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Teenage Childbearing Among Youth Born to Teenage Mothers

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Abstract

Using data from the National Longitudinal Survey of Youth, this article examined how early maternal characteristics, an adolescent's family environment, and the adolescent's own attitudes and behaviors were associated with the odds of a nonmarital teenage birth among youth born to teenage mothers. Multivariate analyses indicated that these domains were closely linked. Early maternal characteristics shaped the later family environment of adolescents (parenting quality and home environment), which, in turn, was associated with the attitudes and behaviors of teens that put them at risk of a nonmarital birth. Notably, there was variation in some of the associations by gender. Increased mother's cognitive ability lowered the risk of a nonmarital birth for boys, but not for girls, whereas fertility expectations were significant for girls, but not for boys. There were no race-ethnic differences in the risk of a teenage birth among girls, although Black boys had a higher risk than White boys.

Keywords

teenage childbearing; intergenerational transmission; risk factors

Introduction

Teenage childbearing, particularly nonmarital teenage childbearing, remains a critical issue on the national public policy agenda (Furstenberg, 2003). Teenage mothers experience considerable short-term socioeconomic disadvantage compared with women who delay childbearing, in part because of lower levels of schooling and marriage and poorer employment prospects (Hoffman & Maynard, 2008). Children of teen mothers, in turn, have poorer birth, cognitive, and behavioral outcomes than do children born to older mothers (Hoffman & Maynard, 2008). An extensive body of knowledge has accumulated on the correlates of teenage childbearing among U.S. youth (Kirby, Lepore, & Jennifer, 2005).

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Despite this knowledge, rates of teenage childbearing in the United States remain stubbornly high compared with rates in other western, industrialized countries (Furstenberg, 2003). In 2007, for example, teenage childbearing rates in the United States were nearly two times higher than in the United Kingdom, which has the highest rates in Europe (Hoffman & Maynard, 2008).

Focusing on adolescents particularly at risk of a teenage birth, however, may provide additional information for policies and programs designed to reduce teenage childbearing. Resiliency theory is predicated on the understanding that various risk and protective factors will help at-risk adolescents avoid a negative outcome or will promote a positive outcome. However, these same factors may not have similar effects on individuals with a lower risk of the event occurring (Fergus & Zimmerman, 2005).

One factor consistently associated with an increased risk of teen childbearing among adolescents is having been born to a teenage mother, an association known as the intergenerational transmission of teenage childbearing (Meade, Kershaw, & Ickovics, 2008). Notably, prior research finds that children of teenage mothers are uniquely vulnerable to the effects of some risk factors on their own risk of teenage childbearing, such as low parental monitoring and poverty (Meade et al., 2008). Limited research, however, looks exclusively within this at-risk population.

Focusing on the risk of teenage childbearing among boys as well as girls may be informative, as fertility decisions are affected by characteristics of fathers as well as of mothers (Seltzer et al., 2005). In addition, prior research finds that background and family characteristics are differentially associated with the sexual risk behaviors of boys and girls (Kirby et al., 2005), suggesting that different factors may promote resilience for at-risk boys than for at-risk girls (Fergus & Zimmerman, 2005). However, research on teenage childbearing has disproportionately examined girls, and when it has examined boys, it has been limited to fairly select samples (Barber, 2001b; Campa & Eckenrode, 2006; Pogarsky, Thornberry, & Lizotte, 2006).

This article aims to extend our current understanding of teenage childbearing by focusing our analyses on adolescents at increased risk for a teenage birth: firstborn children of teenage mothers. Using data from the linked National Longitudinal Survey of Youth 1979 cohort (NLSY79) mother-child data file, we examine three sets of factors across the life course that might promote or reduce the risk of a nonmarital teenage birth. Specifically, we examine whether and how early maternal characteristics, the adolescent's family environment, and the youth's own attitudes and behaviors during adolescence are associated with teenage childbearing. In addition, we examine whether these associations are moderated by gender.

Literature Review

In this article we explore three sets of assets (factors residing within an individual) and resources (factors external to an individual) that are expected to either promote or reduce the risk of teenage childbearing among youth at increased risk of a teenage birth (Fergus &

Zimmerman, 2005). These are early maternal characteristics, the adolescent's family environment, and the adolescent's own attitudes and behavior. Life course theory emphasizes the importance of social context, such as the family, for individual development (Elder, 1998). Thus, we focus on external resources at the parental/family level. Life course theory also emphasizes the importance of these contexts over time (Elder, 1998), recognizing, for example, that a youth's family environment is part of a trajectory that begins at birth. Thus, we focus on maternal characteristics at the time of the birth, as well as on the family environment of youth during their adolescence.

Each set of characteristics is expected to be directly associated with an adolescent's risk of a nonmarital teenage birth. However, early maternal characteristics are also expected to operate indirectly through the adolescent's family environment and the youth's attitudes and behaviors in adolescence. In addition, the adolescent's family environment is expected to operate indirectly by influencing the youth's attitudes and behaviors. In other words, we expect that the experiences of teen mothers at the birth of their child will help shape the adolescent's later family context which, in turn, will influence the attitudes and behaviors of the adolescent. We discuss each of these sets of characteristics in more detail below.

