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REEXAMINING THE ASSOCIATION OF MATERNAL AGE AND MARITAL STATUS AT FIRST BIRTH WITH YOUTH EDUCATIONAL ATTAINMENT

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Abstract

Using data from the linked Children and Young Adult sample (N = 2,865) of the NLSY79, we reexamined the association of maternal age and marital status at birth with youth high school completion, assessing multiple age categories and race/ethnic variations. Youth born to older teen mothers were no more likely to graduate from high school than those born to the youngest teen mothers. Although delaying childbirth to young adulthood (age 20–24) was associated with greater odds of children's high school completion compared to the earliest teen births, those born to young adult mothers were disadvantaged compared to those born to mothers age 25 or older. Being born to an unmarried mother was associated with lower odds of high school completion but this did not fully explain the estimated effect of maternal age at birth. We found no evidence that maternal age at birth more strongly predicted high school graduation for White compared to Latino or Black youth.

Keywords

Adolescent childbearing; family structure; marriage; race/ethnicity; secondary education

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An extensive body of literature has documented the disadvantages faced by children born to teen parents (Cooksey, 1997; Haveman, Wolfe, & Peterson, 1997; Hayes, 1987). Even though the largest increases in the average age of first birth occurred between 1970 and 1990, during the late 1980s there was a brief but steep increase in teen birth rates (Mathews & Hamilton, 2009). Since 1991, birth rates for teens have fallen for all racial and ethnic groups. American women increasingly defer childbearing into their twenties (Ventura, 2009). The framing of teen childbearing as a social problem has dominated research on parenting (Bonell 2004; Furstenberg 2007). Less attention has focused on whether delaying childbearing from adolescence into young adulthood is beneficial. Yet some research has

documented that children born to women in their early twenties also suffer some of the negative outcomes associated with being born to teen mothers, such as completing less schooling and having higher levels of idleness (Francesconi, 2008; Levine, Pollack, & Comfort, 2001). Given the increasing importance of human capital investments acquired in late adolescence and early adulthood, it is time to reassess the association between maternal age at birth and child outcomes.

Another important factor when considering the ramifications of fertility delay is the interdependence of age and marital status at first birth. In the early 1970s, when half of all women were married by age 21 (USCB, 2006), non-marital births accounted for only 10.7% of all births (Ventura & Bachrach, 2000). Still, half of all nonmarital births were to women in their teens (Ventura, 2009), and a large proportion of teen marital births were the result of post-conception marriages (Bachu, 1999). In the intervening decades, non-marital childbearing increased dramatically (Lichter, Sassler, & Turner, 2014; Ventura, 2009). Research documenting the disadvantages associated with being born to unmarried parents is vast; such youth demonstrate poorer outcomes in adolescence and young adulthood, including lower levels of educational engagement and attainment (Amato, 2005; Brown, 2006; Ermisch & Francesconi, 2001; Sassler, Williams, Addo, Frech, & Cooksey, 2013). Since the 1970s, the majority of Black children have been born to unmarried mothers; among White women, non-marital childbearing was less prevalent, but has been rising (Furstenberg, Brooks-Gunn, & Morgan, 1987; Ventura & Bachrach, 2000). Yet few recent studies have assessed whether the association between being born to an unmarried woman and educational outcomes are similar across groups.

The confluence of the decline in teen childbearing and the rise in non-marital childbearing suggests the need to reassess the association between maternal age at birth, union status, and youth outcomes. Educational attainment is a particularly important achieved attribute. Young adults who fail to complete high school are particularly disadvantaged in the labor market (Rouse, 2007). Disparities in educational attainment contribute to the diverging destinies experienced by youth from more and less advantaged backgrounds. Blacks, for example, have experienced higher returns to education on average than Whites (Henderson, Polachek, & Wang, 2011), despite their lower average levels of school attainment, highlighting the need to better understand the factors associated with obtaining a high school diploma. In this paper, we have three main objectives. First, we assess whether having a mother that delayed fertility beyond their teen years and into their early twenties is associated with being more likely to complete high school. Second, we examine whether the disadvantage associated with younger maternal age at childbirth can be accounted for by marital status. Third, we explore whether associations between maternal age at birth, marital status, and high school graduation differ by race and ethnicity. Data are from the linked Children and Young Adult sample of the 1979 National Longitudinal Survey of Youth.

Early Childbearing and Youth Educational Attainment

Teenage childbearing has long been viewed as a social problem (Bonell, 2004; Furstenberg, 2007). Concern is often expressed over the cognitive, emotional, and social development of children born to very young mothers, and the intergenerational consequences of early

parenting (Furstenberg et al., 1987; Hayes, 1987). We draw on the theory of household production (Becker, 1991; Foster, 2002), which considers the linkage between maternal inputs and child outcomes. This framework emphasizes the tradeoffs between the value of time spent in human capital investment and non-market time. Early childbearing may reduce a mother's investment in her own human capital because of premature curtailment of schooling or by limiting employment opportunities. Both early and more recent work finds that teen childbearing is strongly and negatively associated with mother's educational attainment (Fletcher & Wolfe, 2009; Klepinger, Lundberg, & Plotnick, 1999). Women who give birth as teens are less likely to complete high school than those who defer childbearing beyond adolescence (Martin, 2000); that also limits opportunities for employment in high quality jobs that provide control over employment circumstances (Johnson, Kalil, & Dunifon, 2012).

There is, however, no consensus on what constitutes "early" childbearing. Childbearing in late adolescence and the early twenties may also curtail investments in human capital, as young people are increasingly encouraged to pursue post-secondary education. Furthermore, employment opportunities for young adults with only a high school degree or in their early twenties are limited, and unemployment rates are higher than among those with a high school degree or more (Rouse, 2007). This raises the possibility that offspring may be disadvantaged even when their mothers deferred childbearing into their late teens or even early twenties.

There is already a large body of research on the consequences of early childbearing for young children and adolescents, assessing various cognitive and socio-emotional aspects of child's development. Children born to young mothers score significantly lower on measures of mathematics, reading comprehension, and vocabulary test scores than those born to older mothers (Cooksey, 1997; Geronimus, Korenman, & Hillemeier, 1994; Hofferth & Reid, 2002; Levine et al., 2001). But differences often narrow substantially after controlling for family background characteristics (Cooksey, 1997; Geronimus et al., 1994; Levine et al., 2001). Net of human and financial capital measures, however, children born to young mothers score significantly lower in reading recognition and comprehension than those born to mothers in their early 20s (Cooksey, 1997), and are also more likely to repeat a grade (Levine et al., 2001, 2007).

Yet results from empirical assessments of child outcomes associated with early or later teen childbirth do not definitively show that later childbearing is universally better. Cooksey (1997) compared those born to mothers under age 18 with a reference group of mothers who were 20 to 22 years old at the first birth, and found the worst outcomes for reading recognition and comprehension among those born to young teen mothers. Levine and colleagues (2001) use the same data (the NLSY79) but at a later wave with a larger sample; they also find that poorer outcomes were generally most evident among those born to the youngest mothers (those 16 and younger upon giving birth). But some question whether there are salient differences in youth outcomes when mothers are in their late teens or early twenties at birth, as most women have already completed at least their secondary schooling by their late teens. In fact, Cooksey (1997) found no significant differences in the reading comprehension and recognition outcomes of children born to women in their late teens (18–

19) and their early twenties. These studies suggest that it is mainly births to the youngest teen mothers that result in detrimental child outcomes.

