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### Does it Matter if She'd Rather Marry? The Role of Individual Preferences in Young Women's Likelihood of a Nonmarital First Birth

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**Abstract**

Previous research shows that low-income single mothers interviewed after they have begun childbearing say they would prefer to marry but feel prevented from doing so by a lack of means. I prospectively test whether women who state a preference against nonmarital childbearing *before* having their first birth are more likely to have a marital first birth, or to postpone their first birth, either independently of or in conjunction with resources attained in adulthood. Resources are measured by postsecondary education, professional jobs, and dating partners with high educational attainment. I find that women's preferences against having a nonmarital birth increase the likelihood that they will postpone childbearing, independently of resource attainment. However, women's preferences against nonmarital childbearing increase their likelihood of having a marital first birth only in conjunction with higher levels of resources.

## Introduction

The majority of young people in the U.S. indicate that they hope to marry (Cherlin 2004). Widely-held norms favor marriage as the optimal context for raising children (Usdansky 2009). However, as of 2013, nonmarital births exceed 40% of all births in the U.S. (Martin et al 2015). Previous qualitative research has compellingly shown that low-income single mothers—interviewed *after* they begin their childbearing—feel that they would prefer to raise their children within marriage, but lack the financial stability that would qualify them for entry into marriage (Edin and Kefalas 2005). No research has investigated whether a woman’s preferences in favor of having a marital birth or against having a nonmarital birth, when stated before childbearing begins, predict whether she will achieve this goal. Substantial prior research has shown that women’s preferences and intentions about whether they want children, and the numbers of children they wish to have, are strong predictors of their eventual fertility outcomes (Schoen et al 1999; Hayford 2009). However, no previous study of intentions and their realization has considered intentions about fertility and marital status jointly.

In this study, I use nationally-representative data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to investigate how U.S. women’s ability to realize their own stated preferences against nonmarital childbearing is either enabled or constrained by their socioeconomic resources in adulthood, and by the resources of their prospective male partners. I use a discrete-time hazard model to follow women born between 1974 and 1983 through the ages of 24-34, in the years 2007-2009. I examine how individual women’s preferences about unmarried motherhood as stated *before* they begin their childbearing interact with their own subsequent educational attainment and work experience, as well as the educational attainment of

their early dating partners, to predict their likelihood of eventually having a marital first birth, having a nonmarital first birth, or postponing childbearing.

### **Structural Influences on Family Formation Inequality**

Since the latter part of the 20<sup>th</sup> century, patterns of family formation behavior have undergone major changes across the U.S. population. Less than 50% of women born between 1975 and 1979 ever married by age 25, down from 80% of those born in 1935 to 1939 (Kreider 2005; Kreider and Ellis 2011). At the same time, the birth rate for unmarried women has risen dramatically, up to 51.8 in 2008, from 29.4 in 1980 (Martin et al 2015), due in large part to a decrease in “shotgun marriages” entered after conception (Carlson, McLanahan and England 2004; Gibson-Davis 2011). Cohabitation has become increasingly widespread (Smock 2000), with counts of unmarried couples who share living quarters rising by more than two million between the 1990 and 2000 Decennial Censuses (Simmons and O’Connell 2003).

Although norms and behaviors surrounding sex, marriage and childbearing have changed for individuals in all walks of life, individuals’ likelihood of entry into marriage and of having a nonmarital birth are nonetheless differentiated by socioeconomic status. The increase in nonmarital childbearing over the last 30 years has been limited to women without a Bachelor’s degree (McLanahan 2004). Those with higher socioeconomic status are more likely to delay childbearing, to marry, and ultimately to give birth within marriage, whereas those with lower socioeconomic status are more likely to have children young and to forego marriage altogether (Carlson, VanOrman and Pilkauskas 2013; Manning 2001; NCHS 2010) or to marry after having children (Gibson-Davis, Edin and McLanahan 2005; Lichter, Sassler and Turner 2014). Existing

explanations for these socioeconomic differences in family profiles focus on the symbolic and practical importance of material resources for entry into marriage.

### Marriage Markets and Entry into Marriage

Increased numbers of women pursuing a college education since the mid-20<sup>th</sup> century have precipitated a trend toward educational assortative mating, in which college-educated individuals are more likely to marry, and to marry each other, than those without a college degree (Schwartz and Mare 2005). However, those with a Bachelor's degree still comprise only about 30% of those aged 25-34 in 2009 (Ryan and Siebens 2012). With the deindustrialization of the U.S. economy, achieving a Bachelor's degree is increasingly a prerequisite for gaining a well-paying job and attaining financial stability, for men and women alike. Those without a Bachelor's degree are more likely to have less-stable, lower paying jobs in the growing service sector (Kalleberg 2011). Because they meet prospective partners at colleges and universities, in professional workplaces, and through similarly-educated friends (McClendon, Kuo and Raley 2014), women with Bachelor's degrees have greater access than their less-educated peers not only to higher earnings of their own, but also to a pool of similarly-educated male prospective marriage partners. Despite dramatic increases in women's labor force participation over the last thirty years (Goldin 1990), evidence from nationally-representative studies indicates that men's earnings and labor market prospects at all income levels more strongly predict a couple's entry into marriage than their female partners' (Harknett and Kuperberg 2011; Sweeney 2002). Thus, whereas couples who are matched on their high levels of education and income can relatively easily achieve markers of material success that normatively qualify them to marry, even with

pooled resources, low-income couples may not be able to reach the standard of financial stability they view as necessary for marriage.

### Timing of Childbearing

Women with lower versus higher socioeconomic status experience different incentives and opportunity costs to the timing of their fertility, such that women with low socioeconomic status are more likely to have first births at younger ages and outside of marriage. Nonmarital births comprise more than 60% of births to women aged 20-24, and more than 80% of births to women aged 19 and under (Shattuck and Kreider 2013). For women who spend their young adulthood completing college and establishing careers, an early birth would interfere with schooling and the development of workplace seniority and earning power (Budig and England 2001). For young women without access to post-secondary education or appealing job opportunities, giving birth when one is young and energetic is a practical decision (Edin and Kefalas 2005).

Although some early childbearing is planned, much of it is comprised by unplanned and unintended births (Guzzo and Hayford 2011). Younger, and unmarried women are more likely to describe their pregnancies as unintended (Shreffler et al 2015). Women with low incomes and low educational attainment are more likely to experience unplanned births (Finer and Zolna 2011; Williams, Abma and Piccinino 1999) Individuals with lower incomes may have limited access to reproductive healthcare, to effective contraception, and to abortion services relative to their higher-income peers (Musick 2002; Singh, Darroch and Frost 2001). Norms in low-income communities may also favor non-use of contraception, leading to semi-planned births to couples who are not directly intending pregnancy (Edin et al 2007; Edin and Nelson 2013).

## **Individual Preferences and Family Formation Behavior**

To date, explanations for socioeconomic differences in the likelihood of nonmarital childbearing have focused on the economic mechanisms pushing higher-SES women toward later, planned marital births and lower-SES women toward earlier, largely unplanned nonmarital births. Separately, previous studies have shown strong predictive relationships between individual women's fertility intentions and their eventual outcomes (Schoen et al 1997; Schoen et al 1999; Hayford 2009), and between couples' intent to marry and their entry into marriage (Waller and McLanahan 2005; Guzzo 2009).

The processes by which women's preferences about marital and nonmarital childbearing are formed overlap extensively with the sequences of events that may determine whether or not their preferences are more or less likely to be realized. Women's preferences are influenced by norms and opportunities related to their socioeconomic status, both in their families of origin and in adulthood (Morgan 2001; Bachrach and Morgan 2013). Once preferences are formed, women may express their preferences against nonmarital childbearing in part through pursuit of college and careers. At the same time, achieving these goals may materially help women avoid nonmarital pregnancy. Women's behaviors with respect to family formation, college and careers may also be affected by their own abilities and personal motivations. Thus, it may be impossible to completely disentangle a causal relationship between women's preferences, their access to resources, and their eventual family formation outcomes. Rather, these processes may operate through multiple possible pathways.