Early Maternal Characteristics

We examine the role of four early maternal characteristics that we expect to be associated with the later risk of teenage childbearing among children born to teenage mothers. These are marital status at birth, cognitive ability, and two demographic characteristics: age at teen birth and race-ethnicity.

Marital status.—Married teen mothers are less likely than unmarried teen mothers to have offspring who themselves become young parents (Campa & Eckenrode, 2006). Children born to married parents experience less economic instability and less family turbulence than do children born to unmarried parents, factors associated with a decreased risk of early sexual activity and childbearing (Wu & Thomson, 2001).

Cognitive ability.—Lower levels of maternal education and/or cognitive ability are associated with an adolescent's increased risk of teenage childbearing, regardless of maternal age at birth (Meade et al., 2008; Pogarsky et al., 2006). The reasons for this association include the increased risk of poverty and limited life options of these mothers (Coley & Chase-Lansdale, 1998). Even among adolescent parents, however, maternal intelligence is positively associated with cognitive readiness to parent and positive parenting practices (O'Callaghan, Borkowski, Whitman, Maxwell, & Keogh, 1999), which in turn are associated with the child's later risk of a teen birth (see below).

Demographic factors.—There is evidence that being aged 18 or 19 at birth is qualitatively different than being aged 17 or younger. For example, daughters of younger teen mothers are more likely to have their own teen birth compared with daughters of older teen mothers, in part, because these very young mothers are even less likely to finish school (Haveman, Wolfe, & Peterson, 2008). Race-ethnicity is also associated with variation across many important, often unmeasured, characteristics that put women and their children at

continued risk of disadvantage (e.g., wealth, discrimination, and school/neighborhood context, South & Baumer, 2000). In addition, research suggests that early nonmarital childbearing may be more normative among Black and Hispanic youth than among White youth (East, 1998). For both these reasons, we expect that Black and Hispanic children of teen mothers will have higher levels of teenage childbearing compared with White children of teen mothers.

Adolescent's Family Environment

Three areas of an adolescent's family environment are strongly linked to the resilience of youth: socioeconomic resources, family structure, and parenting quality (Bogenschneider & Olson, 1998). We expect that these factors will serve as pathways through which maternal characteristics are linked with adolescent childbearing.

Socioeconomic resources.—The link between teen parenthood and socioeconomic status is well documented and is posited to exist for a number of reasons, including the educational and career trajectories of youth, school quality, availability of role models, and availability of enrichment opportunities (Meade et al., 2008). Socioeconomic disadvantage during adolescence may be particularly important. For example, Furstenberg, Levine, and Brooks-Gunn (1990) find that recent welfare receipt by the mother when her firstborn offspring was 13 to 18 years old is a more important predictor of early parenthood than welfare receipt during childhood. Critical to our study is recent research finding that poverty is an especially strong predictor of teen motherhood for daughters of teenage mothers (Meade et al., 2008).

Family structure.—Research generally finds that among all youth, those who grow up in stable two-parent households are less sexually active and less likely to have a teen birth than are those who grow up in alternative family structures or experience high levels of turbulence (Kirby et al., 2005). These associations are posited to exist for several reasons: money, time, and stress. Consistently married two-parent families tend to have more economic resources and more economic stability than do other family types or families with high levels of turbulence (McLanahan & Percheski, 2008). Two parents also have more time to spend with and are better able to monitor the behavior of their children (McLanahan & Percheski, 2008). Finally, changes in family structure, whether through formation or dissolution of a union, can generate stress for parents and for children (McLanahan & Percheski, 2008). These associations are likely to also be true in households started by teenage mothers.

Living with a parent is a key adaptive strategy among some teen mothers, as grandparents can be a source of additional time, money, and emotional support (Coley & Chase-Lansdale, 1998). Grandparents often fulfill childcare responsibilities for their adult children (Pebley & Rudkin, 1999), and their presence in the earlier years of teen parenting has been found to be associated with a lower risk that their grandchildren will go on to have a teen birth (Horwitz, Klerman, Kuo, & Jekel, 1991). Although grandparent parenting is warmer and more positive when they coreside with a daughter who was a teen parent (vs. live outside the home), grandparents can also be a source of conflict when living with their older daughters and

grandchildren (Coley & Chase-Lansdale, 1998). Thus, it is possible that the presence of grandparents in the household during adolescence may, in fact, increase the risk of teenage childbearing.

Parenting quality.—High quality parenting incorporates aspects of parental monitoring, consistency and warmth, and cognitive involvement (Bogenschneider & Olson, 1998). Compared with older mothers, teenage mothers are less effective parents (Whitman, Borkowski, Keogh, & Weed, 2001) and provide less stimulating home environments (Coley & Chase-Lansdale, 1998). Teen mothers who do provide emotionally supportive and cognitively stimulating home environments, however, have children with fewer behavior problems and better cognitive outcomes than teen mothers who provide lower quality home environments (Luster & Dubow, 1990). In fact, recent research suggests that high quality parenting, at various stages in the child's life, mediates the intergenerational transition of teenage childbearing (Campa & Eckenrode, 2006; Meade et al., 2008).