Geronimus and colleagues (1994) have argued that teen child-bearing may be protective for African American mothers and children, relative to delaying births into the twenties, as young mothers often receive support through multigenerational shared parenting arrangements (see also Stack, 1974; Burton, 1990). But recent research has challenged this view; delaying a first birth from adolescence (< 20) to early adulthood had no measurable positive or negative consequences for the midlife health of White, Black, or Latina women, after accounting for differential selection of women into adolescent or young adult birth (Williams, Sassler, Addo, & Frech, 2015). In fact, several studies have found that children born to women in their early twenties were also disadvantaged relative to those born to women who deferred childbearing into their mid-twenties or later (Francesconi, 2008; Levine et al., 2001). Using data from the British Household Panel Survey, and focusing on youth born between 1970 and 1983, Francesconi (2008) found a lower likelihood of (the equivalent to) graduating from high school for youth born to both teen mothers and those born to mothers aged 20 to 23 at their birth, relative to youth who were born when mothers were ages 24 to 27, even after accounting for within-family differences; Francesconi therefore concluded that while children of teen mothers achieve inferior outcomes, so do children of mothers who gave birth before their 24th birthday.

The lack of a high school diploma is an important predictor of unemployment and poverty (Rouse, 2007). Levine and colleagues examined behavioral outcomes that hinder academic achievement in adolescence, such as skipping school, fighting, truancy, and early sexual activity. They found that those born to young mothers had a greater likelihood of experiencing early sexual debut, fighting in school, and skipping school than those youth whose mothers were somewhat older at their birth (Levine et al., 2001, 2007). Others focused on those reaching maturity during the 1970s and 1980s found that early childbearing (before age 18) reduced high school graduation (Haveman et al., 1997), though among more recent cohorts those born to older teen mothers were no less likely to graduate from high school than those born to women ages 20 to 21 (Hoffman & Scher, 2008). Whether disadvantage associated with maternal age at first birth extends through the early twenties, however, requires additional study, particularly as employment and educational investments beyond the secondary level become more important.

Maternal Marital Status and Youth Educational Attainment

In recent decades, the proportion of births to unmarried women has increased greatly. Change in marriage norms are particularly evident among women giving birth in their teens. In 1970, 30% of teens were unmarried at the birth. That share increased to 67% by 1990 (Wildsmith, Steward-Streng, & Manlove, 2011). Non-marital childbearing is disproportionately concentrated among teenagers, but the prevalence of nonmarital parenting also increased among women in their twenties. In 1970, only 9% of births to women aged 20 to 24 were to unmarried women; by 1990 this proportion had risen to 37% (Wildsmith et al., 2011). This was largely a result of declines in marriage following conception (Bachu, 1999; Lichter et al., 2014).

A sizable body of literature also documents that children born to unmarried mothers are more likely to live in poverty, experience more residential moves, and have weaker networks of social support than do children growing up either with both biological (married) parents, or single parent families resulting from parental divorce (Brown, 2006; Raley et al., 2005). Family disadvantaged status is frequently transmitted across generations; women who become unmarried parents are more likely to have grown up in poor families, to have experienced parental union disruption, and to have dropped out of school themselves (Amato, 2005; Furstenberg et al., 1987). Children born to unmarried parents also receive less encouragement and financial support to achieve academically than those from intact married-parent families (Astone & McLanahan, 1991), leave home at younger ages (Aquilino, 1991). The evidence suggests that those growing up with unmarried mothers might demonstrate a weaker attachment to educational achievements, for reasons such as economic exigency, a shortage of resources to enable school attendance, or a weaker proclivity for studying and delayed gratification (Astone & McLanahan, 1991).

It is not surprising, then, that numerous studies have found that youth born to unmarried mothers are less likely to complete high school than those born to married parents. This finding has remained consistent over time and across samples, emerging in Furstenberg and colleagues' study of Black teenagers in Baltimore (Furstenberg, 2007), nationally representative samples of youth born between 1953 and 1968 (Aquilino, 1996), and youth born in the 1970s through 1990s (Hoffman & Scher, 2008; Sassler et al., 2013). Children born to unmarried mothers scored significantly lower in math, reading, and comprehension scores when young, relative to those born to married parents (Cooksey, 1997). Su, Dunifon, and Sassler (2015) found that White children born to unmarried mothers had more behavioral problems and lower cognitive test scores than children born to women who experienced mid-pregnancy marriages; children born to Black mothers in mid-pregnancy marriages also had higher reading comprehension scores than those born to unmarried Black mothers, but significant differences disappeared after controlling for maternal sociodemographic factors or accounting for selection into mid-pregnancy marriage. In both studies, differences in the outcomes of children born to unmarried and married mothers narrowed considerably and in many cases were no longer significant after controlling for maternal characteristics (Cooksey, 1997; Su et al., 2015). Such findings highlight the need to include measures of maternal family background prior to childbearing.

Finally, prior research on the link between maternal union status at birth and educational outcomes does not differentiate between youth born to very young (teen) mothers, and those born to older mothers. Given that teen mothers are disproportionately likely to be unmarried, it is important to isolate, to the extent possible, the estimated relationship of maternal age at first birth and maternal union status at first birth. We hypothesize that maternal union status at first birth will explain some but not all of the negative association of being born to a teen mother on educational outcomes.

Race and Youth Educational Attainment

Race and ethnic differences in age and marital status at birth are also important and may differentially alter the relative risks of early adult versus teen parenthood. Previous research

has suggested that minority youth respond differently to challenging family situations than do whites. Scholars have long argued that racial minorities have developed strong support systems for dealing with the structural inequalities they have long experienced in American society (Stack, 1974; Jarrett & Burton, 1999), such as reliance on extended and fictive kin, multigenerational coresidence, and coethnics. Heard (2007) theorized that while minority children were more often disadvantaged by growing up without both parents than White children, they benefitted from social norms and cultural supports that helped them cope with family arrangements that differed from the dominant cultures (see also Jarrett & Burton, 1999).

Geronimus (1996) has argued that early fertility may be an adaptive strategy for low income urban African-American women vulnerable to “weathering” – accelerated declines in health that pose challenges to bearing and raising children at older ages. Some evidence also suggests that Latina women are particularly resilient to negative socioeconomic consequences of teen childbearing (Lee, 2010). Furthermore, Black and Latina teen mothers may have greater access to family support than their young adult counterparts, who are more likely to live independently; this assistance may be particularly important for coping with the challenges of new parenthood and may mediate the negative outcomes associated with teen parenting and child development (Mollborn, 2010).

Similarly, various studies have found that maternal marital status at birth is more strongly associated with the well-being and cognitive outcomes of non-Latino White than Black children (Fomby, Mollborn, & Sennott, 2010). Nonmarital childbearing has long been more common among Blacks than among Whites (Furstenberg et al., 1987; Ventura & Bachrach, 2000). Among Latina women, over a third of all births, 37%, were to unmarried women in 1990 (Ventura & Bachrach, 2000). This is in part because White women had a greater likelihood of entering into marriage following a conception (Bachu, 1999; Lichter et al., 2014). Among first births conceived outside of marriage to women aged 15 to 29 in the early 1980s, 39% of young White women married prior to the birth, compared with 7% of similar Black women (Bachu, 1999). Gerstel (2011) has argued that the emphasis on marriage and nuclear family life disregards the very social resources and community ties that have played such a crucial role in the survival strategies of low-income populations. Nonmarital parenting is also greater among Latina women than White women, though extended family living is more common. It is therefore important to assess the associations between early childbearing, nonmarital parenting, and educational attainment separately by race and ethnicity.