## Factors Influencing Preference Formation

Norms about family formation behavior influence women's family formation intentions, particularly at young ages. When young women are asked in their teens about their fertility targets, their stated intentions hew closely to the norm of two children (Hayford 2009). I expect that when asked at a young age about their preferences about nonmarital childbearing, most women will state as their preference the norm of wanting to have children within marriage (Usdansky 2009). However, the more-specific family formation norms and behaviors to which women are exposed within their communities and families are likely to vary by their socioeconomic status. Individuals from disadvantaged communities are more likely to express acceptance of early and nonmarital childbearing (Trent and Crowder 1997; Browning and Burrington 2006). Thus, I expect that young women from non-intact families and disadvantaged socioeconomic backgrounds may be more likely to consider a nonmarital birth as an acceptable option for their own family formation.

To the extent that childbearing and the pursuit of postsecondary education and careers present competing options for a young woman (Schoen et al 1997; Presser 2001), the opportunities for schooling and work that she wishes to pursue, or that are available to her, may also affect the formation of her family formation preferences. The financial payoff of postsecondary education raises the opportunity cost of childbearing to college-educated women (Easterlin and Crimmins 1985; Budig and England 2001). However, women with lower socioeconomic status in their families of origin are less likely to attend schools that help them reach college (Lee and Bryk 1988; Manlove 1998). I expect that women with low socioeconomic status in their family of origin may be more receptive to the possibility of early childbearing, and thus may be less likely to express a preference against nonmarital childbearing.

Women's family formation preferences may also change over the life course, in response to their own experiences in the domains of family, education, and work. Some women who state low fertility intentions at a young age, and do not subsequently marry, reduce these intentions to zero at older ages (Hayford 2009). Others revise their intentions after having children. Plausibly, women's preferences about nonmarital childbearing may change with their changed understanding of their own career and partnership prospects. For example, young women who state a preference against nonmarital childbearing in adolescence and go on to have only low educational attainment may develop a tolerance for nonmarital childbearing as their own and their partners' earnings fall short of the level they consider a requirement for marriage. A limitation of my study is that I am unable to directly measure changes to women's preferences about nonmarital childbearing. However, changes to preferences may be revealed to some extent through women's behavior. I expect that women who have stated a preference against nonmarital childbearing, who go on to have low educational attainment themselves, and who do not date men with any college education will be more likely to have nonmarital births than women with the same preferences but greater access to material resources in adulthood.

#### Factors Influencing Preference Realization

A proximal factor affecting whether or not women who prefer to avoid a nonmarital birth will be able to do so is their exposure to the risk of pregnancy, through the timing of their initiation of sexual intercourse, and their use or non-use of contraception (Bongaarts 1978). Women who initiate intercourse at younger ages (i.e. 13 or younger) experience longer exposure to the risk of unplanned pregnancy, and are more likely to experience coerced sex, which further increases this risk (Abma, Driscoll and Moore 1998). Women exposed to intercourse in

cohabiting relationships are also at greater risk for unplanned pregnancy (Finer and Zolna 2011). However, consistent use of contraception offsets the risk of pregnancy (Finer and Zolna 2014; Manlove, Ryan and Franzetta 2003). I expect that women who express a preference to avoid nonmarital childbearing will be more likely to delay sexual initiation, and to report using contraception while they are unmarried. I expect that delaying sex and contraceptive use, in turn, will be associated with decreased likelihood of a nonmarital first birth.

Women's educational credentials and the extent to which their jobs are financially and personally rewarding may also affect their ability to achieve their preferred family formation outcomes. The resources and benefits that accrue to women with high educational attainment and well-paying jobs may in themselves help them to avoid early and nonmarital childbearing by facilitating access to reproductive health care and effective contraception (Singh, Darroch and Frost 2001), and introducing them to similarly well-educated and well-remunerated marriage partners (Schwartz and Mare 2005; McClendon, Kuo and Raley 2014). The desire to achieve a particular educational or career goal may also incentivize women to avoid having children, because to do so would interfere with their ability to meet this goal (Jumping-Eagle et al 2008). In addition, cultural schemas that posit highly-educated women's careers as sources of identity and social capital that serve as alternatives to having children (Friedman, Hechter and Kanazawa 1994; Schoen et al 1997) may also lead women with Bachelor's degrees to postpone childbearing. Thus, I expect that women who complete Bachelor's degrees and gain employment in professional jobs will be less likely to have nonmarital births.

Realizing the preference to have only marital births and/or to postpone childbearing until after marriage may also require the cooperation of one or more male partners. Marrying requires a sustained relationship with someone who both wishes to commit to partnership, and feels

normatively “ready” for marriage (Cherlin 2004; Edin and Kefalas 2005). Among women who are sexually active, postponing a first birth may require a male partner to use contraception, facilitated by his shared desire to avoid conception. In the event of unplanned pregnancy, women’s ability to have a marital first birth may require a partner who both has enough economic resources to normatively allow for marriage, and who prefers to have children within marriage. Thus, I expect that women who date men with Bachelor’s degrees and/or some college education will be less likely to have nonmarital first births.

High- and low-SES individuals alike aspire to marriage and prefer marital childbearing (Cherlin 2004; Edin and Kefalas 2005; Edin and Nelson 2013), but nonetheless those with high SES are much more likely to achieve this goal (McLanahan 2004). This suggests that greater access to educational and material resources may boost the ability of higher-SES individuals’ who wish to avoid nonmarital childbearing to realize this preference, by enhancing their ability to enter into marriage and to delay childbearing. I expect that women who stated a preference against nonmarital birth in adolescence, and who go on to achieve high educational attainment and to date men with postsecondary education will be more likely either to have a marital birth or to postpone childbearing versus having a nonmarital birth. I expect that women who stated a preference against nonmarital birth in adolescence, and who do not go on either to gain high educational attainment themselves, or to date men with postsecondary education will be more likely to have a nonmarital birth.

As a mediator between women’s preference about nonmarital childbearing and the steps they take in pursuit of realizing these preferences, women’s own individual-level self-efficacy may help women avoid nonmarital childbearing and to pursue college and career goals. Women with a strong sense of self-determination (Mirowsky and Ross 2007) may feel empowered to

avoid unplanned pregnancy by using contraception and/or resisting sexual coercion (Cheng et al 2014; Upadhyay et al 2014), and may exert planning and effort in pursuit of education and careers (Mirowsky and Ross 2007) as an alternative to early childbearing. Also affecting whether women's family formation preferences are realized are their perceptions at relatively young ages of whether they will be able to achieve a desired career if they put off having a baby (Geronimus and Korenman 1993), or whether they will be able to find a husband with their preferred characteristics, and so may wait to begin childbearing (Edin and Kefalas 2005). Thus, I expect that women who perceive a higher likelihood that they will attend college and a higher likelihood of marrying will be less likely to have a nonmarital birth. However, young women may underestimate the extent to which childbearing would interfere with schooling (Jumping-Eagle et al 2008), and may overestimate both the extent of their pool of prospective marital partners, and their own attractiveness as a marital candidate (Gassanov, Nicholson and Koch-Turner 2008). In this scenario, young women's perceptions of their educational and marital prospects would not predict their likelihood of a nonmarital first birth.

A final individual-level factor that likely affects the realization of women's family formation preferences—and that I am unable to address in this study—is the strength and certainty of these preferences (Morgan 2001). Women who express greater certainty in their wish to avoid an unplanned pregnancy are more likely to do so (Williams, Abma, and Piccinino 1999), and women who say they are very sure they want to have a birth are more likely to have a birth shortly thereafter (Schoen et al 1999). By extension, women who strongly wish to avoid a nonmarital birth may plausibly be more likely to take strong measures to avoid and/or terminate unplanned pregnancies. My inability to measure the strength of women's preferences constitutes a limitation of my study. I am also unable to measure women's preferences for or against the

competing options of college and careers (Barber 2001a). I also cannot measure directly the norms about family formation to which women are exposed (Bachrach and Morgan 2013), changes to women's preferences about nonmarital childbearing (Hayford 2009), women's perceptions of their own ability to consistently and effectively use contraception (Cheng et al 2014; Upadhyay et al 2014)<sup>1</sup>, and any societal schemas about combining work and family that may influence the formation of women's preferences and the steps they take in pursuit of those preferences (Friedman et al 1994; Schoen et al 1997; Blair-Loy 2004). These represent limitations to my study.