Adolescent Attitudes and Behaviors

An array of individual assets is associated with the resilience of youth, including school connectedness, feelings of self-worth, the engagement in antisocial/delinquent behaviors, and religious behavior (Bogenschneider & Olson, 1998; Fergus & Zimmerman, 2005). We hypothesize that these assets will differentiate firstborn children of teen mothers who do and do not go on to have a nonmarital teen birth of their own.

School connectedness.—High educational expectations are an important component of school connectedness and likely reflect belief in a more normative transition to adulthood, where childbearing comes after school completion. Empirically, research consistently finds high educational expectations are associated with delayed parenthood (Kirby et al., 2005). However, some women, particularly disadvantaged and minority women, are more likely to expect that they will have an early birth (East, 1998). In turn, women who expect an early birth or have an early ideal age at first birth are significantly more likely to have an early birth (South & Baumer, 2000). We expect that high educational expectations will protect against the risk of a teenage birth, although we also expect that adolescents who think early childbearing is more normative will have an increased risk.

Self-worth and antisocial behaviors.—Depressed youth have low levels of self-worth and hopefulness. Analyses of the children born to early childbearers suggest that depression is more common among sexually active young women relative to abstainers (Kowaleski-Jones & Mott, 1998). In addition, depression is associated with failing to use contraceptives and with becoming a teen parent, for both boys and girls (Kowaleski-Jones & Mott, 1998), although one study found this relationship disappeared after controlling for school performance (Meade et al., 2008). Engaging in delinquent or antisocial activities is also associated with early adolescent sexual activity and adolescent parenthood (Kirby et al., 2005). Alcohol and substance use have a particularly strong association with teenage childbearing and appear to operate by leading to riskier sexual behaviors among adolescents (Pears, Pierce, Kim, Capaldi, & Owen, 2005).

Religious behavior.—Religious commitment has been found to promote resilience in youth by imparting a sense of security and meaning in life (Bogenschneider & Olson, 1998). The link between religion and teenage childbearing, however, is unclear. Research reports strong negative associations between parent and adolescent religiosity—namely, church attendance and valuing the role of religion in one’s life—and the likelihood of being sexually active in adolescence (Rostosky, Wilcox, Wright, & Randall, 2004). This relationship may be due to the more negative view organized religions tend to hold on the consequences of having early sex (Rostosky et al., 2004). However, once teens become sexually active, stronger religiosity is associated with reduced contraceptive use (Manlove, Logan, Moore, & Ikramullah, 2008).

Gender Differences

Most research on teenage childbearing focuses on girls; however, research that does look at boys and girls finds important differences. First, although having a teenage mother increases the risk of teenage childbearing for both boys and girls, this association is substantially weaker for boys than for girls (Campa & Eckenrode, 2006). Second, some of the mediators in the intergenerational transmission of childbearing vary by gender (Barber, 2001b; Campa & Eckenrode, 2006; Kowaleski-Jones & Mott, 1998; Pogarsky et al., 2006). For example, Pogarsky et al. (2006) and Barber (2001b) both find that maternal education is an important mediator for boys, but not for girls. Alternatively, Campa and Eckenrode (2006) find that the home environment and the presence of a father figure are important for girls, but not for boys. This suggests that different processes shape the risk of teenage childbearing for boys and girls, although why this is the case remains unclear. We examine whether, and how, gender moderates the association between each of our primary independent variables and the risk of a nonmarital teenage birth.

Method

Data

Analyses used data from the linked NLSY79 and the Children and Young Adult files (NLSY-CYA). The NLSY79 is a nationally representative, longitudinal survey that includes 12,686 men and women who were between the ages of 14 and 22 in 1979. The NLSY-CYA started in 1986 and collected data on all children born to females in the original NLSY79 sample. Starting in 1988, all children age 10 and older completed self-administered questionnaires, and starting in 1994 all children over age 14 completed “young adult” self-administered questionnaires. The linked dataset includes extensive fertility, marital history, and sociodemographic characteristics of both the NLSY79 respondents and their children (Bureau of Labor Statistics, 2006).

Through 2002, the NLSY-CYA consisted of 11,340 children born to 6,283 women (Bureau of Labor Statistics, 2006). We limited the sample in several ways. First, 905 children from the poor White oversample were dropped by the NLSY in 1990, and therefore did not fill out surveys in later years; these children were excluded from our sample (Bureau of Labor Statistics, 2006). Second, because we are interested in firstborn children of teen mothers, we omitted 6,450 children who were not firstborn and 2,686 who were not children of teen

mothers, resulting in 1,299 children eligible for inclusion. Finally, we excluded 288 cases (22% of the remaining sample) without a completed young adult interview at age 15 or older ($N = 178$), information on the dependent variable ($N = 6$), or a completed child self-administered survey between the ages of 10 and 14 ($N = 104$). This resulted in a final working sample of 1,011 firstborn children of teenage mothers (506 females and 505 males).

The 288 children who were dropped from the sample did not differ from those who remained in our sample on critical sociodemographic characteristics such as sex, mother's race-ethnicity, mother's marital status at their birth, or mother's Armed Forces Qualification Test (AFQT) score. However, they were more likely to have a mother who was 17 or younger at their birth, compared with those children who remained in the sample (54% vs. 43%).