Maternal attributes may influence youth’s educational attainment in many ways, and numerous studies highlight the importance of accounting for pre-birth attributes as a way to determine disadvantage prior to childbearing (e.g., Geronimus et al., 1994). Mothers whose own mothers had low levels of education, for example, may not realize the importance of educational attainment, and could be less likely to encourage high educational aspirations in children (Ermisch & Fracesconi, 2001). They may also have more difficulty navigating the educational system. Exposure to economic disadvantage, such as experiencing family disruption as a child, or growing up in the South, may diminish a mother’s ability to navigate the educational system if children experience challenges in school. Previous

research has also highlighted the importance of child gender and weight at birth as important indicators of child outcomes. Those who at birth were low weight have poorer educational outcomes, which may accumulate over time to reduce the likelihood of completing high school (Kiernan & Mensah, 2011). Finally, boys have lower likelihood of completing high school than do girls; we control for these characteristics.

The Current Study

Policy makers presume that deferred childbearing – into young adulthood and when married – is beneficial for child wellbeing. Yet there is little evidence regarding whether youth outcomes, such as educational attainment, are improved when mothers delay childbearing into their early twenties, or if being married lessens the negative outcomes associated with early childbearing. With this study, we contribute to the literature by empirically testing whether delayed childbearing has the expected outcomes, if marriage attenuates the adverse factors associated with early childbearing, and if the association between age at birth and educational attainment varies by race/ethnicity. We pose the following hypotheses:

Hypothesis 1 Based on prior studies, we expect an age gradient in the likelihood of graduating from high school, with youth born to the youngest teen mothers less likely to graduate from high school than those born to older mothers. Although prior literature was not definitive regarding whether delaying childbearing into one's late teens or early twenties differentiated outcomes, we expect delays into the late teens and early twenties to be more beneficial than early teen childbearing with regards to youth educational attainment.

Hypothesis 2 The extensive body of literature on the advantages accruing to those born within a marital relative to a non-marital union leads us to hypothesize that maternal union status at birth will be associated with educational attainment and will explain some but not all of the estimated association of maternal age at first birth on educational attainment.

Hypothesis 3 Because patterns of family life differ across race and ethnic groups, we expect that the negative association of being born to a teen and young adult mother with high school completion will be stronger for White than for Black and Latino youth, after controlling for maternal marital status at birth.

DATA AND MEASURES

Data came from the linked Children and Young Adult sample of the 1979 National Longitudinal Survey of Youth (NLSY79). Initial interviews were undertaken with 12,686 young men and women ages 14–22 in 1979, which contained an oversample of military and economically disadvantaged whites that were dropped from the sample in 1991. Main respondents have been retained and interviewed annually through 1994, and biennially since. A particular strength of the NLSY79 is the availability of linked data on all children born to the NLSY79 women. As of 1994 and continuing biennially, children aged 15 and older were interviewed as young adults. When weighted, the sample of children born to the women of

the NLSY79 can be considered fully representative of children born to a nationally representative sample of women between the ages of 14 and 21 on December 31, 1978.

We use data through 2010, at which point all NLSY79 mothers were over 40 and the vast majority had completed their childbearing. To be eligible for our study, the young adult offspring of the NLSY79 mothers had to be at least 20 years of age. We limit our unit of analysis to first born children. Extending the analysis to multiple children within the family would introduce bias because such an analytic sample would contain an over-representation of children born to younger mothers (who have aged into the young adult sample). Studies on birth order effects do, in fact, find a positive gradient when it comes to the allocation of resources amongst siblings, with a first-born advantage in high school completion (Kantarevic & Mechoulan, 2006). Our results therefore provide a more conservative test of our key hypotheses regarding the negative consequence of early childbearing on high school completion. As of 2010, more than 90% of first-born children had aged into the young adult sample. Of 4,021 (52.8%) NLSY79 women known to have had a child by 2010, there were 2,865 first born offspring of NLSY79 mothers eligible for our analyses who had reached age twenty (71.3% of all first born children). These youth were born between 1972 and 1990.

One critique of prior studies that utilized data from the NLSY79 Children and Young Adult data sets was that the youth represented were disproportionately born to very young mothers (Cooksey, 1997; Levine et al., 2001, 2007). Because we follow these young adults into 2010, our sample better represents a broader age range of mothers, going from age 13 to 33. Young adults born to mothers between the ages of 25 and 33 at their birth are underrepresented in our sample, while young adults born to mothers who delayed first childbearing until after age 33 (a total of 225 women, or 5.6% of all NLSY79 women who had a child by 2010) are not represented in our sample.

Dependent Variable—We construct a measure of *high school graduation* based on three questions asked of young adults at each survey. Respondents reported the highest grade completed at each interview. They were then asked if they received a diploma or passed a General Equivalency Degree (GED) examination, and if so, which one they had obtained. Those who answered affirmatively to receiving a diploma by age 19 were designated as graduating from high school. Those who did not report receiving a diploma, received a GED, or who did not answer the question about degree receipt (n = 270) were coded as not graduating from high school.

Independent Variables—Our primary independent variables of interest are the age of the mother at the birth of the child and her marital status at the time of the birth. We utilize the age of the mother at the time of the birth to designate five age groups. Our analysis distinguished between two sets of teen births: young teen (or adolescent) mothers are those who had their first-born child prior to turning 18; older teen mothers had their first child between the ages of 18 and 19. Based on the literature (Francesconi, 2008; Levine et al., 2007; Williams et al., 2015), we also disaggregated births to young adult mothers; early young adult mothers are those who bore their first child when they were between the ages of 20 and 21; older young adult mothers are those who had their first child when they were between the ages of 22 and 24; women who were 25 years or older at the birth of their first

child serve as the reference group. As for maternal marital status, we denote those mothers as unmarried if they had their first birth while never-married and lived with that child in her household. Our final set of independent variables, race/ethnicity, is an ascribed characteristic, denoting the mother's race as non-Latino Black, Latino, and non-Latino White.

Control Variables include a range of background variables that capture indicators of the mother's socioeconomic status while growing up. To address the intergenerational transmission of family status, we utilize one measure of the educational attainment of the grandmother, which serves as a proxy for social status; maternal education may be endogenous with the birth of the young adult, if teen pregnancy curtailed the mother's educational pursuits. We therefore note if the maternal grandmother completed at least a high school degree (1 = completed at least 12 years of school). Another indicator measures the family structure experienced by the mother; a dummy variable denotes the mother's family composition at age 14 (1 = lived with both biological parents). We also indicate if the mother was born in the South (1 = yes) to account for regional differences in attitudes, and a measure of the mother's nativity (1 = foreign born). Our last maternal measure takes advantage of the test of cognitive ability respondents took in 1980, the AFQT score, which ranges from 1 to 99.

Last, we include a limited number of indicators from the youth themselves. These include the sex of the child (1 = female) and whether the child was low-birth weight (1 = less than 5.5 pounds at birth). We present only the results for the models that include youth characteristics; results that omit controls for the sex and birth weight of child are quite similar, and are therefore not shown. Missing information on the explanatory variables was estimated using multiple imputed data created from the chained equations imputation method (*mi impute chained* command in the 13th edition of Stata) in order to maintain maximum sample sizes for all variables. Descriptive statistics for all variables are presented for the total sample and by maternal marital status at the child's birth and by race in Table 1.