## **Data and Methods**

I use the restricted file of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a nationally representative survey comprised of people who were in grades 7-12 in the 1994-5 school year, and who were interviewed subsequently in 1996, 2001-2, and 2007-9 (Harris 2009). It oversamples for students who are African-American, Chinese, Cuban and Puerto Rican, as well as for students with disabilities, and siblings. The survey asks questions about respondents' family of origin, socioeconomic, health, friendship and relationship characteristics and labor market and family formation experiences. Add Health is particularly well suited to my purposes because it allows for longitudinal comparison of respondents' preferences for or against nonmarital childbearing, as stated in adolescence, with their own subsequent family formation outcomes in young adulthood. It is the only survey I know of that

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<sup>1</sup> At Wave 1, Add Health asks questions measuring respondents' contraceptive self-efficacy, but asks these questions only of respondents aged 15 and up. Because I wish to retain younger respondents in my sample, I opt not to use this measures.

directly asks respondents whether they would or would not consider having children while unmarried.

I limit my sample to include only female respondents from the Add Health school sample who did not have a birth that occurred prior to Wave 1 (when respondents were aged 11-21), and who stayed in the study until at least Wave 3. I include respondents reporting a single race who are non-Hispanic White, non-Hispanic Black and non-Hispanic Asian/Pacific Islander, as well as Hispanic respondents of any race or combination of races. I weight all my estimates with the Add Health post-stratified grand sample untrimmed cross-sectional weight for the Wave (either 3 or 4) at which each respondent was last observed.

My focal independent variable is respondents' answer to the question asked at Wave 1 "Would you consider having a child as an unmarried person?" with possible answers "yes" and "no." I code this variable with the emphasis on the "no" answer, and treat it as indicating that the respondent has either stated a preference against having a nonmarital birth, or has stated no such preference. That is, a woman saying she would consider having a nonmarital birth does not necessarily indicate a preference for a nonmarital birth, but merely a willingness to consider it. On the other hand, a woman saying she would not even consider having a nonmarital birth indicates a clear preference against nonmarital childbearing. A limitation of this measure is that because it allows for a "yes" or "no" answer only, measuring the strength of women's preferences is impossible. Another limitation is that this question does not ask directly whether respondents wish to marry, or to have children. Thus, some women who express a desire to avoid nonmarital childbearing may wish not to have children. Some women who express a willingness to consider nonmarital childbearing may not wish to marry.

In my main analysis, I use a discrete-time competing-risk hazard model (Hosmer, Lemeshow and May 2008) to measure women's monthly risk of a marital first birth, a nonmarital first birth, or no first birth, as measured at Waves 2-4. Respondents exit the analytic sample either through attrition or through a birth.

Time-constant independent variables measured at Wave 1 are as follows. I include measures of the respondent's race/ethnicity, her mother's educational attainment,<sup>2</sup> and whether her family was intact at the time of the Wave 1 interview. I include a measure of the respondent's sexual and contraceptive history at Wave 1, defined as whether she reported that she had never had intercourse, had used contraception at last intercourse, or had not used contraception at last intercourse. I include a scale measure of the respondent's own perceived likelihood of marrying by age 25, as a measure of the respondent's perception of her own marital prospects in adolescence, and as a control for the implied question about whether the respondent wants to marry (Morgan 2001). This measure ranges from 1 to 5, and I code 5 as indicating the greatest certainty. However, no Wave 1 questions directly ask respondents whether they want or expect to have children. I include a scale measure of the respondent's own perceived likelihood of attending college, again coded from 1 to 5 with 5 representing the highest certainty. A weakness of this measure, however, is that it does not distinguish between two-year versus four-year colleges. I also include an index of the respondent's answers to questions about her own self-perceived planfulness and the rewards she expects to her own work, as a measure of perceived self-efficacy. Possible scores on this variable range from 4 to 20.

Time-varying independent variables measured at Waves 2-4 are as follows. I include a measure of whether the respondent initiated intercourse at age 13 or younger. I include measures

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<sup>2</sup> "Mothers" include biological, adoptive, step and foster mothers. The vast majority are biological mothers.

of respondents' educational attainment in a given month.<sup>3</sup> I also include measures of whether the respondent reports ever having had a part-time non-professional job, a fulltime non-professional job, a part-time professional job, or a fulltime professional job.<sup>4</sup> I define "fulltime" as 35 hours per week or more.<sup>5</sup> I divide "professional" versus "non-professional" jobs according to the 2000 Bureau of Labor Statistics Standard Occupational Classification (SOC) system (U.S. Bureau of Labor Statistics 2000). I include a measure of whether the respondent ever cohabited. I also include a Wave 3 measure indicating whether the respondent ever dated a man with some college, or a Bachelor's degree or more. Finally, I include time-varying controls for respondent age (coded as age in the person-month, minus 10), age-squared (age in the person-month squared), and period (respondent's birth year plus her age in the person-month).

Because exposure to the risk of pregnancy is a chief proximal determining factors of whether a woman will have any birth, I conduct a second analysis to establish a relationship between women's stated preferences against nonmarital childbearing and their sexual and contraceptive histories later in the exposure period under study. I limit these samples to women from the above analysis who had not had a birth by Wave 2, or by Wave 3, respectively. The outcome variable is operationalized as whether the respondent reported having never had vaginal intercourse, having used contraception at last intercourse, or having not used contraception at last intercourse. I use multinomial logistic regression to measure this outcome separately at Wave 2

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<sup>3</sup> Both Waves 3 and 4 allow respondents to list the specific year and month when they acquired an Associate's degree and a Bachelor's degree. Wave 3 asks for this same information about high school/GED graduation, but Wave 4 does not. For respondents who first say they graduated from high school or have a GED at Wave 4, I impute the date for this graduations as the previous June (the month most common for high school graduations reported at Wave 3.)

<sup>4</sup> Add Health allows respondents to list two jobs at Wave 3 and two jobs at Wave 4. These are the respondent's first any job at Wave 3, first fulltime job at Wave 4, and current or most recent job at both waves.

<sup>5</sup> Although other measures ask for the starting year and month of the relevant job, the Wave 4 question about the respondent's first fulltime job asks for the age at which she began that job. For the start date on this measure, I impute the January of the year in which she turned that age.

(when respondents were aged 12-22) and Wave 3 (when respondents were aged 18-28).

Independent variables include preferences about nonmarital childbearing, mothers' educational attainment, family intactness, and race/ethnicity, as well as measures of the respondents' age at Wave 2 or 3, and whether she had ever married by Wave 2 or 3, respectively. In the model examining women's sexual and contraceptive status at Wave 3, I include a measure of the respondent's educational attainment at Wave 3.

