washington, DC. https://www.ebri.org/pdf/briefspdf/EBRI_IB_08-20051.pdf Accessed 1/6/16.

Gibson-Davis, Christina M. 2011. "Mothers but not Wives: The Increasing Lag between Nonmarital Births and Marriage." *Journal of Marriage and Family* 73(1): 264-278.

Golden, Lonnie. 2015. "Irregular Work Scheduling and Its Consequences." EPI Briefing Paper #394. Economic Policy Institute: Washington, DC. http://www.epi.org/publication/irregular-work-scheduling-and-its-consequences/ Accessed 1/6/16.

Goldin, Claudia and Larry Katz. 2002. "The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions." Journal of Political Economy 110(4): 730-770.

Goodman, David C., Lorraine V. Klerman, Kay A. Johnson, Chiang-hua Chang, and Nancy Marth. 2007. "Geographic Access to Family Planning Facilities and the Risk of Unintended Pregnancy." *Maternal and Child Health Journal* 11: 145-152.

Guttmacher Institute. 2015. “Insurance Coverage of Contraceptives.” State Policies in Brief (December 2015). New York: Guttmacher Institute. http://www.guttmacher.org/statecenter/spibs/spib_ICC.pdf Accessed 1/7/16.

Hayford, Sarah R., Karen Benjamin Guzzo, and Pamela J. Smock. 2014. “Decoupling Marriage and Parenthood? Trends in Timing of Marital First Births, 1945-2002.” *Journal of Marriage and Family* 76(3): 520-538.

Hotz, V. Joseph, Jacob Alex Klerman, and Robert J. Willis. 1997. "The Economics of Fertility in developed Countries." Ch. 7 (pg. 275-347) in Rosenzweig, Mark R., and Oded Stark (Eds.) *Handbook of Population and Family Economics* Amsterdam: Elsevier.

Integrated Fertility Survey Series. http://www.icpsr.umich.edu/icpsrweb/IFSS/

Jaffe, Frederick S. 1964 “Family Planning and Poverty.” *Journal of Marriage and Family* 26: 467-470.

Kane, Jennifer B., S. Philip Morgan, Kathleen Mullan Harris, and David B. Guilkey. 2013. “The Educational Consequences of Teen Childbearing.” *Demography* 50 (6): 2129-2150.

Kennedy, Sheela and Larry L. Bumpass. 2008. “Cohabitation and Children’s Living Arrangements: New Estimates from the United States.” *Demographic Research* 19(47): 1663-1692.

Kennedy, Sheela and Steven Ruggles. 2014. “Breaking Up is Hard to Count: The Rise of Divorce in the United States, 1980-2010.” *Demography* 51: 587-598.

Kiser, Clyde V. and P. K. Whelpton. 1949. “Social and Psychological Factors Affecting Fertility. IX. Fertility Planning and Fertility Rates by Socio-Economic Status.” *Milbank Memorial Fund Quarterly* 27(2): 188-244.

Levine, Judith. 2013. *Ain’t No Trust: How Bosses, Boyfriends, and Bureaucrats Fail Low-Income Mothers and Why It Matters*. Berkeley, CA: University of California Press.

Martin, Joyce A., Brady E. Hamilton, Stephanie J. Ventura, Michelle J. K. Osterman, Elizabeth C. Wilson, and T. J. Mathews. 2012. “Births: Final Data for 2010.” *National Vital Statistics Reports*, Volume 61, No. 1. Hyattsville, MD: National Center for Health Statistics.

Mathews, T. J., and Brady E. Hamilton. 2009. “Delayed Childbearing: More Women are Having Their First Child Later in Life.” NCHS Data Brief, No. 21. Hyattsville, MD: National Center for Health Statistics.

McLanahan, Sara. 2004. “Diverging Destinies: How Children Fare Under the Second Demographic Transition.” *Demography* 41(4): 607-627.

McQuillan, Julia, Arthur L. Greil, and Karina M. Shreffler. 2011. “Pregnancy Intentions among Women Who Do Not Try: Focusing on Women Who Are Okay Either Way.” *Maternal and Child Health* 15(2): 178-187.

Medoff, Marshall H. 2014. “Unintended Pregnancy and State Abortion Policy: Rational Choice or Random Behavior.” *Journal of Policy Practice* 13: 258-275.