Analytic Approach

We begin by exploring the total sample of young adults who have reached age 19, and assess how youth born to teen and young adult mothers fare relative to their counterparts whose mothers were 25 years or older at their first birth. Using logistic regression, we regress a dichotomous indicator of young adults' high school completion on maternal age at birth and controls for maternal characteristics and young adult attributes, and then include maternal marital status at birth. Finally, we conduct race specific analyses of the full model described above.

RESULTS

Descriptive Results

Among young adults reaching the age of majority in the last decade of the 20th century and the first decade of the 21st, relatively few were born to young teen mothers. Maternal age at birth for the mothers of the youth represented in our sample is presented in Figure 1, for the

overall sample and by race. Among the total sample, a much larger proportion of mothers had their first child after reaching age 25 than before turning 18 (23.8% versus 15.8%). But sizable race differences in the timing of motherhood are evident. Nearly one quarter (24.9%) of Black youth in our sample were born to teen mothers, compared with less than 10% of White young adults and 15.7% of Latino youth. At the other end of the age spectrum, a third of the White youth were born to mothers who were age 25 or older upon having their first child, compared with only 18.3% of Latino youth and 13.5% of Black young adults.

Over three quarters of the young adults born to NLSY79 mothers, 77%, graduated from high school before turning 20. Young adults whose mothers were married at the time they were born also had a considerable advantage over their counterparts born to unmarried mothers when it came to high school completion. Racial disparities in the proportion of young adults who obtained a high school diploma before age 20 are also evident, with White youth being the most likely, and Latino youth the least likely to graduate from high school. [Figure 1 about Here]

Multivariate Results

We first tested whether maternal age at birth matters for youth's likelihood of graduating high school. Table 2 presents results from the logistic regression models comparing the relative risks of high school graduation for youth born to adolescent and young adult mothers, relative to those born to mothers who had their first birth when they were age 25 or older and supplementary models (not shown) comparing each maternal age at birth category to all others. Model 1 shows the estimated association of age at first birth accounting for family background and individual characteristics. The odds of graduating from high school among youth born to older mothers (age 25+) were 3.23 times that of youth born to the youngest teen mothers (*OR* = 1/.31), and 2.39 times greater than those of youth whose mothers had them in their late teens (18–19) (*OR* = 1/.42). Although youth born to mothers in their late teens (18–19) through age 20–24 were more likely to graduate from high school than youth born to women in their early teens, the most important distinction is being born to a mother age 25+ compared to all others. We therefore find preliminary support for Hypothesis 1. Delaying childbearing from the early teens to late teens or older is linked with better offspring educational outcomes. However, we find no evidence that delaying childbearing from the late teens to age 20–24 or from age 20–21 to age 22–24 is associated with higher odds of high school graduation among offspring. Such advantages are limited to delays beyond age 24. It is important to note, however, that these associations may be explained in part by maternal marital status at birth, to which we next turn our attention.

Our second objective focused on estimating the role of maternal marital status at birth: (a) on high school completion and (b) in explaining the association of maternal age at birth with high school completion. After adding a control for marital status at birth in Model 2, we now find only partial support for Hypothesis 1. Controlling for maternal age at birth reduces the difference in odds of high school graduation between those born to young teen mothers and those born to older teen mothers to nonsignificance. However, net of maternal marital status at birth, youth born to young teen mothers are disadvantaged relative to youth born to

mothers age 20 or older and all are disadvantaged relative to those born to mothers age 25 or older.

In support of Hypothesis 2, the results further indicate that being born to an unmarried mother is associated with significantly lower odds of graduating; youth born to mothers who were married prior to having their first child had odds of high school graduation that were 1.43 times that of their counterparts born to unmarried mothers. Although maternal marital status explains the advantage of births during the late teens compared to early teens, it does not account for all other observed differences.

Table 2, Model 2 provides additional evidence that family advantage benefits youth's accomplishments for several generations. Youth whose mothers lived with both parents at age 14 (a proxy for intact family background) have odds of high school graduation that were 1.3 times that of youth who did not. Mother's cognitive ability (AFQT scores) was also strongly and positively associated with the likelihood of high school graduation. Even more importantly, our results indicate that after controlling for maternal background characteristics and age and marital status at birth, youth born to Black mothers demonstrated an elevated likelihood of high school graduation relative to those born to White mothers. Compared to those born to White mothers and net of controls, the odds of obtaining a high school diploma were 84% greater for Black young adults. This suggests that if White youth exhibited the same levels of disadvantage as their Black counterparts, their high school completion rates would suffer, consistent with existing theories (Heard, 2007; Jarrett & Burton, 1999). We also find daughters exhibited much greater likelihoods of obtaining a diploma than sons (*OR* = 1.76).

Next, we assess whether the association of maternal age at birth with high school completion differed across race and ethnic groups by re-estimating Model 2 in Table 2 separately by race/ethnicity. We then conduct post-hoc tests of the significance of differences in coefficients by race/ethnicity. The results in Table 3 provide little support for little support for Hypothesis 3 that the association of being born to a teen or young adult compared to an older mother with high school completion will be stronger for White than for Black and Latino youth. For each race/ethnic group, there are no significant differences in odds of high school graduation among those born to mothers in their early teens (age 17 or younger) compared to those born to mothers age 18–19 or between those born to mothers in their late teens compared to early adulthood (age 20–21). The only significant race/ethnic difference (indicated with superscripts e and f) is in the lower odds of graduating for youth born to mothers age 22–24 compared to age 25+; this difference is significantly greater among non-Latino Black youth compared to non-Latino White and Latino youth. In fact, for non-Latino White and Latino youth, there is no educational advantage to youth if their mothers delay birth from age 22–24 to age 25+, but for Non-Latino Black youth the advantage is large and significantly greater than it is among their non-Latino White and Latino counterparts.

The association between maternal marital status at birth and high school graduation was only significant for non-Latino whites. However, children born to White unmarried mothers were no less likely to complete high school than their Black and Latino counterparts who were born to unmarried mothers. The role of family and respondent background

characteristics on youth's odds of high school graduation differed only slightly across groups. Mother's cognitive ability was linked to greater odds of high school graduation for all race/ethnic groups. Although low birth weight is associated with significantly lower odds of high school graduation among non-Latino Black but not non-Latino White or Latino youth, the between race/ethnic differences were not statistically significant.

DISCUSSION AND CONCLUSION

Teen parenting has long been problematized in the United States, and over the past few decades the teen birth rates have declined considerably. In recent decades, as the proportion of births to teenagers has declined, the proportion of first births to women in their twenties has grown. At the same time, young adulthood has increasingly become a key time period for human capital accumulation. Our analysis examined whether children born to parents in their early twenties also faced disadvantages once largely limited to those born to teenagers.