## Results

[TABLE 1 ABOUT HERE]

Table 1 shows descriptive measures of women's family formation outcomes, family of origin characteristics, and measures of self-assessed future prospects, broken down by whether or not they stated that they would consider a nonmarital birth. Slightly more than three-quarters of respondents state a preference against having a nonmarital birth, while slightly less than one quarter indicate that they would consider having a nonmarital birth. Out of all women in the cohort, by ages 24-34 about half had not had a first birth. About 28% had had a nonmarital first birth and about 21% had had a marital first birth. Among those who said in adolescence that they would consider having a nonmarital birth, 38.9% had done so. However, among those who said they would prefer not to have a nonmarital birth, approximately one quarter had also had a nonmarital birth. Comparing the characteristics of women by family formation preferences shows that, consistent with my expectation, women who say they would consider a nonmarital birth come from somewhat more-disadvantaged backgrounds overall than those who would not

consider a nonmarital birth. Women who say they would consider a nonmarital birth have a somewhat higher percentage of mothers with less than a high school education (17.5% versus 14.6%), and a somewhat lower percentage of mothers with a Bachelor's degree or more (20.2% versus 23.9%). By roughly 7 percentage points, they are less likely to be White (64% versus 71.4%) and more likely to be Black (20.5% versus 12.8%), and by smaller magnitudes are less likely to be Asian and more likely to be Hispanic. Women who would consider a nonmarital birth are less likely to have an intact family at Wave 1 (60.1% versus 71.2%). In addition, women who said they would consider a nonmarital birth are nearly twice as likely to have begun sexual intercourse at or before age 13, relative to women who said they would not consider a nonmarital birth (14.1% versus 7.7%). Women who said they would consider a nonmarital birth were less likely to have never had intercourse at their Wave 1 interview (49.1% versus 72.5%). Although a lower percentage of women who stated a preference against nonmarital childbearing had had intercourse, roughly 70% of sexually active women who said they would not consider a nonmarital birth used contraception at last intercourse, as compared with roughly 60% of sexually active women who would consider a nonmarital birth. However, those who would and would not consider a nonmarital birth do not show differences of appreciable magnitude in their perceived likelihood of being married by age 25, of going to college, or of their own self-efficacy.

[TABLE 2 ABOUT HERE]

Table 2 shows women's educational and work histories, and the educational attainment of their early dating partners, according to their person-months of exposure before they drop out

of the exposed sample, broken down by women's preferences. Person-months of exposure of women who would and would not consider a nonmarital birth show relatively minor differences on these adult socioeconomic attainment variables. Women who would consider a nonmarital birth spent slightly higher percentages of person-months in the sample with a high school diploma or GED (49.6% versus 45.9%), but only small differences appear in person-months spent with an Associate's degree (5.7% versus 5.1%) or a Bachelor's degree (15.2% versus 16.8%). Women who would not consider a nonmarital birth on average spent slightly more person-months having had a part-time non-professional job (60.7% versus 58.9%), fulltime non-professional job (41.5% versus 37%), or fulltime professional job (24.5% versus 22.8%). Differences between women who would and would not consider a nonmarital birth on whether they ever had a part-time professional job, ever cohabited, or ever dated a man with some college or a Bachelor's degree are all less than one percentage point. Percentages of person-months spent in the sample among women who have had any of these experiences, furthermore, are all less than 12%. Difference in mean age is also less than one percentage point.

[TABLE 3 ABOUT HERE]

Table 3 shows the results of a multinomial logistic regression model of the competing hazard of having a marital birth versus having a nonmarital birth, or having no birth versus having a nonmarital birth. Five models successively introduce variables for 1.) preferences and family of origin, 2.) resources in adulthood, 3.) self-assessed self-efficacy and future prospects in adolescence, 4.) relationship history and partner educational attainment in adulthood, and 5.) interactions of women's preferences with the adult resources, cohabitation, and partner resource

variables. In Table 3 overall, results are reported in coefficients. For ease of interpretation of the focal preferences variable, I also report the effects of this variable in odds ratios. In the first four models, stated preference against having a nonmarital birth is associated with greater likelihood of having either a marital first birth or postponing childbearing versus having a nonmarital first birth. The magnitude of the association changes very little with the introduction of the resources, self-efficacy and relationship variables, and ranges from odds ratios of 1.55 to 1.58 in the association with having a marital first birth, and odds ratios of 1.35 to 1.40 in the association with postponing childbearing.

Table 3 also shows that women with more-advantaged race/ethnic and family of origin characteristics are less likely to have nonmarital births and more likely to postpone childbearing (McLanahan 2004). Women whose mothers have some college or a Bachelor's degree or more were more likely to postpone their first birth. Women with intact families at Wave 1 were consistently more likely either to have a marital first birth or to postpone their first birth. Relative to non-Hispanic White women, non-Hispanic Black women were more likely to have a nonmarital first birth than to have a marital first birth or to postpone their first birth. Hispanic women were more likely to have a nonmarital first birth than to have a marital first birth. Women who perceived a higher likelihood of marrying by age 25 were more likely to have a marital versus nonmarital first birth, but also were more likely to have a nonmarital birth than to postpone childbearing. Relative to women who did not use contraception at the last intercourse they reported at Wave 1, women who had never had intercourse at Wave 1 were more likely to have a marital birth or to postpone childbearing. Women who used contraception at their last reported intercourse were more likely to postpone childbearing. Women who began having

intercourse at age 13 or younger were more likely to have a nonmarital first birth versus having a marital first birth or postponing their first birth.

Model 2 introduces variables representing women's socioeconomic attainment in adulthood. It shows that women with high socioeconomic status in adulthood are less likely to have nonmarital first births. Compared to women who did not graduate from high school, women with high school diplomas/GEDs, Associate's degrees, and Bachelor's degrees were consistently more likely to have a marital first birth versus a nonmarital first birth, or to postpone childbearing. Women who had a part-time professional job were more likely to postpone childbearing versus having nonmarital birth. Women who had a fulltime professional job were more likely to have a marital birth versus having a nonmarital birth, although these results are significant only at the .10 level. Women who had a fulltime non-professional job were less likely to postpone childbearing than to have a nonmarital birth. Model 3 shows little role for women's perceptions of their own self-efficacy and of their likelihood of attending college in mediating the relationship between their preferences and their family formation outcomes. Model 4 adds measures of women's romantic relationship experience and the educational attainment of their early male dating partners. Having ever cohabited is associated with a decreased likelihood of postponing childbearing relative to having a nonmarital first birth. Women who ever dated a man with a bachelor's degree were more likely either to have a marital first birth or to postpone childbearing versus having a nonmarital first birth. Women who ever dated a man with some college were more likely to postpone childbearing, although these results are significant only at the .10 level.

Model 5 adds interactions between women's stated preferences and their adult resources, cohabitation experience, and partners' educational attainment. I conduct a likelihood ratio test

for the difference in goodness of fit between Model 4 and Model 5 (Long 1997). This test shows a better fit for Model 5 (LR  $\chi^2= 54,370$ , DF= 10,  $p<.001$ ), implying that accounting for the interactions between a woman's preferences, resources and relationship experiences better explains her likelihood of nonmarital childbearing than considering these factors in isolation. Model 5 shows that for women in the reference category (who are White, come from a non-intact family, have mothers with less than a high school education, and themselves have less than a high school education),<sup>6</sup> individual preferences about unmarried motherhood play a direct role in predicting the likelihood of postponing childbearing, but not in predicting the likelihood of having a marital first birth. For the likelihood of postponing childbearing versus having a nonmarital first birth, the magnitude of the odds ratio indicating the effects of women's preferences against nonmarital childbearing is increased from 1.34 in Model 4 to 1.70 in Model 5, and remains highly statistically significant. That is, women's individual-level preferences are associated with avoiding a nonmarital first birth through postponing childbearing. The interaction effect between women's preferences against nonmarital childbearing and having ever dated a man with some college is also positive and statistically significant, indicating again that women who themselves have low educational attainment (the reference category) are more likely to postpone childbearing if their pool of dating partners includes men who are pursuing college education.

However, the previous positive effect of a woman's preference against nonmarital childbearing for her likelihood of having a marital versus a nonmarital first birth disappears in

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<sup>6</sup> Changing the reference category on all these dimensions leads to different results only when women in the reference category have an associate's degree or a bachelor's degree, in which case the coefficient for preferences is non-significant on both outcomes. This indicates that for women who have higher educational attainment, the role of preferences depends on that of education for their likelihood of achieving either alternative to nonmarital childbearing. (Results not shown.)