Measures

Nonmarital teen birth.—At each survey round in the young adult module (beginning at age 14), respondents were asked to provide detailed fertility information for births occurring since the previous round in which they participated. The dependent variable was measured as the date (in months) of a first teen nonmarital birth.

As seen in the top row of Table 1, almost one quarter of the sample (24%) had a nonmarital teen birth during the study period, including 31% of females and 16% of males. Descriptive statistics on the independent variables, described below, are also shown in Table 1.

Early maternal characteristics.—Four variables measured the adolescent's mother's race-ethnicity (comparing those who were Hispanic or Black with those who were White); whether the mother was 17 or younger at the child's birth (compared with 18 or 19); whether the mother was married prior to the child's birth; and the mother's cognitive ability. The AFQT was used to measure the cognitive ability of teenage mothers. The AFQT is a composite score based on four components: arithmetic reasoning (AR), mathematics knowledge (MK), paragraph comprehension (PC), and word knowledge (WK) and is reported as a percentile (range 1–99). Analyses included AFQT scores as a continuous measure. Due to high correlation with AFQT, we decided to exclude a measure of mother's education.

Adolescent's family environment.—Four variables measured the family environment of the child during their adolescence. Importantly, these variables were measured when the child was age 14 (or just prior), and therefore, prior to the period of risk of a teenage birth for the vast majority of teenagers.

A categorical measure of the family structure of the mother when the child was age 14 was included. This measure compared single mothers living alone with mothers living with the biological father of the child, living with some other man, living with *their* own mother, or living in some other situation. Socioeconomic resources were measured with a variable indicating whether or not the mother received AFDC at any time while the child was 10 to 14 years old. A continuous measure of the child's Home Observation Measurement of the Environment-Short Form (HOME-SF) total percentile score, measured at the survey round

when the respondent was as close to, but not over, age 14 as possible was used to measure parenting quality. The HOME-SF scale is an age-appropriate measure of the home environment based on mother report and interviewer observation, and covers important parenting domains such as the warmth of the mother's parenting, the cognitive stimulation available in the home, and appropriate discipline practices (Center for Human Resource Research, 2004). One last continuous variable measured the number of surveys the child did not live with his or her mother (ranging from 0 to 2). This variable serves as a rough indicator of family turbulence.

Adolescent attitudes and behaviors.—Drawing from adolescent self-reports, six variables were used to capture the individual attitudes and behaviors of adolescents. As above, these variables were measured as close to age 14 as possible, just prior to the adolescent's period of risk for a teenage birth. If data were not available at age 14, they were taken from the survey round closest to when he or she was 14 (not older than 14 or younger than 10).

Educational expectations were measured with one variable identifying adolescents who aspired to get at least a college degree (1 = *yes*). An additional indicator of life expectations identified whether the adolescent thought the best age to have a first child was age 25 or younger (1 = *yes*). A continuous scale of youth depression was created from three items (how often the child feels unhappy, sad, or depressed; how often the child feels worthless or inferior; and how often the child complains no one loves him or her) in the Behavior Problems Index (BPI). These were measured at age 14, each ranging from 0 (*never*) to 2 (*often*), and were averaged to create a depression scale ($\alpha = .67$).

Two variables measured delinquency and engagement in risky behaviors. First, a mutually exclusive categorical variable measured the most serious type of substance the adolescent had ever used, where 0 = *never used any substance*, 1 = *used tobacco*, 2 = *drank alcohol*, and 3 = *used illegal drugs*. If an adolescent used multiple substances, he or she was placed in the category indicating the most serious substance used. Second, an eight-item summative index measured both the type and frequency of risky behaviors in which the adolescent had participated within the last year. Behaviors such as hurting someone badly enough to need bandages or a doctor and skipping school without permission were included in the index. The adolescent reported the frequency of each behavior, ranging from 0 (*never*) to 3 (*more than twice*), for a maximum score of 24.

Finally, a variable indicating how often a youth attended religious services in the last year (never, a few times, once a month, two to three times a month, once a week, more than once a week) was included as a continuous measure.

Controls.—Several measures were included as controls in the analyses. A dummy variable indicated the adolescent's gender (1 = *male*). A continuous measure indicated the national teen birth rate for 15 to 17 year olds for the year in which the child was 13. This variable was included because respondents reached their teenage years between 1986 and 1997, and during this time period, the teen birth rate changed fairly substantially. Lastly, a continuous measure of the adolescent's BPI, measured as close to age 10 as possible, was included. The

BPI was designed to measure the incidence and type of behavior problems in a child age 4 or older, and consists of internalizing (such as crying or clinging to adults) and externalizing (such as arguing or breaking things) behavior problems (Center for Human Resource Research, 2004). We included this measure to help account for negative behaviors among offspring of teen parents prior to adolescence.

Analytic Approach

We first used life-table techniques to examine the bivariate relationship between each independent variable and the likelihood of a nonmarital teen birth. Variables that were coded continuously for our multivariate models were coded categorically for bivariate lifetable analyses.

We next used Cox proportional hazard models to produce exponentiated hazard ratios, showing which characteristics were associated with the risk of a nonmarital teenage birth, net of controls. Respondents who were married before they had a birth (6%), who reached age 20 without having a teen birth or marriage (65%), or who did not have a teen birth by the time of their most recent interview before age 20 (5%) were right-censored. We sequentially added early maternal characteristics, adolescent family characteristics, and adolescent behaviors/attitudes to the models. This approach allowed us to examine the direct and indirect relationships between these measures and the risk of a nonmarital first birth. These analyses were weighted and run in Stata. We tested all predictive variables for interactions with gender.