Miller, Warren B., Jennifer S. Barber, and Heather H. Gatny. 2013. "The Effects of Ambivalent Fertility Desires on Pregnancy Risk in Young women in the USA." *Population Studies* 67: 25-38.

Mosher, William D., Jo Jones, and Joyce C. Abma. 2012. "Intended and Unintended Births in the United States: 1982-2010." National Health Statistics Reports, No. 55. National Center for Health Statistics. Hyattsville, MD: National Center for Health Statistics.

Mosisa, Abraham, and Steven Hipple. 2006. "Trends in Labor Force Participation in the United States." *Monthly Labor Review* October 2006: 35-57.

Munson, Martha Little. 1977. "Wanted and Unwanted Births Reported by Mothers 15-44 Years of Age: United States, 1973." Advance Data, No. 9. Hyattsville, MD: National Center for Health Statistics.

Musick, Kelly, Paula England, Sarah Edgington, and Nicole Kangas. 2009. "Educational Differences in Intended and Unintended Fertility." *Social Forces* 88(2): 543-572.

Pearl, Raymond. 1939. *The Natural History of Population*. New York: Oxford University Press.

Peipert, Jeffrey F., Tessa Madden, Jenifer E. Allsworth, and Gina M. Secura. 2012. "Preventing Unintended Pregnancies by Providing No-cost Contraception." *Obstetrics & Gynecology* 120(6): 1291-1297.

Pew Research Center. 2010. *The Decline of Marriage and the Rise of New Families.* Washington, D.C.: Pew Research Center.

Rainwater, Lee. 1960. *And the Poor Get Children.* Chicago: Quadrangle Books, 1960.

Rindfuss, Ronald R., Morgan, S. Philip, and C. Gray Swicegood. 1988. *First Births in America: Changes in the Timing of Parenthood*. Berkeley: University of California Press.

Ryder, Norman B. 1973. "A Critique of The National Fertility Study." *Demography* 10(4): 495-506.

Ryder, Norman B. and Charles F. Westoff. 1971. *Reproduction in the United States: 1965*. Princeton, NJ: Princeton University Press.

Finer, Lawrence B. and Ilene Speizer. 2009. "Toward a Multidimensional Measure of Pregnancy Intentions: Evidence from the United States." *Studies in Family Planning* 40: 87-100.

Santelli, John, Roger Rochat, Kendra Hatfield-Timajchy, Brenda Colley Gilbert, Kathryn Curtis, Rebecca Cabral, Jennifer S. Hirsch, Laura Schieve, and Unintended Pregnancy Working Group. 2003. "The Measurement and Meaning of Unintended Pregnancy." *Perspectives on Sexual and Reproductive Health* 35: 94-101.

Silva, Jennifer M. 2012. "Constructing Adulthood in an Age of Uncertainty." *American Sociological Review* 77(4): 505-522,

Swicegood, C. Gray, S. Philip Morgan, and Ronald R. Rindfuss. 1984. "Measurement and Replication: Evaluating the Consistency of Eight U.S. Fertility Surveys." *Demography* 21(1):19-33.

Thornton, Arland, and Linda Young-DeMarco. 2001. "Four Decades of Trends in Attitudes toward Family Issues in the United States: The 1960s through the 1990s." *Journal of Marriage and Family* 63: 1009-1037.

U.S. Bureau of Labor Statistics. 2010. “Labor Force Participation Rates among Mothers.” TED: The Economics Daily. http://www.bls.gov/opub/ted/2010/ted_20100507.htm Accessed 1/6/16.

U.S. Bureau of Labor Statistics. 2015a. Household Data Annual Averages, Table 3. “Employment Status of the Civilian Noninstitutional Population by Age, Sex, and Race.” http://www.bls.gov/cps/cpsaat03.htm Accessed 1/6/16.

U.S. Bureau of Labor Statistics. 2015b. “A Look at Pay at the Top, the Bottom, and In Between.” *Spotlight on Statistics* May 2015. http://www.bls.gov/spotlight/2015/a-look-at-pay-at-the-top-the-bottom-and-in-between/pdf/a-look-at-pay-at-the-top-the-bottom-and-in-between.pdf Accessed 1/6/16.