Model 5. This leaves interactions with the resource variables as the mechanism through which a preference against nonmarital childbearing is realized. The marital birth coefficient for the interaction between women's preferences and having ever dated a man with some college is positive and statistically significant, indicating that in the (likely somewhat unusual) event that a women who prefers not to have a nonmarital birth and who herself has low educational attainment dates a man who is pursuing college education, she is more likely to have a marital birth than a nonmarital birth.

[FIGURE 1 ABOUT HERE]

Figure 1 visualizes the association between women's stated preferences about unmarried motherhood, their educational attainment and their predicted probability of having a nonmarital first birth, a marital first birth, or postponing childbearing. These probabilities are generated from Model 5 in Table 3. They indicate that the impact of a woman's preference against having a nonmarital birth is greater at lower levels of educational attainment. The difference between the monthly probabilities of having any birth or of having a nonmarital birth based on preferences about nonmarital childbearing is largest among women with less than a high school education, followed by women with a high school diploma or GED. For women with an Associate's degree or Bachelor's degree, differences in the predicted probability of a nonmarital birth according to expressed preferences about nonmarital childbearing are much smaller.

[TABLE 4 ABOUT HERE]

I next investigate how sexual and contraceptive behavior among women who stated a preference against nonmarital childbearing may help them to postpone their first birth. I examine how stated preference predicts initiation of intercourse and contraceptive use for women who have not yet had any births. Table 4 shows the results of a multinomial logistic regression model of sexual and contraceptive history among women with no births at Wave 2, and at Wave 3, respectively. The outcome variable measures whether at their last interview, women had never had intercourse, had used contraception at last intercourse, or has not used contraception at last intercourse. The focal independent variable is again women's preferences about nonmarital childbearing. I include controls for women's Wave 1 sociodemographic characteristics and whether women had ever married by the relevant interview. Results indicate that avoiding exposure to the risk of pregnancy—either by delaying sexual debut or by using contraception—is one mechanism by which women with a preference against nonmarital childbearing are able to avoid pregnancy. When they are aged 12-22, having stated a preference against nonmarital childbearing is associated with a greater likelihood of having never had sex, and of using contraception at last intercourse. At ages 18-28, the association between stating a preference against a nonmarital birth and never having had intercourse at the Wave 3 interview persists. However, there is no longer any association between these preferences and having used contraception at last intercourse. This may be due in part to unmeasured changes in women's preferences about nonmarital childbearing. At both interview times, women from relatively advantaged race/ethnic and family backgrounds were overall more likely to have delayed sexual debut and to have used contraception. Older women and those who had ever married (and thus may have been intending pregnancy) were more likely to have unprotected sex at last intercourse than to have never had sex. At Wave 3, women with some college and Bachelor's degrees were

more likely both to have postponed sexual debut and to have used contraception at last intercourse.

## **Discussion and Conclusions**

This paper is the first to prospectively investigate the role of individual women's preferences about unmarried motherhood, as stated before childbearing, in determining whether they will subsequently have a marital first birth, have a nonmarital first birth, or postpone childbearing. I contribute to research that seeks to explain the greater likelihood of women with low socioeconomic status to have births outside of marriage (McLanahan 2004). Previous studies on socioeconomic differentials in U.S. family formation have focused on the role of greater educational attainment and higher earnings in increasing individuals' and couples' likelihood of entry into marriage (Schwartz and Mare 2005; Schneider 2011) without considering the role of individuals' preferences for or against nonmarital childbearing. Edin and Kefalas (2005) have shown that single mothers interviewed *after* they had already had nonmarital births feel they would prefer to raise their children within marriage but that they are prevented from doing so by a lack of material means. Research on the relationship between individual-level family formation intentions has separately shown that intentions to marry predict entry into marriage (Guzzo 2009) and that intentions for childbearing influence the realization of fertility targets (Schoen et al 1999; Hayford 2009). However, no prior studies have prospectively investigated the role of individual women's preferences in shaping aggregate socioeconomic differences in the likelihood of nonmarital childbearing.

I find that women who express a preference against nonmarital childbearing *are* more likely to avoid having a nonmarital first birth than women who say they would consider having children while unmarried. Women's stated preference against unmarried motherhood independently predicts a greater likelihood that they will avoid a nonmarital first birth specifically *by postponing childbearing*. The importance of preferences against unmarried motherhood for increasing the likelihood that women will postpone childbearing versus having a nonmarital birth is greatest among women with less than a Bachelor's degree. For women with relatively high educational attainment, some combination of easy access to contraception (Singh, Darroch and Frost 2001), ease in pursuing college and careers (Manlove 1988), a relatively large pool of high-earning dating partners (McClendon, Kuo and Raley 2014), and a normative consensus to defer childbearing (McLanahan 2004) may all function to push women toward postponed childbearing, relatively independent of their preferences. Conversely, for women who do not have such easy access to these same resources, and who may face pressure from friends and family to engage in early childbearing, the individual-level motivation to avoid unmarried motherhood may be more critical to helping them defer first births.

However, only those women who have access to higher levels of resources in adulthood are more likely to avoid nonmarital childbearing by having a *marital first birth*. This finding is consistent with Edin and Kefalas's (2005) qualitative interviews, in which low-income single mothers indicate that they would prefer to have children within marriage but feel prevented from marrying by a lack of resources. It is also consistent with quantitative research that shows that accumulation of material resources functions as a threshold for entry into marriage (Schneider 2011). In addition to women's own educational attainment, dating men with Bachelor's degrees or some college education facilitates women's realization of their family formation preferences.

This is consistent with previous research that shows that men's earnings are the major determinant of couples' entry into marriage (Sweeney 2002). For women who stated a preference against nonmarital childbearing and did not go on to date men with college education, their greater likelihood of having a nonmarital birth may also reflect a revision of their preferences in response to what they may perceive as a limited pool of normatively "marriageable" partners (Hayford 2009; Guzzo and Hayford 2014).

I find that taking steps to minimize the risk of pregnancy—either by postponing sexual debut or by using contraception—is a mechanism by which women who prefer to avoid nonmarital childbearing avoid this outcome. When interviewed roughly a year after stating their preferences, women who said they would not consider a nonmarital birth were more likely both to have never had intercourse, and, if sexually active, to have used contraception at last intercourse. When interviewed roughly seven years after stating their preference, women who preferred to avoid nonmarital motherhood were more likely to have still postponed their sexual debut. However, the association with contraceptive use had disappeared. This finding may reflect the fact that more women were married at this later interview. It may also reflect changed preferences, and an increased openness to unmarried motherhood (Guzzo and Hayford 2014; Hayford 2009).

In sum, this study has demonstrated that individual women's expressed preferences about the marital or nonmarital context of their childbearing matter for determining whether or not they will have a nonmarital first birth. Even as the goal of a marital first birth or postponed fertility is facilitated by a woman's educational and professional attainment, and by highly-educated male partners, the desire to avoid nonmarital childbearing appears to cause women—especially women with low socioeconomic status—to postpone their first birth. It is also noteworthy,

however, that a woman's preference against a nonmarital birth makes it no more likely that she will have a marital first birth, independently of her realized socioeconomic attainment.

This study has several limitations. Chief among these limitations is the fact that I am unable to directly measure the full range of factors that contribute to the formation of women's preferences about nonmarital childbearing, nor the full range of factors that contribute to the realization of these preferences. I am also unable to measure any changes to these preferences that may occur after adolescence (Hayford 2009). Unmeasured factors contributing to the formation of women's preferences may include women's perceptions of the normative sequencing of marriage and childbearing, and schemas about what constitutes a "family" (Bachrach and Morgan 2013). Unmeasured factors contributing to the realization of women's preferences may include the strength of these preferences (Schoen et al 1999; Williams, Abma and Piccinino 2009), as well as societal schemas about the compatibility or incompatibility of education, careers and childrearing (Blair-Loy 2004), group-level norms about the acceptability of early childbearing versus college and careers, individual-level life goals (Jumping-Eagle et al 2008), and personal beliefs about the importance of marriage (Willoughby, Hall and Luzsak 2015) and/or motherhood (McQuillan et al 2015).