Results

Bivariate Analyses

Table 2 presents results from the lifetable analyses, showing the probability of having a nonmarital teen birth by each characteristic expected to either promote or reduce the risk of a teen birth. Measures from each set of individual assets and family-based resources were associated with the probability of a teen birth among at-risk youth. Of the early maternal characteristics, being Black and having a mother who was under age 17 at birth, unmarried at birth, and with an AFQT score in the seventh percentile or lower all increased the probability of having a nonmarital teenage birth by the end of the study period. Of characteristics measuring the adolescent's family environment, living with a single mother was associated with a greater probability of a teen birth compared with those in alternative family structures. In addition, having a mother who received AFDC and having a HOME-SF score below 43% increased the probability of a nonmarital teenage birth.

Of the adolescent's attitudinal and behavioral measures, having high educational aspirations was associated with a lower probability of a teen birth, while thinking the best age to have a child was 25 or younger was associated with an increased probability. Young adults who had ever drunk alcohol had a greater probability of a teen birth than those who had never used any substances, and respondents who had higher scores on the risky behaviors index also had a higher probability of a teen birth.

Multivariate Analyses

Table 3 reports the results of the stepwise multivariate Cox regressions. All models included controls for gender, the teen birth rate, and the behavior problem index measured at age 10.

Model 1 looked explicitly at the role of early maternal characteristics, net of controls. Of these measures, only mother's cognitive ability retained a significant association with the odds of a teen birth, whereas mother's marital status was marginally significant. Youth whose mothers were married at their birth were only 71% as likely as those whose mothers were unmarried to have a nonmarital teen birth. Each 1% increase in mother's AFQT score was associated with a 1% reduction in the odds of a teen birth.

Model 2 added measures of the adolescent's family environment. Of these measures, family structure and the quality of the home environment were significantly associated with the odds of a nonmarital teen birth. Interestingly, youth who lived with two biological parents had no lower risk of a teen birth than did youth who lived with a single mother. However, adolescents who lived with a stepparent or had a grandparent in the household were almost half as likely to have a teen birth as were youth who lived with single mothers. Higher HOME-SF scores, reflecting higher levels of parental warmth and involvement, were associated with reduced odds of a teen birth. As expected, the inclusion of these adolescent family measures did, in fact, attenuate the association between early maternal characteristics and the odds of a teen birth.

Model 3 added the adolescent's attitudes and behaviors. Of the seven measures, three were significantly associated with the risk of a nonmarital teen birth. Respondents who used alcohol, but not illegal drugs, had almost 50% greater odds of a nonmarital teen birth than respondents who used no substances. Respondents who agreed that the best age to have children was 25 years or younger had 63% greater odds of a nonmarital teen birth than those who disagreed with this statement. Finally, a higher score on the risky behaviors index was associated with marginally greater odds of a nonmarital teen birth. Again, as expected, including these measures in the model attenuated the association between HOME-SF score and the risk of a teen birth, suggesting that the home environment and parenting quality work, in part, by shaping the attitudes and behavior of youth.

Table 4 shows results from analyses exploring the moderating effect of gender on the risk of a teen birth. Black males had marginally greater odds of a birth than White males, while race differences were insignificant for females. Mother's AFQT score was associated with lower odds of a teen birth for males, but not for females, with each one percentage point increase in AFQT score reducing the odds of a teen birth by 2%. Lastly, for female respondents only, those who thought the best age to have a child was 25 or younger had almost twice (1.96) the odds of a teen birth than those who disagreed with the statement.

Discussion

Youth born to teenage mothers are at increased risk of becoming teen parents themselves (Barber, 2001b; Campa & Eckenrode, 2006; Meade et al., 2008; Pears et al., 2005; Pogarsky et al., 2006). In our sample of firstborn youth of teen parents, roughly 32% of females and

16% of males went on to have a nonmarital teenage birth themselves. The goal of this article was to identify the family-based resources and individual assets that might buffer against this risk. Specifically, we examined the role of early maternal characteristics, an adolescent's family environment, and an adolescent's own attitudes and behaviors, and tested to see if gender moderated any of the observed associations.

Early Maternal Characteristics

Two early maternal characteristics—marital status at birth and mother's cognitive ability (AFQT)—were associated with the odds of a teen birth, but appeared to operate indirectly through the adolescent's family environment. This is not surprising. Marital status at birth is associated with family structure in adolescence, which, in turn, has been linked with a range of youth risk behaviors, including sexual activity and contraceptive use (Kirby, 2002). Married parents also tend to have more time and resources to spend on their children than do unmarried mothers (Wu & Thomson, 2001), likely resulting in better quality parenting throughout the child's life. Similarly, a mother's early cognitive ability has been linked to her parenting skill, particularly early in the life course of her child (O'Callaghan et al., 1999). Here, we also see evidence that it differentiates between children of teenage mothers, particularly sons, through parenting and home quality in adolescence.