U. S. Bureau of Labor Statistics. 2015c. “Earnings and Unemployment Rates by Education Attainment Rate.” http://www.bls.gov/emp/ep_chart_001.htm Accessed 1/6/16.

Ventura, Stephanie J. 2009. “Changing Patterns of Nonmarital Childbearing in the United States.” *NCHS Data Brief* 18: 1-8. Hyattsville, MD: National Center for Health Statistics.

Wang, Wendy, and Kim Parker, 2014. “Record Share of Americans Have Never Married: As Values, Economics and Gender Patterns Change.” Washington, D.C.: Pew Research Center.

Westoff, Charles F. 1975. “The Yield of the Imperfect: The 1970 National Fertility Survey.” *Demography* 12(4): 573-580.

Westoff, Charles F. and Norman B. Ryder. 1977. *The Contraceptive Revolution*. Princeton, NJ: Princeton University Press.

Whelpton, Pascal K., Arthur A. Campbell, and John E. Patterson. 1966. *Fertility and Family Planning in the United States*. Princeton, NJ: Princeton University Press.

Willis, Robert J. 1973. “A New Approach to the Economic Theory of Fertility Behavior.” *Journal of Political Economy* 81: S14-S69.

Wu, Lawrence L. 2008. “Cohort Estimates of Nonmarital Fertility for U.S. Women.” *Demography* 46(1): 193-207.

Yang, Yang, and S. Philip Morgan. 2003. “How Big are Educational and Racial Fertility Differentials in the US?” *Social Biology* 50, no. 3-4: 167-187.

Yoo, Sam Hyun, Karen Benjamin Guzzo, and Sarah R. Hayford. 2014. "Understanding the Complexity of Ambivalence toward Pregnancy: Does It Predict Inconsistent Use of Contraception?" *Biodemography and Social Biology* 60: 49-66.

Table 1. Component surveys, sampling frames, and sample sizes

Survey	Sample frame	N (women)
NFS: 1965	Currently married women, age 18-54; black women oversampled	5617
NFS: 1970	Ever-married women, age 18-44; black women oversampled	6752
NSFG: 1973	Ever-married women and single women with children in household, age 15-44; black women oversampled	9797
NSFG: 1976	Ever-married women and single women with children in household, age 15-44; black women oversampled	8611
NSFG: 1982	Women, age 15-44; black and teenage women oversampled	7969
NSFG: 1988	Women, age 15-44; black women oversampled	8450
NSFG: 1995	Women, age 15-44; black and Hispanic women oversampled	10847
NSFG: 2002	Women, age 15-44; black, Hispanic, and teenage women oversampled	7643
NSFG: 2006-2010	Women, age 15-44; black, Hispanic, and teenage women oversampled	12279
NSFG: 2011-13	Women, age 15-44; black, Hispanic, and teenage women oversampled	5601

NFS: National Fertility Survey. NSFG: National Survey of Family Growth.

Table 2. Sample size and characteristics of births in sample

	N (births)	Percent of births unwanted	Percent of births mistimed	Percent of births unintended	Percent of births to women with: No h.s. degree	High school degree	Some college	Bachelor's degree or more
1960-64	9204	25	25	50	36	44	12	8
1965-69	13681	20	24	44	31	46	14	9
1970-74	10761	14	26	41	27	46	16	11
1975-79	4856	12	25	37	22	40	22	15
1980-84	4859	12	27	38	21	36	25	18
1985-89	5669	12	23	35	21	34	26	19
1990-94	5138	12	22	34	21	33	25	21
1995-99	4148	13	20	34	20	26	29	25
2000-04	6833	15	21	36	19	28	27	26
2005-09	5290	14	23	38	18	29	27	25
2010-13	1093	14	20	35	15	31	25	29

Data: IFSS (National Fertility Surveys of 1965 and 1970; National Surveys of Family Growth of 1973, 1976, 1982, 1988, 1995, and 2002), National Survey of Family Growth 2006-2010 and 2011-13 releases. Births after 1960, within 10 years of survey, with non-missing data. Percents weighted.