Household production theory posits that individuals have to make tradeoffs between time spent in the market and nonmarket time, and that there are costs associated with those decisions. The constraints imposed on the ability to acquire market skills because of the birth of a child, be it in the labor market or in the realm of educational attainment, are certainly not limited to those bearing children as teens. Such constraints operate well into adulthood. Consistent with earlier studies, we find that children born to teen mothers are considerably less likely to receive a high school diploma than those born to older mothers. Earlier studies (Haveman et al., 1997; Hoffman & Scher, 2008) suggested that deferring even a year or two would be beneficial for offspring. Our results suggest that in a time of extended human capital accumulation, deferring childbearing into the late teens may still not be enough: youth born to older teen mothers were no more likely to graduate from high school than those born to the youngest teen mothers after accounting for background family characteristics and maternal marital status at birth. Delaying child birth to young adulthood did increase the likelihood of high school completion compared to youth born to the youngest teen mothers. Their odds of completion, however, were still lower than children born to mothers age 25 or older. Disadvantages still accrue to youth born to young mothers, even if they are old enough to have completed high school or college. Our findings are consistent with those from the British Household Panel Survey (Francesconi, 2008).

Our results indicated more similarities than differences in the association between maternal age at birth and high school graduation across race/ethnic groups. Being born to a teen mother (17 or younger) conferred more disadvantage compared to the oldest mothers (25 and over) for all race/ethnic groups, and marital status at birth was unable to fully explain the disadvantage. Postponing first birth for just a few additional years conferred some advantage to their offspring, perhaps by enabling mothers to complete their own high school degree prior to parenting. Mothers who were older at the birth of their first child may have been better able to obtain a high school diploma than those who became teen mothers, and may have been more advantaged in the job market, with positive ramifications for their children.

Our results also suggested that being born to a black mother age 22–24 was associated with a decreased likelihood of high school graduation relative to age 20 or 21. This suggests that it was not just delayed childbearing that shaped parental transmissions among Black youth; there were other stressors operating that affected the likelihood that Black youth born to mothers in their twenties would graduate from high school. Significant reductions in teen childbearing may elevate the high school graduation odds of youth born to Black mothers. Still, our results highlight the need for additional study to determine why Blacks born to mothers in their twenties remain disadvantaged relative to the other age categories we examined. We also find evidence of a sizable gender advantage in the odds of high school graduation; daughters exhibited much greater likelihoods of obtaining a diploma than sons (*OR* = 1.76) and this was especially marked among black youth.

Our results also do not suggest that marriage among young mothers is a solution to the difficulties facing disadvantaged families. In fact, maternal marital status at birth is not a significant predictor of high school graduation for non-Latino Black or Latino youth after controlling for maternal age at birth and other relevant background characteristics. Even among Non-Latino White youth for whom maternal marital status predicts educational outcomes, being born to an adolescent or young adult mother (before age 22) remains independently linked to lowered odds of high school graduation after controlling for maternal marital status at birth. More than half (70.8%) of the Black young adults in our sample were born to unmarried mothers, as were nearly 30% of Latino youth. These findings suggest that the negative outcomes associated with stigmatized behaviors among majority populations are weaker in populations where such behavior is more prevalent. Our findings suggest the existence of a certain “tipping point,” beyond which being born to an unmarried mother may not be negatively associated with high school completion. The majority of births to unmarried women in their twenties in recent years have been to single women (Lichter et al., 2014). As the prevalence of non-marital parenting within the White population increases, it remains to be seen if the association between marital status and educational attainment shifts to become more benign, or if such factors contribute ever more to the diverging destinies facing young adults from more and less advantaged family backgrounds.

There are limitations of our study that merit discussion. Our sample of youth born to NLSY79 mothers is broader than that used in previous studies (Cooksey, 1997; Levine et al., 2001, 2007), but still does not include children born to the youngest women in the maternal sample. We expect that future analyses that include these youth will find even greater disparities in graduation odds. An additional temporal issue is posed by changes over time in high school graduation (Hofferth & Reid, 2002). If young adults born to teen mothers came of age during a period when dropout rates were higher or high school graduation rates lower than they were for young adults born to older first-time mothers, then disentangling the influence of changes over time from the effect of mother’s age at first birth becomes more difficult. A closer look at schooling outcomes for youth coming of age between 1990 and 2010, when youth in our sample were completing secondary school, suggests that children born to older mothers benefitted only modestly from improved educational outcomes in later periods. Despite year-to-year fluctuations, the percentage of students dropping out of school each year remained relatively unchanged since 1987, while the proportions of 18–24 year

olds who received a high school diploma or alternative credential trended upwards modestly (Chapman et al., 2011, Table 11). Additional tests (not shown) that included a control for the mother's calendar year of first birth did not indicate that youth born more recently were any more likely to graduate from high school; this suggests that our measure of maternal age at childbirth is doing a good job of capturing time trends in fertility. The prevalence of non-marital childbearing was also increasing over this same time period. Future research should focus on whether the outcomes associated with being born to an unmarried mother change over this period, and at what point these associations shift, but that would require a larger sample size than provided by the NLSY79 Youth Adult sample.

We considered conducting sibling fixed effects models, but decided against their inclusion for several reasons. In addition to not being appropriate for our research question regarding maternal age at birth, sibling fixed effects models require a significant amount of intra-family variation, and base conclusions on specific and non-generalizable circumstances in which such intrafamily variability occurs (Klepinger et al., 1999). Excluding only children and families in which all or no siblings finished high school would necessarily restrict our sample to large families born to younger mothers with at least two children who had reached the age of 20. The sample would be artificially constrained even further when estimating the role of the marital status of the mother at the time of the birth. Data limitations also preclude us from including information on fathers, though their engagement may play an important role in the educational attainment of offspring.

Despite the wealth of evidence indicating adverse outcomes associated with being born to teen parents, researchers have failed to reach consensus over whether such associations are causal or mainly a result of selection. Our results should not be interpreted as causal. Instead, our findings highlight the need to better account for selection into early parenting itself, given the nontrivial association between the timing of childbearing and child outcomes. For starters, with the exception of white youth, we do not find much evidence that being born to married mothers is associated with more beneficial educational outcomes, at least for youth born to the youngest mothers. In such instances, being born to young mothers appears to be associated with negative long-term outcomes regardless of whether mothers had married prior to the birth (e.g., Su et al., 2015). Our results provide further support for those seeking to defer non-marital childbearing, particularly among teenagers, where it is generally unintended. We also do not find evidence that early parenting is beneficial for the offspring of Black youth; while Black young adults born to women in their early twenties are more likely to graduate from high school than their counterparts born to teen mothers, they still are less likely to complete high school than their White counterparts born to women in their early twenties. Taken in tandem with other recent findings, our results suggest that there is a relationship between early childbearing, particularly among Black women, and adverse outcomes for both the mothers and their children (Williams et al., 2012). Additional research should formally test for selection into teen childbearing as a mechanism resulting in poorer youth outcomes.

The association between age at first childbirth, marital status at birth, and child outcomes may have shifted in light of temporal changes in demographic behaviors. From the 1970s on, first birth rates at older ages increased only for women with four-year college degrees

(Martin, 2000). Some have suggested that the growing inequality in birth timing also reflects the increase in social inequality, as it is only the most advantaged women who can time their births optimally, and who also have access to quality childcare and family-friendly work environments. Our findings suggest that growing disparities in the timing of childbearing may contribute to increasing inequality among offspring.