A second limitation to my study is that I examine the role of preferences about nonmarital childbearing in determining the timing and/or marital context only of first births. Preferences might interact differently with resources to determine the likelihood of marital versus nonmarital context for subsequent births (Guzzo and Hayford 2011). Two other limitations have to do specifically with the Add Health data. First, available Add Health data currently only cover up through early 2009, thus right-censoring the potential subsequent first births of women who postponed childbearing up to that point. When Add Health Wave 5

becomes available, new data tracking respondents' family formation through 2018 may help to give a more complete picture of the relationship between family formation preferences and likelihood of nonmarital childbearing for this cohort of women. Second, because Add Health provides information about a limited number of jobs per Wave, and provides information about the socioeconomic characteristics of male dating partners only up to Wave 3, my study may not give a complete picture of the role of these two "resource" factors in influencing family formation outcomes. Any further information from Wave 5 about women's employment histories and the socioeconomic characteristics of their dating partners may help to offset this shortcoming.

Despite these limitations, however, I believe my study offers a credible snapshot of how women's own preferences with respect to nonmarital childbearing affect the timing and marital versus nonmarital context of their entry into motherhood, within the constraints of their socioeconomic circumstances. My study helps to elaborate the mechanisms that perpetuate patterns of inequality in family formation by detailing how the likelihood of a nonmarital versus marital first birth is in aggregate largely governed by socioeconomic forces, more than women's own preferences. At the same time, I offer an account of how the likelihood of postponing childbearing is more responsive to women's individual preferences. My findings suggest that policy interventions or favorable macroeconomic changes that raise the socioeconomic profile of at-risk young women might enhance the extent to which the timing and context of the families they form are more closely aligned with their own preferences.

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Table 1: First Birth Status up to Ages 24-34, and Starting Sociodemographic Characteristics, by Nonmarital Birth Preferences Expressed before Childbearing, among Women with No Births at Ages 11-21

	Total	Would consider a nonmarital birth	Would not consider a nonmarital birth	P-value for between-group difference of distribution or means
First birth status (percentage) <sup>a</sup>				<.001
Nonmarital birth	28.1	38.9	24.7	
Marital birth	21.2	18.2	22.1	
No birth	50.7	42.8	53.2	
Family formation preferences at Age 11-21 (Wave 1) (percentage)				
Would consider a nonmarital birth	24.1	--	--	
Would not consider a nonmarital birth	75.9	--	--	
Initiated sexual intercourse at or before age 13 (percentage) <sup>b</sup>	9.3	14.1	7.7	<.001
Mother's educational attainment (percentage)				0.049
Less than high school	15.3	17.5	14.6	
High school	44.3	44.2	44.3	
Some college	17.4	18.1	17.2	
Bachelor's degree or more	23.0	20.2	23.9	
Race/ethnicity (percentage)				<.001
White, non-Hispanic	69.6	64.0	71.4	
Black, non-Hispanic	14.6	20.5	12.8	
Asian/Pacific Islander, non-Hispanic	3.6	2.2	4.1	
Hispanic	12.1	13.3	11.8	
Family intact (percentage) <sup>c</sup>	68.6	60.1	71.2	<.001
Sexual and contraceptive history (percentage) <sup>d</sup>				<.001
Never had intercourse	66.8	49.1	72.5	
Used contraception at last intercourse	21.7	30.6	18.8	
Did not use contraception at last intercourse	11.5	20.2	8.7	
Perceived likelihood of being married by age 25 (mean, scale of 1 to 5)	3.3	3.3	3.3	0.299
Perceived likelihood of going to college (mean, scale of 1 to 5)	4.3	4.0	4.4	<.001
Self-assessed planfulness and rewards to own work (mean of index, from 4 to 20) <sup>e</sup>	15.4	15.1	15.5	<.001
<i>Sample N</i>	6,179	1,585	4,594	

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Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Note: Estimates are weighted

<sup>a</sup> Measured at Wave 3 among respondents who attrited prior to Wave 4, and at Wave 4 among respondents who did not attrite

<sup>b</sup> Measured at Waves 1-4

<sup>c</sup> Both mother and father present at Wave 1 interview

<sup>d</sup> Measured at Wave 1

<sup>e</sup> Calculated by summing scores across four planning and effort dimensions: "When you get what you want, it's usually because you worked hard for it." "When you have a problem to solve, one of the first things you do is get as many facts about the problem as possible." "When you are attempting to find a solution to a problem, you usually try to think of as many different ways to approach the problem as possible." "After carrying out a solution to a problem, you usually try to analyze what went right and what went wrong."

Table 2: Percentages of Person-Months of Exposure with Achieved Sociodemographic Characteristics by Nonmarital Birth Preferences Expressed in Adolescence

	Total	Would consider a nonmarital birth	Would not consider a nonmarital birth
<i>Current highest educational attainment</i>			
High school diploma or GED	46.7	49.6	45.9
Associate's degree	5.2	5.7	5.1
Bachelor's degree or more	16.5	15.2	16.8
<i>Employment history</i>			
Ever had a part-time non-professional job	59.3	60.7	58.9
Ever had a fulltime non-professional job	38.0	41.5	37.0
Ever had a part-time professional job	8.0	8.7	7.8
Ever had a fulltime professional job	23.1	24.5	22.8
<i>Relationship experience</i>			
Ever cohabited	10.3	11.6	9.9
Ever dated a man with some college	6.6	6.8	6.5
Ever dated a man with a bachelor's degree	5.0	4.8	5.0
Age (mean)	21.0	21.2	20.9
<i>Sample N</i>	660,357	148,471	511,886

Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Note: Estimates are weighted

Table 3: Multinomial Logistic Regression Coefficients for the Competing Hazard of Having a Marital Birth or No Birth vs. a Nonmarital Birth by Ages 24-34 , among Women with No Births at Ages 11-21

	Model 1		Model 2		Model 3		Model 4		Model 5 <sup>c</sup>	
	Baseline		Resource Acquisition in Young Adulthood		Perceived Capability and Future Options		Relationship Experience		All Variables and Interactions	
	Marital birth vs. nonmarital birth	No birth vs. nonmarital birth	Marital birth vs. nonmarital birth	No birth vs. nonmarital birth	Marital birth vs. nonmarital birth	No birth vs. nonmarital birth	Marital birth vs. nonmarital birth	No birth vs. nonmarital birth	Marital birth vs. nonmarital birth	No birth vs. nonmarital birth
<i>Time-constant variables, measured Wave 1</i>										
Stated preference against nonmarital birth	0.46*** (0.114)	0.34*** (0.069)	0.46*** (0.117)	0.32*** (0.069)	0.45*** (0.115)	0.30*** (0.071)	0.44*** (0.116)	0.29*** (0.071)	0.13 (0.377)	0.53*** (0.153)
Odds ratio	1.58	1.40	1.58	1.38	1.57	1.35	1.55	1.34	1.14	1.70
Mother's educational attainment (vs. Less than high school)										
High school	-0.11 (0.161)	0.14 (0.093)	-0.21 (0.155)	0.06 (0.094)	-0.22 (0.154)	0.04 (0.094)	-0.26† (0.153)	0.03 (0.095)	-0.24 (0.154)	0.04 (0.092)
Some college	0.15 (0.186)	0.48*** (0.122)	0.02 (0.183)	0.36** (0.125)	0.01 (0.187)	0.33* (0.129)	-0.05 (0.185)	0.27* (0.128)	-0.02 (0.190)	0.29* (0.127)
Bachelor's degree	0.16 (0.205)	0.95*** (0.131)	-0.01 (0.201)	0.73*** (0.133)	-0.05 (0.205)	0.68*** (0.137)	-0.08 (0.208)	0.62*** (0.137)	-0.05 (0.209)	0.63*** (0.135)
Family intact at Wave 1	0.36** (0.108)	0.49*** (0.077)	0.32** (0.109)	0.45*** (0.080)	0.32** (0.108)	0.44*** (0.079)	0.33** (0.107)	0.42*** (0.080)	0.33** (0.107)	0.42*** (0.080)
Race/ethnicity (vs. White, non-Hispanic)										
Black, non-Hispanic	-1.70*** (0.177)	-0.68*** (0.106)	-1.65*** (0.177)	-0.68*** (0.103)	-1.66*** (0.178)	-0.68*** (0.103)	-1.66*** (0.177)	-0.71*** (0.100)	-1.65*** (0.181)	-0.71*** (0.101)
Asian/Pacific Islander, non-Hispanic	0.09 (0.411)	0.30 (0.331)	0.07 (0.407)	0.23 (0.317)	0.05 (0.406)	0.20 (0.316)	-0.01 (0.404)	0.15 (0.294)	-0.01 (0.403)	0.15 (0.291)
Hispanic, any race	-0.55* (0.226)	-0.25† (0.132)	-0.52* (0.226)	-0.24† (0.128)	-0.52* (0.226)	-0.24† (0.128)	-0.53* (0.222)	-0.25* (0.126)	-0.51* (0.221)	-0.24† (0.125)
Sexual and contraceptive history at Wave 1 (vs. Did not use contraception at last intercourse)										
Never had intercourse	0.64*** (0.152)	1.00*** (0.105)	0.60*** (0.152)	0.91*** (0.104)	0.58*** (0.155)	0.89*** (0.106)	0.55*** (0.156)	0.83*** (0.108)	0.57*** (0.155)	0.84*** (0.110)
Used contraception at last intercourse	0.18 (0.144)	0.38*** (0.092)	0.14 (0.149)	0.35*** (0.097)	0.13 (0.149)	0.34*** (0.097)	0.09 (0.149)	0.33** (0.099)	0.11 (0.147)	0.34** (0.101)