Table 3. Discrete-time event history analysis modeling competing risks of unintended birth vs. intended birth, no birth

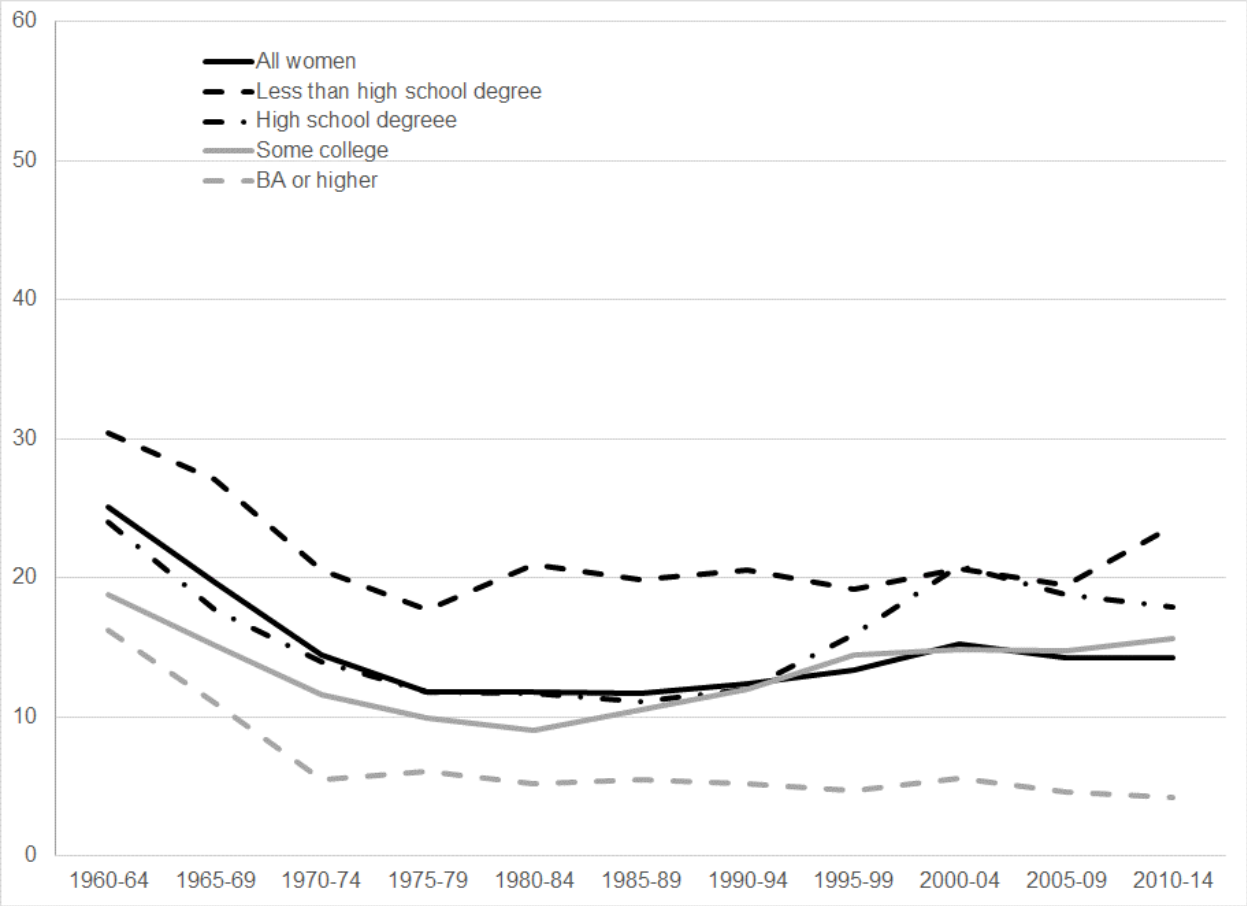
		Column 1: Unintended birth vs. no birth			Column 2: Unintended vs. intended birth		
		b	SE		b	SE	
Intercept		-6.08	0.07	***	-0.10	0.10	
Time period							
1960-64		0.86	0.07	***	0.32	0.10	**
1965-69		0.51	0.06	***	0.17	0.10	+
1970-74		0.19	0.07	**	0.14	0.11	
1975-79 (reference)							
1980-84		0.17	0.10	+	0.20	0.13	
1985-89		0.19	0.08	*	-0.02	0.12	
1990-94		0.23	0.09	*	-0.08	0.12	
1995-99		0.26	0.10	**	-0.02	0.14	
2000-04		0.31	0.09	***	-0.15	0.13	
2005-09		0.13	0.10		-0.31	0.13	*
2010-13		-0.40	0.16	*	-0.32	0.28	
Education							
No high school degree (reference)							
High school degree		-0.21	0.07	**	0.17	0.10	+
Some college		-0.55	0.09	***	-0.15	0.12	
BA or higher		-0.72	0.12	***	-0.29	0.14	*
Education x time interactions							
High school degree x:							
Joint significance test		*			+		
	1960-64	0.01	0.08		-0.06	0.12	
	1965-69	-0.08	0.08		-0.20	0.11	+
	1970-74	0.01	0.09		-0.09	0.12	
	1975-79						
	1980-84	-0.11	0.11		-0.28	0.16	+
	1985-89	-0.26	0.10	*	-0.29	0.14	*
	1990-94	-0.12	0.12		-0.23	0.15	
	1995-99	-0.04	0.12		-0.20	0.16	
	2000-04	0.03	0.10		-0.02	0.15	
	2005-09	0.18	0.12		0.14	0.16	
	2010-13	0.29	0.20		-0.08	0.31	
Some college x:							
Joint significance test		n.s.			n.s.		
	1960-64	0.12	0.10		0.03	0.15	
	1965-69	0.16	0.10	+	0.09	0.14	
	1970-74	0.11	0.11		0.13	0.15	