The early twenties are an increasingly important time for accumulating education credentials and employment experience. Childbearing, even for women in their early twenties, still has ramifications for intergenerational mobility and attainment. Mothers who bore children that came of age in the 1990s and into the first decade of the 21st century were required to adjust their behaviors in response to the new welfare laws of the 1990s, particularly the replacement of AFDC (Aid to Families with Dependent Children) with TANF (Temporary Assistance for Needy Children). TANF emphasized employment, and the numbers of single mothers entering into the labor force increased dramatically during the mid-1990s (Blank, 2002). Many of these young mothers worked in low-wage occupations, with little control over hours and few opportunities for upward mobility, which has ramifications for children's behavioral and academic well-being (Johnson et al., 2012). While the number of poor families with children decreased during the 1990s (Blank, 2002), the influence of these changes on the cognitive development and behavioral outcomes of the children of poor mothers requires additional study. Our findings suggest that being born to mothers under the age of 25 is associated with the intergenerational transmission of poverty, through the significantly decreased likelihood that such youth will obtain a high school diploma.

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References

Amato PR. The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. Future of Children. 2005; 15:75–96. DOI: 10.1353/foc.2005.0012 [PubMed: 16158731]

Aquilino WS. Family structure and home leaving: A further specification of the relationship. Journal of Marriage and the Family. 1991; 53:999–1010. DOI: 10.2307/353003

Aquilino WS. The life course of children born to unmarried mothers: Childhood living arrangements and young adult outcomes. Journal of Marriage and Family. 1996; 58:29–310. DOI: 10.2307/353496

Astone NM, McLanahan SS. Family structure, parental practices, and high school completion. American Sociological Review. 1991; 56:309–320. http://www.jstor.org/stable/2096106.

Bachu, A. Current Population Reports, P23–197. Washington, DC: U.S. Census Bureau; 1999. Trends in premarital childbearing: 1930 to 1994.

Becker, GS. A Treatise on the Family. Harvard university press; 2009.

Blank R. Evaluating welfare reform in the United States. Journal of Economic Literature. 2002; 40:1105–1116. DOI: 10.1257/002205102762203576

Bonell C. Why is teenage pregnancy conceptualized as a social problem? A review of quantitative research from the USA and UK. Culture, Health, & Sexuality. 2004; 6:255–272. DOI: 10.1080/13691050310001643025

Brown SL. Family structure transitions and adolescent well-being. Demography. 2006; 43:447–461. DOI: 10.1353/dem.2006.0021 [PubMed: 17051822]

Burton LM. Teenage childbearing as an alternative life-course strategy in multigeneration black families. Human Nature. 1990; 1:123–143. DOI: 10.1007/BF02692149 [PubMed: 24222049]

Chapman, C.; Laird, J.; Ifill, N.; KewalRamani, A. Trends in high school dropout and completion rates in the United States, 1972–2009. U.S. Department of Education; Washington, DC: National Center for Education Statistics; 2011. (NCES 2012-006)

Cooksey EC. Consequences of young mothers' marital histories for children's cognitive development. Journal of Marriage and the Family. 1997; 59:245–261. DOI: 10.2307/353468

Ermisch JF, Francesconi M. Family structure and children's achievements. Journal of Population Economics. 2001; 14:249–270. DOI: 10.1007/s001480000028

Fletcher JM, Wolfe BL. Education and labor market consequences of teenage childbearing evidence using the timing of pregnancy outcomes and community fixed effects. Journal of Human Resources. 2009; 44(2):303–325. DOI: 10.3368/jhr.44.2.303

Fomby P, Mollborn S, Sennott CA. Race/ethnic differences in effects of family instability on adolescents' risk behavior. Journal of Marriage and Family. 2010; 72:234–253. DOI: 10.1111/j.1741-3737.2010.00696.x [PubMed: 20697458]

Foster EM. How economists think about family resources and child development. Child Development. 2002; 73:1904–1914. DOI: 10.1111/1467-8624.00513 [PubMed: 12487501]

Francesconi M. Adult Outcomes for Children of Teenage Mothers. The Scandinavian Journal of Economics. 2008; 110:93–117. DOI: 10.1111/j.1467-9442.2008.00526.x

Furstenberg, FF. Destinies of the Disadvantaged: Adolescent Mothers in Later Life. Cambridge University Press; 2007.

Furstenberg, FF.; Brooks-Gunn, J.; Morgan, SP. Adolescent Mothers in Later Life. Cambridge University Press; 1987.

Geronimus AT. Black/white differences in the relationship of maternal age to birthweight: A population-based test of the weathering hypothesis. Social Science & Medicine. 1996; 42:589–97. DOI: 10.1016/0277-9536(95)00159-X [PubMed: 8643983]

Geronimus AT, Korenman S, Hillemeier MM. Does young maternal age adversely affect child development? Evidence from cousin comparisons in the United States. Population and Development Review. 1994; 20:585–608. DOI: 10.2307/2137602

Gerstel N. Rethinking families and community: The color, class, and centrality of extended kin ties. Sociological Forum. 2011; 26:1–20. DOI: 10.1111/j.1573-7861.2010.01222.x

Haveman, RH.; Wolfe, B.; Peterson, E. Children of early childbearers as young adults. In: Maynard, R., editor. Kids having kids. Washington, DC: Urban; 1997. p. 257-284.

Hayes, CD. Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Washington, D.C: National Academy Press; 1987.

Heard HE. The family structure trajectory and adolescent school performance: Differential Effects by Race and Ethnicity. Journal of Family Issues. 2007; 28:319–354. DOI: 10.1177/0192513X06296307

Henderson DJ, Polachek SW, Wang L. Heterogeneity in schooling rates of return. Economics of Education Review. 2011; 30:1202–1214. DOI: 10.1016/j.econedurev.2011.05.002

Hofferth SL, Reid L. Early childbearing and children's achievement and behavior over time. Perspectives on Sexual and Reproductive Health. 2002; 34:41–49. DOI: 10.2307/3030231 [PubMed: 11990638]

Hoffman, SD.; Scher, LS. Consequences of teen childbearing for the life chances of children, 1979–2002. In: Hoffman, SD.; Maynard, RA., editors. Kids Having Kids. 2. Washington, DC: Urban Institute Press; 2008. p. 342-357.

Jarrett, RL.; Burton, LM. Dynamic dimensions of family structure in low-income African American families: Emergent themes in qualitative research; Journal of Comparative Family Studies. 1999. p. 177-187.http://www.jstor.org/stable/41603624

Johnson RC, Kalil A, Dunifon RE. Employment patters of less-skilled workers: Links to children's behavior and academic progress. Demography. 2012; 49:747–772. DOI: 10.1007/s13524-011-0086-4 [PubMed: 22246798]

Kantarevic J, Mechoulan S. Birth order, educational attainment, and earnings an investigation using the PSID. Journal of Human Resources. 2006; 41:755–777. DOI: 10.3368/jhr.XLI.4.755

Kiernan KE, Mensah FK. Poverty, family resources and children's early educational attainment: The mediating role of parenting. British Educational Research Journal. 2011; 37:317–336. DOI: 10.2307/591138

Klepinger D, Lundberg S, Plotnick R. How does adolescent fertility affect the human capital and wages of young women? Journal of Human Resources. 1999; 34:421–448. DOI: 10.2307/146375

Lee D. The early socioeconomic effects of teenage childbearing: A propensity score matching approach. Demographic Research. 2010; 23:697–736. DOI: 10.4054/DemRes.2010.23.25

Levine JA, Pollack H, Comfort ME. Academic and behavioral outcomes among the children of young mothers. Journal of Marriage and Family. 2001; 63:355–369. DOI: 10.1111/j.1741-3737.2001.00355.x

Levine JA, Emery CR, Pollack H. The well-being of children born to teen mothers. Journal of Marriage and Family. 2007; 69:105–122. DOI: 10.1111/j.1741-3737.2006.00348.x