Perceived likelihood of marrying by age 25	0.17** (0.050)	-0.06* (0.029)	0.16** (0.049)	-0.06* (0.029)	0.16** (0.049)	-0.06* (0.029)	0.16** (0.049)	-0.05 (0.030)	0.15** (0.049)	-0.05† (0.030)
Perceived likelihood of attending college					0.04 (0.049)	0.07† (0.037)	0.03 (0.049)	0.06 (0.037)	0.02 (0.048)	0.06 (0.037)
Self-assessed planfulness and rewards to own work					0.00 (0.020)	-0.00 (0.014)	0.00 (0.020)	0.00 (0.014)	0.00 (0.020)	0.00 (0.013)

*Time-varying variables measured at Waves 2-4*

Age	0.39*** (0.043)	0.03 (0.026)	0.31*** (0.046)	-0.00 (0.028)	0.32*** (0.046)	0.00 (0.029)	0.31*** (0.046)	0.00 (0.029)	0.30*** (0.045)	0.00 (0.028)
Age-squared	0.01** (0.004)	0.03*** (0.003)	0.02*** (0.005)	0.03*** (0.003)	0.02*** (0.005)	0.03*** (0.004)	0.02*** (0.005)	0.03*** (0.004)	0.02*** (0.005)	0.03*** (0.004)
Period	-0.13** (0.039)	-0.05* (0.025)	-0.12** (0.039)	-0.04 (0.025)	-0.13** (0.039)	-0.04 (0.025)	-0.12** (0.039)	-0.02 (0.025)	-0.11** (0.038)	-0.02 (0.025)
Initiated intercourse at age 13 or younger	-0.37* (0.173)	-0.44*** (0.095)	-0.30† (0.171)	-0.39*** (0.098)	-0.30† (0.170)	-0.38*** (0.100)	-0.31† (0.171)	-0.40*** (0.102)	-0.29† (0.170)	-0.38*** (0.102)

Current highest educational attainment (vs. Less than high school)

High school diploma or GED<sup>a</sup>

0.58** (0.191)	0.19† (0.104)	0.56** (0.196)	0.16 (0.108)	0.55** (0.195)	0.13 (0.108)	0.36 (0.356)	0.16 (0.151)
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Associate's degree<sup>a</sup>

1.04*** (0.264)	0.50** (0.189)	1.02*** (0.273)	0.44* (0.196)	1.00*** (0.274)	0.41* (0.195)	0.47 (0.487)	0.43 (0.361)
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Bachelor's degree or more<sup>a</sup>

1.25*** (0.260)	1.02*** (0.195)	1.21*** (0.272)	0.95*** (0.204)	1.12*** (0.270)	0.81*** (0.199)	0.85 (0.519)	0.90* (0.345)
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*Employment history*

Ever had a part-time non-professional job<sup>a</sup>

0.09 (0.140)	-0.04 (0.085)	0.08 (0.139)	-0.05 (0.083)	0.08 (0.140)	-0.04 (0.082)	0.11 (0.247)	0.03 (0.138)
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Ever had a fulltime non-professional job<sup>a</sup>

-0.11 (0.125)	-0.43*** (0.081)	-0.10 (0.125)	-0.43*** (0.081)	-0.09 (0.128)	-0.39*** (0.080)	-0.13 (0.207)	-0.32** (0.105)
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Ever had a part-time professional job<sup>a</sup>

0.21 (0.203)	0.32* (0.150)	0.20 (0.204)	0.31* (0.150)	0.23 (0.207)	0.38* (0.155)	-0.11 (0.430)	0.55† (0.281)
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Ever had a fulltime professional job<sup>a</sup>

0.24† (0.135)	0.12 (0.099)	0.23† (0.134)	0.11 (0.099)	0.24† (0.139)	0.12 (0.101)	0.31 (0.279)	0.22 (0.171)
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*Relationship history*

Ever cohabited<sup>a</sup>

-0.02 (0.137)	-0.73*** (0.103)	0.31 (0.295)	-0.47** (0.173)
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Ever dated a man with some college <sup>b</sup>								0.17	0.29 <sup>†</sup>	-0.78	-0.16
								(0.219)	(0.156)	(0.485)	(0.254)
Ever dated a man with an Bachelor's degree <sup>b</sup>								0.94**	0.93**	0.68	0.92
								(0.299)	(0.294)	(0.894)	(0.868)
<i>Interactions</i>											
Preference against nonmarital birth x Graduated from high school										0.26	-0.05
										(0.390)	(0.170)
Preference against nonmarital birth x Graduated with an Associate's degree										0.69	-0.03
										(0.562)	(0.377)
Preference against nonmarital birth x Graduated with a Bachelor's degree										0.38	-0.10
										(0.546)	(0.339)
Preference against nonmarital birth x Had a part-time non-professional job										-0.07	-0.12
										(0.266)	(0.157)
Preference against nonmarital birth x Had a fulltime non-professional job										0.03	-0.11
										(0.199)	(0.133)
Preference against nonmarital birth x Had a part-time professional job										0.33	-0.27
										(0.498)	(0.357)
Preference against nonmarital birth x Had a fulltime professional job										-0.11	-0.13
										(0.275)	(0.197)
Preference against nonmarital birth x Ever cohabited										-0.48	-0.38 <sup>†</sup>
										(0.315)	(0.218)
Preference against nonmarital birth x Ever dated a man with some college										1.27*	0.71*
										(0.546)	(0.315)
Preference against nonmarital birth x Ever dated a man with a bachelor's degree										0.35	0.05
										(0.969)	(0.932)
Constant	-2.88***	5.43***	-2.65***	5.59***	-2.78**	5.40***	-2.79**	5.11***	-2.65**	4.89***	
	(0.705)	(0.459)	(0.707)	(0.445)	(0.840)	(0.510)	(0.837)	(0.489)	(0.906)	(0.523)	

Observations	660,357	660,357	660,357	660,357	660,357	660,357	660,357	660,357	660,357	660,357
-2 Log Likelihood	55,950,046		55,628,442		55,611,724		55,262,518		55,208,148	

Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates are weighted with the Add Health post-stratified grand sample untrimmed cross-sectional weight for the wave of respondents' last interview.