	1975-79						
	1980-84	-0.09	0.12		-0.22	0.16	
	1985-89	0.03	0.11		0.09	0.15	
	1990-94	-0.03	0.12		0.06	0.16	
	1995-99	0.11	0.12		0.02	0.17	
	2000-04	0.03	0.12		0.09	0.17	
	2005-09	0.08	0.13		0.24	0.18	
	2010-13	0.06	0.24		0.20	0.35	
BA or higher x							
Joint significance test		***			***		
	1960-64	0.20	0.13		0.24	0.16	
	1965-69	-0.01	0.13		0.01	0.16	
	1970-74	-0.06	0.16		-0.16	0.19	
	1975-79						
	1980-84	0.00	0.16		-0.21	0.19	
	1985-89	-0.37	0.15	*	-0.35	0.19	+
	1990-94	-0.33	0.16	*	-0.40	0.19	*
	1995-99	-0.63	0.18	***	-0.78	0.22	***
	2000-04	-0.44	0.16	**	-0.51	0.19	**
	2005-09	-0.19	0.17		-0.19	0.20	
	2010-13	-0.11	0.31		-0.36	0.46	
Fixed characteristics							
Non-Hispanic black		0.64	0.02	***	0.53	0.03	***
Non-Hispanic white (reference)							
Non-Hispanic other		0.16	0.06	**	-0.02	0.07	
Hispanic		0.27	0.03	***	-0.01	0.04	
Time-varying characteristics							
Married		0.42	0.03	***	-1.45	0.04	***
Age 15-17		0.07	0.03	*	0.79	0.05	***
Age 18-19		0.52	0.03	***	0.54	0.04	***
Age 20-21		0.29	0.03	***	0.27	0.03	***
Age 22-24 (reference)							
Age 25-29		-0.33	0.03	***	-0.23	0.03	***
Age 30-34		-0.86	0.03	***	-0.36	0.04	***
Age 35 and up		-1.61	0.05	***	-0.09	0.06	
Parity		0.05	0.01	***	0.53	0.02	***
No previous births (reference)							
Had a birth 0-23 months ago		0.67	0.03	***	0.27	0.04	***
Had a birth 24-47 months ago		0.31	0.03	***	-0.46	0.05	***
Had a birth 48 months ago or more		-0.27	0.04	***	-0.26	0.06	***

Data: IFSS (National Fertility Surveys of 1965 and 1970; National Surveys of Family Growth of 1973, 1976, 1982, 1988, 1995, and 2002), National Survey of Family Growth 2006-2010 and 2011-13 releases. Person-months after 1960, within 10 years of survey. Women with missing