Adolescent's Family Environment

Family structure in adolescence and parenting/home quality were both associated with the odds of a teen birth. Parenting/home quality appears to operate indirectly, as its association was attenuated once engagement in risky behaviors and fertility expectations were added to the model. This is discussed in more detail in the following section.

Family structure during adolescence, however, retained a significant association with the risk of a teenage birth in the final model, though not as expected. In our analyses, children living with two biological parents during adolescence had no lower risk of teenage childbearing than those living with a single mother. The reasons why remain unclear, although married biological parents in this sample likely differ from the general population of married biological parents in important ways. For example, their especially young age at marriage may mean that they were not particularly advantaged (in terms of socioeconomic resources) relative to unmarried parents. In contrast, the addition of another male or having a grandmother present is clearly associated with reduced odds of a nonmarital teen birth. This may reflect the beneficial addition of resources (time and money) to the home. In her study of youth in disadvantaged neighborhoods, Moore (2003) argues that alternative household structures may provide a stability and dependability that is not present among youth in less disadvantaged neighborhoods. This same logic may apply to our sample, as they are more disadvantaged than the general population.

Adolescent's Behaviors and Attitudes

Engagement in risky behaviors and alcohol use increased the risk of a teenage birth for both boys and girls born to teenage mothers. Although we cannot identify why, research suggests that alcohol/substance use and engagement in risky behaviors reflect a general inclination to take risks (or to be in an environment that encourages risky behavior) and lower inhibitions

and rational decision making (Kirby, 2002). The fact that our parental and home quality measure was reduced to insignificance when these behaviors were included suggests that the environment in which children live is particularly important in protecting against risks of all kinds. This is consistent with previous work on the resilience of youth that finds that parental relationships, and parental monitoring in particular (knowing where kids are, who they are with, what they are doing), are central to children's well-being across a variety of outcomes (Bogenschneider & Olson, 1998).

Researchers note that children at high risk of having a teenage birth disproportionately grow up in environments that hold more tolerant attitudes toward early childbearing and may be modeling the fertility behaviors of their role models, including their own mothers and peers (Meade et al., 2008). In this article, we see that, even among daughters of teenage mothers (though not sons), fertility expectations strongly distinguished between those who went on to have an early birth and those who did not, net of other factors. This suggests that even at-risk youth who think childbearing should start later in the life course are able to delay childbearing. It is unclear why this is the case, but youth who hold less tolerant views toward childbearing are more likely to hold more tolerant views toward competing alternatives to fertility, such as careers and the desire for luxury goods (Barber, 2001a). It is possible that other neighborhood, family, school, or peer group socialization processes, not measured here, may work to support a perspective on the transition to adulthood that differs from what youth witnessed in their own household.

Gender as a Moderator

Several important gender differences in the likelihood of having a teenage birth emerged in these analyses, including the above-mentioned fertility expectations. In addition, maternal cognitive ability was associated with the risk of a birth for boys, but not for girls. Prior work has found that boys' fertility behavior seems to be particularly sensitive to maternal cognitive ability (Pogarsky et al., 2006). In this article, we see that this same relationship extends to children of teen mothers. However, why boys should be more strongly influenced by maternal cognitive ability than girls is unclear and should be a focus of future research.

It was also the case that boys with Black mothers had a marginally higher risk of a teen birth compared with boys with White mothers, whereas, contrary to expectations, there were no race-ethnicity differences among girls. The lack of a significant race difference among girls suggests that any unmeasured factors associated with the risk of a teenage birth (e.g., norms or a cultural orientation more tolerant of a teenage birth, neighborhood poverty) exist across all women in this sample, and are not necessarily unique to Black or Hispanic women. Thus, while race-ethnicity affects the likelihood of one's selection into this at-risk group, it does not distinguish among women within this group. In contrast, we do see a marginal difference among men. Some previous qualitative research suggests that young Black men in poor neighborhoods gain social capital through fatherhood, despite playing a limited role in their children's lives (Anderson, 1990), perhaps creating an incentive for teen births in this population. Ultimately, this research lends support to the assertion that the assets and resources that affect at-risk youth differ, at least to some extent, for men and women (Campa & Eckenrode, 2006; Pogarsky et al., 2006).

Limitations and Conclusions

This study has some limitations. Although we measure the fertility outcomes of males, we must keep in mind that male reports of fertility histories tend to be less reliable than female reports (Joyner, Peters, Sikora, Hynes, & Rubenstein, 2010). Males may be less likely to identify teenage births, particularly if they were unknown, unintended, or if the males remain uninvolved in the child's life. Nonetheless, we are one of the first studies to examine teenage childbearing among at-risk male youth with a nationally representative sample. Second, we do not have information on the sexual partners of the at-risk adolescents. Yet, an increasing body of research highlights the importance of characteristics of the couple, as well as of each partner, on sexual behaviors and fertility outcomes (Seltzer et al., 2005). We are, however, able to include a wide array of factors, measured at the individual and family level, across the life course of the youth. Finally, we do not examine the role of other important social contexts that may shape both an adolescent's family environment and engagement in risky behavior, such as the media, the neighborhoods they live in, and the schools they attend. In some cases this information is not available, in others it is beyond the scope of this article. However, future work should look more closely at these issues.