Lichter DT, Sassler S, Turner R. Cohabitation, post-conception unions, and the rise in nonmarital fertility. Social Science Research. 2014; 47:134–147. DOI: 10.1016/j.ssresearch.2014.04.002 [PubMed: 24913950]

Mathews, TJ.; Hamilton, BE. Delayed childbearing: more women are having their first child later in life. 2009. Retrieved from http://blogs.sgmcb.com/glassceilinggrubbyfloor/research/NHCS%20Data%20Brief%2021%20-%20Delayed%20Childbearing.pdf

Martin SP. Diverging fertility among US women who delay childbearing past age 30. Demography. 2000; 37:523–533. DOI: 10.1353/dem.2000.0007 [PubMed: 11086577]

Mollborn S. Exploring variation in teenage mothers' and fathers' educational attainment. Perspectives on Sexual and Reproductive Health. 2010; 42:152–59. DOI: 10.1363/4215210 [PubMed: 20887284]

Raley RK, Frisco M, Wildsmith E. Maternal cohabitation and educational success. Sociology of Education. 2005; 78:144–164. DOI: 10.1177/003804070507800203

Rouse, CE. The Labor Market Consequences of an Inadequate Education. In: Belfield, C.; Levin, HM., editors. The Price We Pay: The Economic and Political Consequences of Inadequate Education. Washington: Brookings Institution Press; 2007. p. 99-124.

Sassler S, Williams K, Addo F, Frech A, Cooksey E. Family structure and high school graduation: How children born to unmarried mothers fare. Genus. 2013; LXIX:1–23. DOI: 10.4402/genus-501

Stack, C. All Our Kin: Strategies for Survival in a Black Community. Basic Books; 1974.

Su J, Dunifon R, Sassler S. Better for baby? The retreat from mid-pregnancy marriage and implications for parenting and child well-being. Demography. 2015; 52:1167–94. DOI: 10.1007/s13524-015-0410-5 [PubMed: 26126885]

United States Census Bureau. Table MS-2. Estimated Median Age at First Marriage, By Sex: 1890 to the Present. 2006

Ventura, SJ. NCHS data brief. Hyattsville, MD: National Center for Health Statistics; 2009. Changing patterns of nonmarital childbearing in the United States.

Ventura, SJ.; Bachrach, CA. National Vital Statistics Reports. Vol. 48. Hyattsville, Maryland: National Center for Health Statistics; 2000. Nonmarital childbearing in the United States, 1940–1990.

Wildsmith, E.; Steward-Streng, NR.; Manlove, J. Child Trends Research Brief, Publication #2011-29. 2011. Childbearing Outside of Marriage: Estimates and Trends in the United States.

Williams K, Sassler S, Addo F, Frech A. First-birth timing, marital history, and women's health at midlife. Journal of Health and Social Behavior. 2015; 56(4):514–533. DOI: 10.1177/0022146515609903 [PubMed: 26646744]

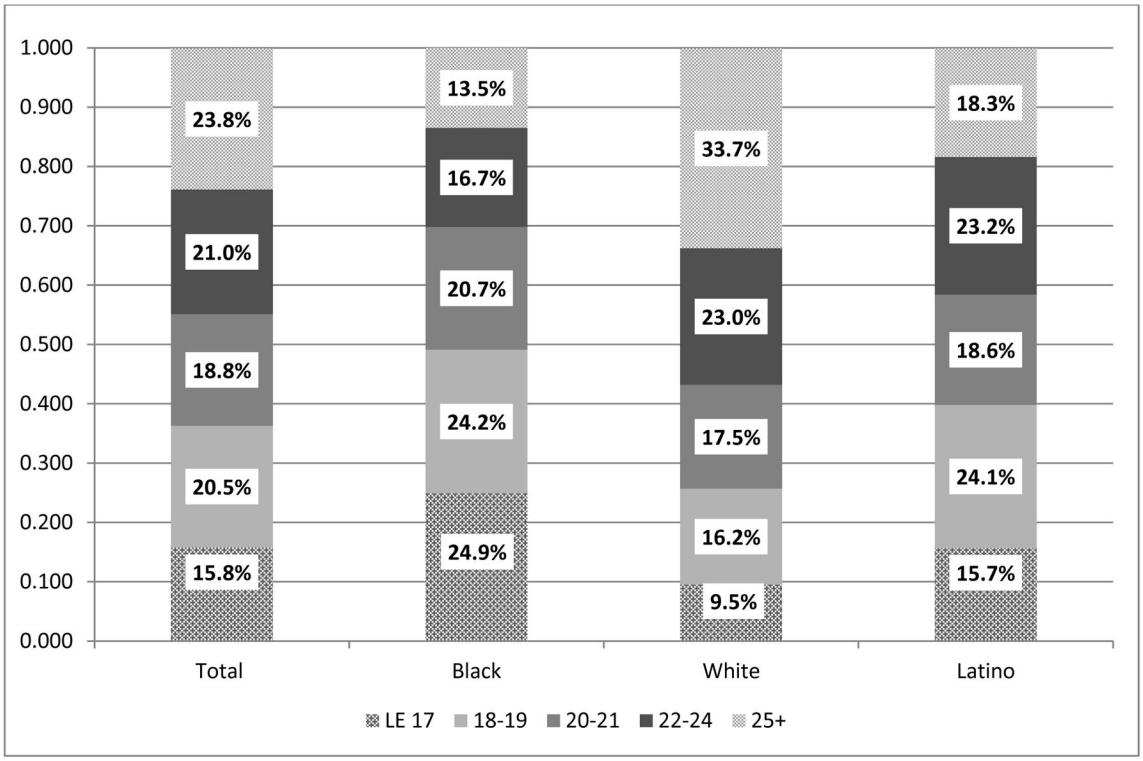

Figure 1.
Distribution of Maternal Age at First Birth, for Total and by Race/Ethnicity

Table 1

Descriptive Statistics of Mothers and Young Adults, by Maternal Age at Birth of Child and Race