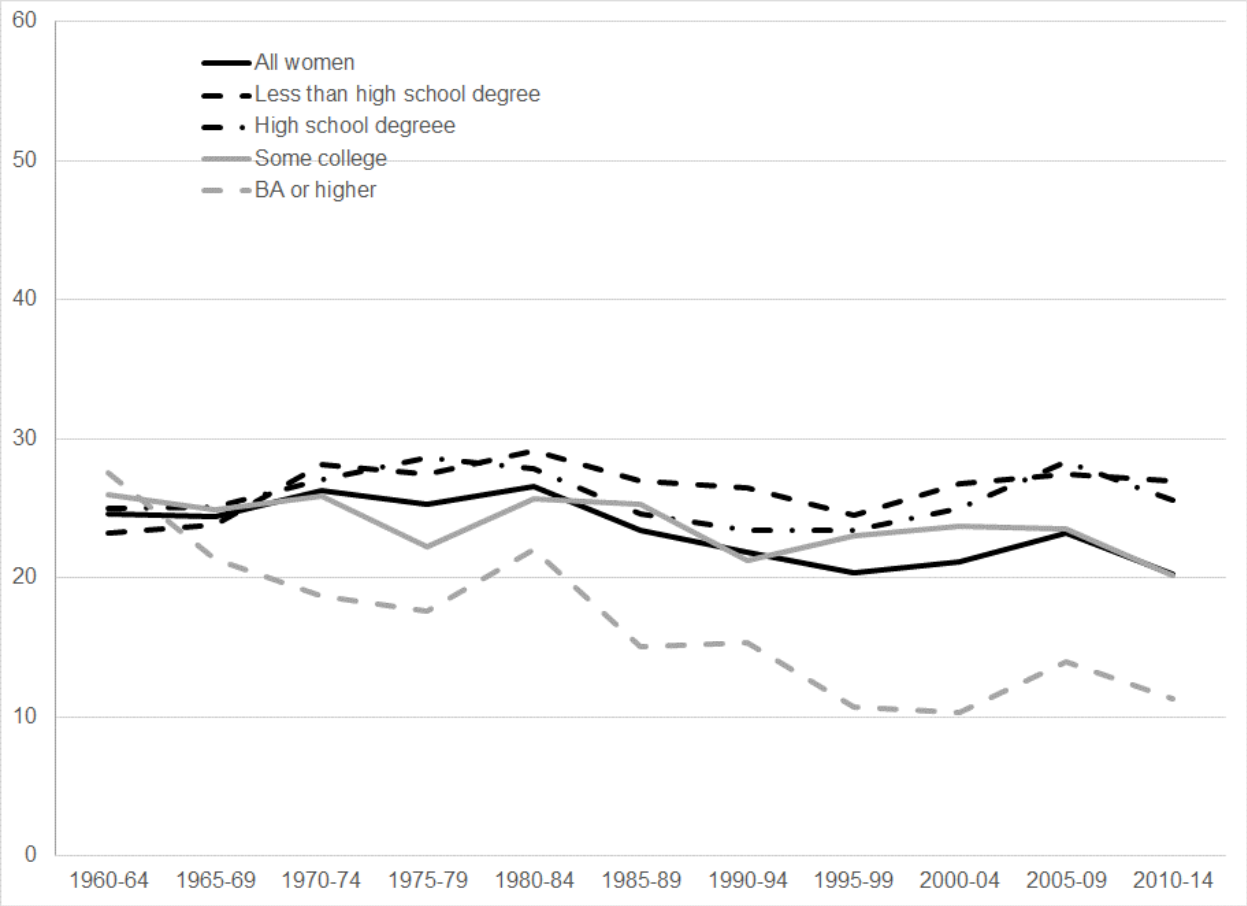
data excluded. N= 7,802,920 person-months from 82,189 women. Models incorporate weights and adjust standard errors for survey design. +: p<.10; *: p<.05; **: p<.01; ***: p<.001. n.s.: not significant.