Despite these limitations, we have identified important family and individual characteristics that distinguished between firstborn children of teenage mothers. One actionable finding is that even among children at risk, those who grew up in households with high quality parenting and home environment displayed fewer individual behaviors and attitudes that increased their risk of a birth. While parents are challenging to recruit and engage in programs, parenting skill can be taught (Terzian & Mbwana, 2009). Greater access to programs that help to improve parenting and family relations may reduce the risks faced by the next generation.

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Table 1. Unweighted *N*s and Weighted Percentage or Mean Value of Independent Variables, by Gender

Variable	Full sample ^a		Females		Males	
	<i>N</i>	Weighted % or mean	<i>N</i>	Weighted % mean	<i>N</i>	Weighted % or mean
Dependent variable						
Teen nonmarital birth	278	24.1 ****	175	31.5	103	16.4
Early maternal characteristics						
Race-ethnicity						
Non-Hispanic White	326	60.1	168	61.9	158	58.2
Hispanic	226	10.3	115	10.3	111	10.3
Non-Hispanic Black	459	29.6	223	27.8	236	31.6
Aged 17 or younger at birth of child	472	42.9	247	44.7	225	40.9
Married at birth of child	417	54.0	208	55.7	209	52.2
AFQT percentile score, (1–96)	978	30.2	486	30.3	492	30.1
Adolescent's family environment						
Mother's residence at child age 14						
Mother only	323	26.2	149	24.4	174	28.2
Mother and biological father	221	25.9	108	24.5	113	27.4
Mother and other man	329	35.6	176	38.6	153	32.4
Single mother and grandmother	68	6.1	34	6.2	34	5.9
Other	70	6.3	39	6.5	31	6.1
Received AFDC when child was 10–14	364	28.1	179	27.1	185	29.2
HOME-SF total percentile score	982	47.1 ***	496	50.0	486	44.1
Number of surveys child did not live with mother	1,011	0.42	506	0.41	505	0.44
Adolescent's attitudes and behaviors						
R aspires to at least a college degree	583	63.6 ****	312	69.6	271	57.4
Best age to have a child is by age 25	458	46.8	235	48.5	223	45.1
Depression scale at age 14 (0–2)	980	0.32 **	494	0.35	486	0.29
Most serious substance use						
None	671	63.0	333	60.6	338	65.4

Variable	Full sample ^a		Females		Males	
	N	Weighted % or mean	N	Weighted % mean	N	Weighted % or mean
Tobacco	86	9.7	40	10.2	46	9.1
Alcohol	210	23.0	111	25.2	99	20.7
Illegal drugs	44	4.3	22	4.0	22	4.7
Risky Behaviors Index Score (0–15)	976	3.79****	492	3.21	484	4.40
Religious attendance		***				
Never	186	21.4	77	17.4	109	25.5
A few times a year	168	18.0	82	16.5	86	19.6
Approximately once a month	78	7.8	37	7.3	41	8.4
2–3 times per month	131	13.5	72	15.6	59	11.3
Approximately once a week	233	24.3	126	26.8	107	21.7
More than once a week	163	15.0	88	16.5	75	13.6
Controls						
Male	505	49.1	—	—	—	—
Teen birth rate for 15- to 17-year-olds at age 13, (30.5–38.6)	1,011	36.7	506	36.6	505	36.7
Behavior problems index at age 10, (5.3–100)	971	67.7**	488	66.11	483	69.36
N	1,011	—	506	—	505	—

^a Tests whether mean value or weighted percentage differs for males and females.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

**** $p < .001$.

Table 2.

Probability of Having a Teen Nonmarital Birth, by Selected Characteristics

Variable	Full sample		
	N	%	p
Early maternal characteristics			
Race-ethnicity			****
Non-Hispanic White	71	21.1%	
Hispanic	56	24.8%	
Non-Hispanic Black	151	34.7%	
Aged 17 or younger at birth of child			***
17	146	30.3%	
18–19	132	22.0%	
Married at birth of child			****
No	196	32.5%	
Yes	79	19.6%	
AFQT percentile score, (1–96)			****
7	98	41.7%	
8–17	73	26.9%	
18–35	50	22.2%	
>35	50	20.1%	
Adolescent's family environment			
Mother's residence at child age 14			****
Mother only	116	37.8%	
Mother and biological father	48	20.5%	
Mother and other man	72	20.3%	
Single mother and grandmother	19	23.3%	
Other	23	29.2%	
Received AFDC when child was 10–14			****
No	143	20.8%	
Yes	135	38.0%	
HOME-SF total percentile score			***
16	83	32.5%	
17–42	78	31.8%	
43–68	53	20.0%	
69+	53	19.5%	
Number of surveys child did not live with mother			
0	179	23.9%	
1	58	29.8%	
2 or more	41	29.3%	
Adolescent's attitudes and behaviors			
R aspires to at least a college degree			
No	116	31.9%	

Variable	Full sample		
	<i>N</i>	%	<i>p</i>
Yes	143	22.1%	
Best age to have a child is by age 25			
No	113	19.9%	
Yes	154	32.2%	
Depression scale at age 14 (0–2)			
No	132	23.5%	
Yes	135	27.3%	
Most serious substance use			
None	172	21.1%	
Tobacco	20	26.8%	
Alcohol	69	35.6%	
Illegal drugs	17	32.0%	**
Risky Behaviors Index Score (0–15)			
1	74	22.0%	
2–3	63	23.6%	***
4–6	53	26.3%	
7+	78	33.2%	
Religious Attendance			
Never	60	31.0%	
A few times a year	47	22.5%	
Approximately once a month	19	23.8%	
2–3 times per month	32	26.1%	****
Approximately once a week	67	24.9%	
More than once a week	42	26.3%	
<i>N</i>	1,011	—	

* $p < .10$.