Variable	Full Sample	Mother's Marital Status at Birth		Race of Respondent		
		Married	Unmarried	Black	White	Latino
Family Background Characteristics of Mother						
Youth's grandmother has HS diploma or more	0.482 (0.009)	0.551 (0.012)	0.360 (0.016)	0.410 (0.017)	0.658 (0.014)	0.213 (0.017)
Mother lived with both biological parents at age 14	0.639 (0.009)	0.725 (0.010)	0.487 (0.016)	0.467 (0.016)	0.754 (0.012)	0.654 (0.019)
Mother born in the South	0.382 (0.009)	0.344 (0.011)	0.450 (0.016)	0.467 (0.018)	0.299 (0.013)	0.435 (0.021)
Mother's cognitive ability (AFQT)	34.158 (0.495)	41.109 (0.631)	21.866 (0.665)	20.411 (0.611)	48.675 (0.718)	23.842 (0.874)
Mother's mean age at birth of young adult	21.498 (0.073)	22.630 (0.089)	19.495 (0.101)	20.213 (0.119)	22.597 (0.109)	21.09 (0.145)
Age of Mother at Respondent's Birth						
17 years old or younger	0.158 (0.007)	0.080 (0.006)	0.297 (0.014)	0.249 (0.014)	0.095 (0.008)	0.157 (0.015)
18 to 19 years	0.205 (0.007)	0.164 (0.008)	0.278 (0.014)	0.242 (0.014)	0.162 (0.010)	0.241 (0.017)
20 to 21 years old	0.188 (0.007)	0.182 (0.009)	0.198 (0.012)	0.207 (0.013)	0.175 (0.010)	0.186 (0.016)
22 to 24 years old	0.210 (0.008)	0.247 (0.010)	0.146 (0.011)	0.167 (0.012)	0.230 (0.012)	0.232 (0.017)
25 years old or older	0.238 (0.008)	0.327 (0.011)	0.081 (0.009)	0.135 (0.011)	0.337 (0.013)	0.183 (0.016)
Race/Nativity of Mother						
Black	0.326 (0.009)	0.149 (0.008)	0.639 (0.015)	1.000	--	--
Latino	0.214 (0.008)	0.236 (0.010)	0.176 (0.012)	--	--	1.000
Non-Latino White	0.460 (0.009)	0.616 (0.011)	0.185 (0.012)	--	1.000	--
Mother's Nativity: Foreign-born	0.072 (0.005)	0.087 (0.007)	0.044 (0.006)	0.018 (0.004)	0.026 (0.004)	0.251 (0.018)
Youth Indicators						
Female	0.494 (0.009)	0.489 (0.012)	0.503 (0.016)	0.503 (0.016)	0.487 (0.014)	0.494 (0.020)
Child weighed less than 5.5 pounds at birth	0.079 (0.005)	0.063 (0.006)	0.108 (0.010)	0.112 (0.010)	0.053 (0.006)	0.085 (0.012)
Graduation Status of Young Adult by Age 20						
Completed high school with a degree (0= Did not finish)	0.777 (0.008)	0.818 (0.009)	0.706 (0.014)	0.765 (0.014)	0.812 (0.011)	0.721 (0.018)
Marital Status of Mother at Youth's Birth						
R's mother had nonmarital 1st birth (0 = Marital)	0.361 (0.009)	--	1.000	0.708 (0.015)	0.146 (0.010)	0.296 (0.019)
N	2,865	1,853	1,012	933	1,319	613

Note: Standard errors in parentheses underneath means.

Table 2

High School Graduation by Age 20 Regressed on Maternal Age at First Birth and Covariates, Total Sample

	Model 1		Model 2	
VARIABLES	***B*/S.E.**	**OR**	***B*/S.E.**	**OR**
Maternal Age at 1st Birth (Ref = 25+)				
LE 17	−1.17 [0.17] ***	0.31	−1.06 [0.18] ***	0.35
18–19	−0.87 [0.16] ***a	0.42	−0.79 [0.17] ***	0.45
20–21	−0.60 [0.17] ***a	0.55	−0.55 [0.17] **a	0.58
22–24	−0.62 [0.16] ***a	0.54	−0.59 [0.17] *** a	0.55
Mother's Attributes				
R's grandmother completed HS	0.09 [0.11]	1.10	0.08 [0.11]	1.08
Respondent lived with both parents at age 14	0.24 [0.10] *	1.28	0.22 [0.10] *	1.25
Respondent's mother born in the South	−0.07 [0.11]	0.94	−0.06 [0.11]	0.94
Respondent's mother's cognitive ability (AFQT)	0.02 [0.00] ***	1.02	0.02 [0.00] ***	1.02
R's mother was foreign-born (0 = native born)	0.41 [0.20] *	1.50	0.38 [0.20]	1.46
Race				
Black (non-Latino White)	0.45 [0.13] ***	1.57	0.61 [0.14] ***	1.84
Latino	−0.05 [0.14]	0.95	−0.03 [0.14]	0.98
Youth's Attributes				
Respondent female (0 = male)	0.56 [0.10] ***	1.76	0.57 [0.10] ***	1.76
Respondent born low birth weight (0 ≥ 5.5 lbs)	−0.28 [0.16]	0.76	−0.26 [0.16]	0.77
Born to unmarried mother (0 = married mother)Born to unmarried mother (0 = married mother)	---	---	−0.36 [0.12] **	0.70
Constant	0.86 [0.21] ***		0.93 [0.21] ***	
−2 log likelihood	−1165.8		−1128.4	
Pseudo R2	0.059		0.060	
Chi2	146.3		143.4	
Observations	2,865		2,865	

Note:

*** p<0.001,

** p<0.01,

* p<0.05; Standard errors in brackets

[a] Significantly different from Maternal Age at First Birth < 18, p 0.05.

Table 3

High School Graduation by Age 20 Regressed on Maternal Age at First Birth and Covariates, by Race

	Non-Latino Black		Non-Latino White		Latino	
	Model 1		Model 1		Model 1	
VARIABLES	***B*/S.E.**	**OR**	***B*/S.E.**	**OR**	***B*/S.E.**	**OR**
Maternal Age at 1st Birth (Ref = 25+)						
LE 17	−1.24 [0.39] ***c*	0.29	−1.03 [0.26] ****d*	0.36	−1.24 [0.37] ****d*	0.29
18–19	−1.18 [0.38] **c*	0.31	−0.59 [0.24] *	0.56	−0.85 [0.35] *	0.43
20–21	−0.57 [0.40] *a,b,d*	0.56	−0.59 [0.23] *	0.56	−0.78 [0.36] **a*	0.46
22–24	−1.35 [0.39] ****c,e,f*	0.26	−0.35 [0.22]	0.71	−0.51 [0.35]	0.60
Mother's Attributes						
R's grandmother completed HS	0.08 [0.19]	1.09	0.29 [0.16] *f*	1.34	−0.49 [0.26]	0.61
Respondent lived with both parents at age 14	0.33 [0.17]	1.39	0.31 [0.16]	1.37	−0.10 [0.20]	0.91
Respondent's mother born in the South	0.02 [0.19]	1.02	−0.20 [0.16]	0.82	−0.01 [0.21]	0.99
Respondent's mother's cognitive ability (AFQT)	0.03 [0.01] ***	1.03	0.01 [0.00] **	1.01	0.02 [0.01] ***	1.02
R's mother was foreign-born (0 = native born)	0.12 [0.80]	1.13	0.78 [0.62]	2.19	0.40 [0.23]	1.50
Youth's Attributes						
Respondent female (0 = male)	0.94 [0.17] ****e*	2.56	0.37 [0.15] *	1.44	0.44 [0.19] *	1.55
Respondent born low birth weight (0 ≥ 5.5 lbs)	−0.64 [0.24] ***	0.53	−0.13 [0.32]	0.88	0.19 [0.35]	1.21
Born to unmarried mother (0 = married mother)	−0.24 [0.21]	0.79	−0.47 [0.19] *	0.63	−0.35 [0.21]	0.71
Constant	1.38 [0.42] **		1.051 [0.286] ***		1.12 [0.40] **	
−2 log likelihood	−366.4		−490.1		−257.0	
Pseudo R2	0.057		0.064		0.078	
Chi2	44.4		67.4		43.5	
Observations	933		1,319		613	

Note:

*** p<0.001,

** p<0.01,

* p<0.05

[a] Significantly different from Matemal Age at First Birth LE 17, $p < 0.05$.

[b] Significantly different from Matemal Age at First Birth 18–19, $p < 0.05$.

[c] Significantly different from Matemal Age at Firth Birth 20–21, $p < 0.05$.

[d] Significantly different from Matemal Age at Firth Birth 22–24, $p < 0.05$.

[e] Significantly different from non-Latino White, $p<0.05$

[f] Significantly different from Latino , $p<0.05$