Figure 1. Percent of births unwanted, by year and education level



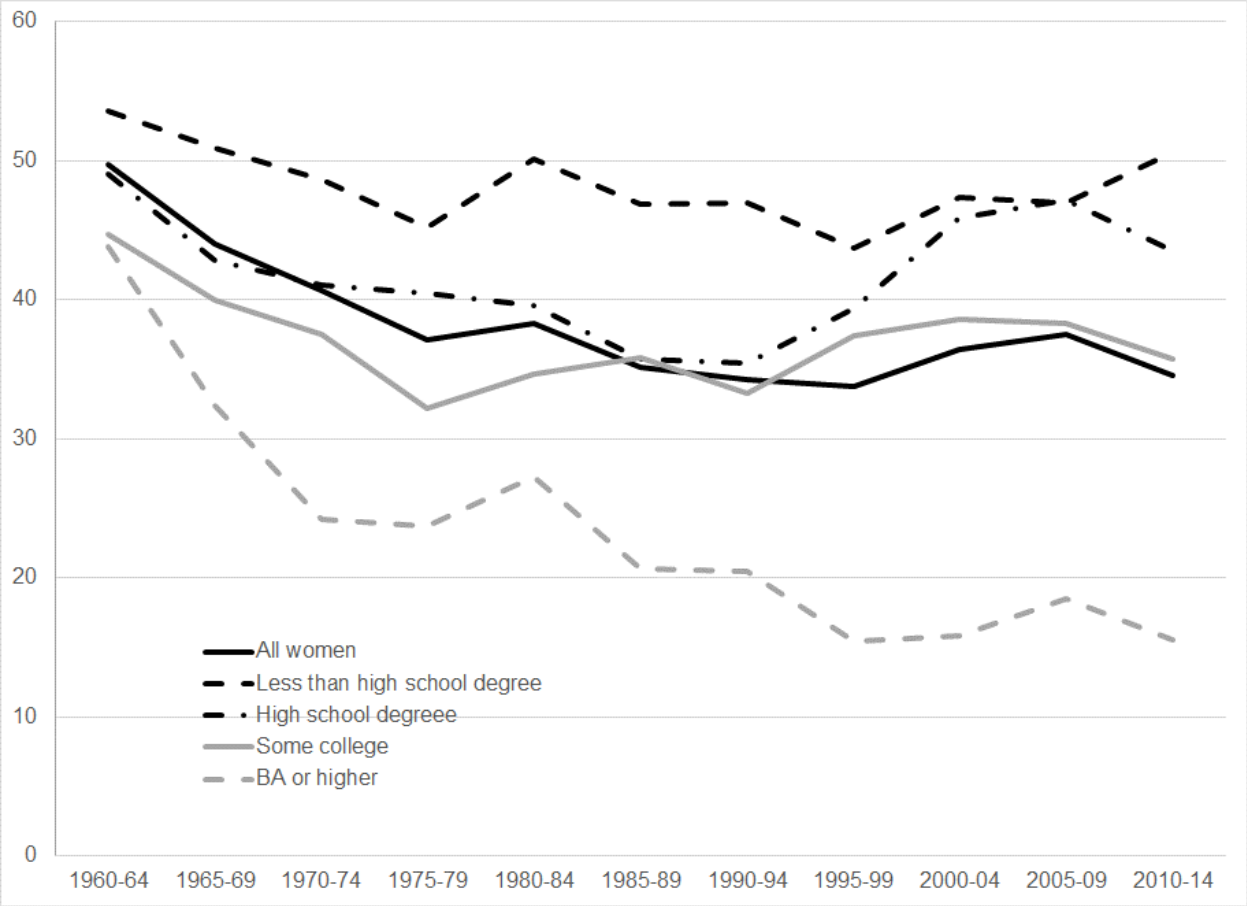
Data: IFSS (National Fertility Surveys of 1965 and 1970; National Surveys of Family Growth of 1973, 1976, 1982, 1988, 1995, and 2002), National Survey of Family Growth 2006-2010 and 2011-13 releases. Births after 1960, within 10 years of survey, with non-missing data. Percents weighted.

Figure 2. Percent of births mistimed, by year and education level



Data: IFSS (National Fertility Surveys of 1965 and 1970; National Surveys of Family Growth of 1973, 1976, 1982, 1988, 1995, and 2002), National Survey of Family Growth 2006-2010 and 2011-13 releases. Births after 1960, within 10 years of survey, with non-missing data. Percents weighted.

Figure 3. Percent of births unintended, by year and education level



Data: IFSS (National Fertility Surveys of 1965 and 1970; National Surveys of Family Growth of 1973, 1976, 1982, 1988, 1995, and 2002), National Survey of Family Growth 2006-2010 and 2011-13 releases. Births after 1960, within 10 years of survey, with non-missing data. Percents weighted.