** $p < .05$.

*** $p < .01$.

**** $p < .001$.

Table 3. Proportional Hazard Ratios Predicting a Nonmarital Teen Birth, by Selected Characteristics

Variable	Model 1		Model 2		Model 3	
	Hazard ratio (95% CL)		Hazard ratio (95% CL)		Hazard ratio (95% CL)	
Early maternal characteristics						
Race-ethnicity						
Non-Hispanic White	1.00		1.00		1.00	
Hispanic	1.00 [0.66, 1.50]		0.89 [0.59, 1.34]		0.90 [0.60, 1.35]	
Non-Hispanic Black	1.22 [0.83, 1.80]		0.96 [0.65, 1.45]		1.06 [0.72, 1.57]	
Aged 17 or younger at birth of child	1.22 [0.89, 1.67]		1.16 [0.84, 1.61]		1.10 [0.80, 1.53]	
Married at birth of child	0.71 [0.49, 1.03]*		0.76 [0.51, 1.12]		0.78 [0.53, 1.15]	
AFQT percentile score, (1–96)	0.99 [0.98, 1.00]**		0.99 [0.98, 1.00]		0.99 [0.98, 1.00]	
Adolescent's family environment						
Mother's residence at child age 14						
Mother only	—		1.00		1.00	
Mother and biological father	—		0.75 [0.46, 1.22]		0.78 [0.47, 1.30]	
Mother and other man	—		0.58 [0.38, 0.87]***		0.55 [0.37, 0.82]***	
Single mother and grandmother	—		0.57 [0.30, 1.08]*		0.52 [0.27, 0.99]**	
Other	—		0.87 [0.49, 1.55]		0.88 [0.50, 1.57]	
Received AFDC when child was 10–14	—		1.32 [0.92, 1.90]		1.31 [0.93, 1.85]	
HOME-SF total percentile score	—		0.99 [0.99, 1.00]**		1.00 [0.99, 1.00]	
Number of surveys child did not live with mother	—		—		1.16 [0.95, 1.42]	
Adolescent's attitudes and behaviors						
R aspires to at least a college degree	—		—		0.78 [0.58, 1.06]	
Best age to have a child is by age 25	—		—		1.63 [1.21, 2.20]	
Depression scale at age 14 (0–2)	—		—		1.03 [0.73, 1.45]	
Most serious substance use						
None	—		—		1.00	
Tobacco	—		—		1.02 [0.60, 1.72]**	
Alcohol	—		—		1.49 [1.05, 2.12]	

Variable	Model 1		Model 2		Model 3	
	Hazard ratio (95% CL)	Hazard ratio (95% CL)	Hazard ratio (95% CL)	Hazard ratio (95% CL)	Hazard ratio (95% CL)	Hazard ratio (95% CL)
Illegal drugs	—	—	—	—	1.06 [0.54, 2.07]*	—
Risky Behaviors Index Score (0–15)	—	—	—	—	1.04 [1.00, 1.08]	—
Religious attendance	—	—	—	—	0.98 [0.89, 1.07]***	—
Controls						
Male					0.41 [0.30, 0.55]*****	
Teen birth rate for 15- to 17-year-olds at age 13, (30.5–38.6)		0.46 [0.35, 0.62]*****		0.43 [0.32, 0.59]*****		
Behavior problems index at age 10, (5.3–100)		1.03 [0.95, 1.12]		1.04 [0.96, 1.12]		1.03 [0.96, 1.12]
		1.00 [1.00, 1.01]		1.00 [0.99, 1.01]		1.00 [0.99, 1.01]
Wald χ^2 (df)		70.22(8)*****		105.23(14)*****		148.10(23)*****

Note: 95% confidence limits are in parentheses.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

***** $p < .001$.

Table 4.

The Moderating Effect of Gender

Variable	Hazard ratio (95% CL)
Male × Hispanic race-ethnicity	2.40 [1.04, 5.53] **
Effect for males	1.65 [0.80, 3.39]
Effect for females	0.69 [0.43, 1.09]
Male × Black race-ethnicity	2.22 [1.13, 4.38] **
Effect for males	1.78 [0.96, 3.29] *
Effect for females	0.80 [0.51, 1.25]
Male × Mother's AFQT	0.98 [0.96, 0.99] ***
Effect for males	0.98 [0.96, 0.99] ***
Effect for females	1.00 [0.99, 1.01]
Male × Best age to have a child is by age 25	0.59 [0.33, 1.06] *
Effect for males	1.16 [0.73, 1.85]
Effect for females	1.96 [1.36, 2.85] ****

Note: 95% confidence limits are in parentheses.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

**** $p < .001$.