Note: Standard errors in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, † p<0.10

<sup>a</sup> As of the month immediately before exposure, measured at Waves 3 and 4

<sup>b</sup> As of the month immediately before exposure, measured at Wave 3

<sup>c</sup> A likelihood ratio test of the difference in goodness of fit between Models 4 and 5 shows a better fit for Model 5. (LR $\chi^2$ = 54,370 DF= 10 , p<.001)

Table 4: Multinomial Logistic Regression Coefficients for Model of Sexual and Contraceptive History at Last Report (vs. Did not Use Contraception at Last Intercourse) among Women with No Births at Ages 12-22, and among Women with No Births at Ages 18-28

	Ages 12-22 - Wave 2 <sup>a</sup>				Ages 18-28 - Wave 3			
	Model 1		Model 2		Model 3		Model 4	
	Never had sex	Used contraception at last intercourse	Never had sex	Used contraception at last intercourse	Never had sex	Used contraception at last intercourse	Never had sex	Used contraception at last intercourse
Stated preference against nonmarital birth	1.32*** (0.152)	0.67*** (0.147)	1.12*** (0.149)	0.64*** (0.156)	0.58*** (0.166)	0.20 (0.130)	0.54** (0.177)	0.19 (0.127)
Odds ratio	3.74	1.95	3.06	1.90	1.79	1.22	1.72	1.21
Mother's educational attainment (vs. Less than high school)								
High school			0.13 (0.269)	0.31 (0.257)			0.00 (0.234)	0.13 (0.177)
Some college			0.32 (0.268)	0.15 (0.281)			-0.02 (0.289)	0.12 (0.199)
Bachelor's degree			0.77* (0.314)	0.24 (0.279)			0.35 (0.239)	0.23 (0.220)
Family intact at Wave 1			0.84*** (0.165)	0.34† (0.171)			0.70*** (0.163)	0.22* (0.111)
Race/ethnicity (vs. White, non-Hispanic)								
Black, non-Hispanic			-0.06 (0.219)	-0.19 (0.227)			-0.51* (0.212)	-0.57*** (0.165)
Asian/Pacific Islander, non-Hispanic			1.04† (0.588)	-0.15 (0.420)			-0.15 (0.289)	-0.78*** (0.228)
Hispanic, any race			0.14 (0.207)	-0.71** (0.263)			0.21 (0.269)	-0.27 (0.206)
Perceived likelihood of marrying by age 25			-0.15* (0.070)	-0.17* (0.070)			-0.08 (0.078)	0.04 (0.051)
Age at Wave 2			-0.52*** (0.057)	0.04 (0.043)				
Ever married at Wave 2			-2.05† (1.114)	-0.62 (0.577)				
Age at Wave 3							-0.09 (0.067)	0.03 (0.041)
Ever married at Wave 3							-3.33***	-0.95***

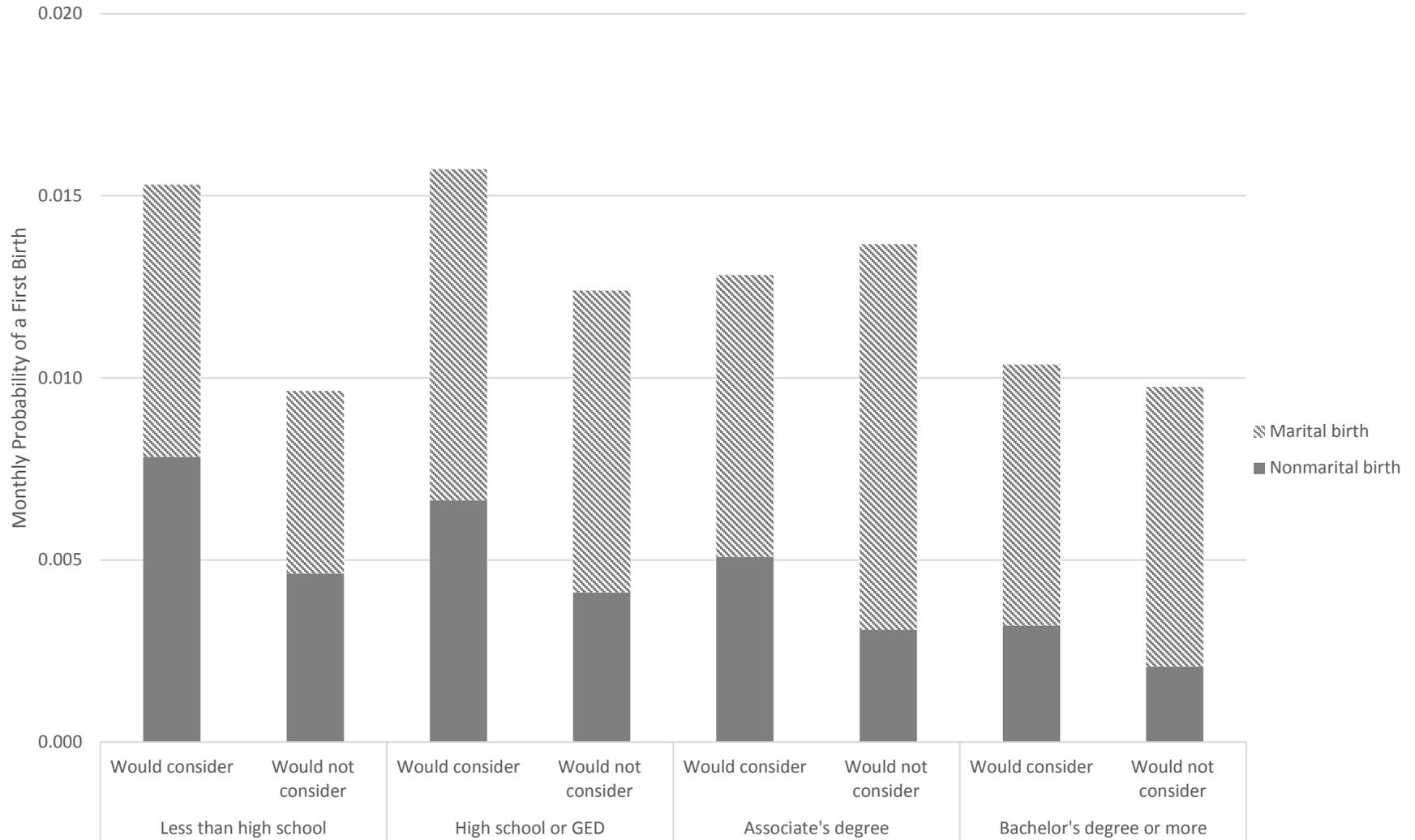
Educational attainment at Wave 3 interview (vs. Less than high school)							(0.519)	(0.170)
High school diploma/GED							0.62 (0.619)	0.59 (0.386)
Some college/Associate's degree							1.37* (0.644)	1.31** (0.390)
Bachelor's degree or more							1.73* (0.684)	1.69*** (0.410)
Constant	1.09*** (0.137)	0.61*** (0.102)	4.21*** (0.485)	0.59 (0.459)	-0.66*** (0.161)	0.87*** (0.128)	-0.77 (0.994)	-0.69 (0.695)
Observations	4,245	4,245	4,245	4,245	3,915	3,915	3,915	3,915

Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates are weighted with the Add Health post-stratified grand sample untrimmed cross-sectional weight for the wave of respondents' last interview.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, † p<0.1

<sup>a</sup> By design of Add Health, not all respondents who were interviewed at Waves 1 and 3 were interviewed at Wave 2.

Figure 1: Woman's Monthly Predicted Probability of a Marital or Nonmarital First Birth at Age 25, by Whether She Would Consider a Nonmarital Birth (As Expressed in Adolescence) and Educational Attainment



Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Probabilities are for 25-year-old non-Hispanic White women from non-intact families whose mothers have less than a high school education. All other variables are held constant at the reference categories (see Table 3).