Appendix Table A1. Question wording and response categories for retrospective measures of unintended fertility in IFSS surveys

Survey	Lead-in question	Wanted/unwanted	Mistimed
NFS: 1965	Was the only reason you did not use any method then because you wanted to have a baby as soon as possible? (yes/no); OR Under which of these circumstances did this pregnancy occur? (while using a method/did not want to become pregnant, not using a method/did not want to become pregnant, stopped using a method in order to have a child)	Before you became pregnant this time did you want to have a(nother) child sometime? (yes/no/DK)	Mistimed calculated by authors based on lead-in question and wantedness: mistimed if wanted another child and conceived under any circumstance except stopped method in order to conceive
NFS: 1970	Did that pregnancy occur because you deliberately stopped using a method in order to have a child or did it happen even though you did not want to get pregnant at that time? (stopped/not want); OR Was the only reason you did not use any method in that interval because you and your husband wanted a baby as soon as possible?" (yes/no)	(Just before you became pregnant) Did you yourself want a child but not until later, or did you really want no more children? (later/no more/didn't care)	Mistimed calculated by authors based on lead-in question and wantedness: mistimed if wanted another child and conceived under any circumstance except stopped method in order to conceive
NSFG: 1973	Was the reason you (were not/stopped) using any methods because you, yourself, wanted to become pregnant? (yes/no)	At the time you became pregnant, did you, yourself, actually want to have a(nother) baby at some time? (yes/don't know, didn't care/no)	Did you become pregnant sooner than you actually wanted, later than you actually wanted, or just about the right time? (sooner/later/right time)
NSFG: 1976	Was the reason you (were not/stopped) using any methods because you yourself wanted to become pregnant? (yes/no)	At the time you became pregnant with (B), did you yourself actually want to have a(nother) baby at some time? (yes/don't know/no)	Did you become pregnant sooner than you actually wanted, later than you actually wanted, or just about the right time? (sooner/later/right time)

Survey	Lead-in question	Wanted/unwanted	Mistimed
NSFG: 1982	Was the reason you (were not/stopped) using any method because you yourself wanted to become pregnant? (yes/no)	At the time you became pregnant with (B), did you yourself actually want to have a(nother) baby at some time? (yes/don't know/no)	Did you become pregnant sooner than you wanted, later than you wanted, or at about the right time? (sooner/later/right time/didn't care)
NSFG: 1988	Was the reason you (were not/stopped) using any method because you yourself wanted to become pregnant? (yes/no/don't know)	At the time you became pregnant with (B), did you yourself, actually want to have a(nother) baby at some time? (yes/don't know/no)	Did you become pregnant sooner than you wanted, later than you wanted, or at about the right time? (sooner/later/right time/didn't care)
NSFG: 1995	Was the reason you (had stopped/were not) using any methods because you yourself wanted to become pregnant? (yes/no)	At the time you became pregnant this time, did you yourself actually want to have a baby at some time? (yes/no/not sure, don't know)	So would you say you became pregnant too soon, at about the right time, or later than you wanted? (too soon/right time/later/didn't care)
NSFG: 2002	Was the reason you (stopped using/did not use) any methods because you yourself wanted to become pregnant? (yes/no)	Right before you became pregnant this time, did you yourself want to have a(nother) baby at any time in the future? (yes/no/not sure, don't know)	So would you say you became pregnant too soon, at about the right time, or later than you wanted? (too soon/right time/later/didn't care)
NSFG: 2006-2010	Was the reason you (had stopped using/did not use/were not using) any methods because you yourself wanted to become pregnant? (yes/no)	Right before you became pregnant (this time), did you yourself want to have a(nother) baby at any time in the future? (yes/no/not sure, don't know)	So would you say you became pregnant too soon, at about the right time, or later than you wanted? (too soon/right time/later/didn't care)
NSFG: 2011-13	Was the reason you (had stopped using/did not use/were not using) any methods because you yourself wanted to become pregnant? (yes/no)	Right before you became pregnant (this time), did you yourself want to have a(nother) baby at any time in the future? (yes/no/not sure, don't know)	So would you say you became pregnant too soon, at about the right time, or later than you wanted? (too soon/right time/later/didn't care)