Exploring Variation in Teenage Mothers' and Fathers' Educational Attainment

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CONTEXT: A substantial body of research has compared educational outcomes of teenage parents with those of their childless peers, but less attention has gone to variations among teenage parents. Additionally, gender differences in teenage parents' educational outcomes have rarely been studied.

METHODS: Characteristics associated with high school graduation by age 26 were assessed among 317 teenage mothers and fathers who participated in the 1988–2000 National Education Longitudinal Study. Logistic regression models included socioeconomic and educational characteristics, gender, parenting responsibilities and resources, and gender interactions.

RESULTS: Married or cohabiting teenage parents living with no or one parent had 73% lower odds of graduation than single respondents living with two parents. Gender moderated the relationships between two parenting responsibilities and the likelihood of graduation: Fathers working at least half-time were less likely than nonworking fathers to graduate (odds ratio, 0.2), and fathers who were primary caregivers had substantially elevated odds of graduating (7.4), but no similar relationships were seen among mothers. Sixty-one percent of fathers who worked but were not primary caregivers were predicted to graduate by age 26, compared with 97% of those who were nonworking primary caregivers.

CONCLUSIONS: Traditional parenting norms, according to which mothers are primary caregivers and fathers are breadwinners, do not appear to be associated with improved odds of graduating. Policies and interventions aimed at helping teenage parents graduate may be most effective if they target both genders, but some are likely to be more beneficial for one gender than the other.

A 5% increase in the U.S. teenage birthrate between 2005 and 2007 brought renewed focus to the issue of teenage childbearing,[1] and an estimated 18% of all teenage girls will give birth before age 20.[2] The large and growing body of literature on teenage childbearing generally focuses on one of two areas: preventing teenage pregnancy or documenting its consequences for young people and their families. This study falls into the second category, but it does not take the usual route of comparing teenage parents with their childless peers. Instead, it examines differences among young parents, using data from the National Education Longitudinal Study (NELS) to explore which teenage parents finish high school and which do not. This question is an important and conceptually distinct one, whose answers should lead to preliminary recommendations for policies targeting teenage parents.

BACKGROUND

High school completion is a particularly important policy concern. Finishing high school is a minimum credential for many desirable job opportunities and frequently a prerequisite for postsecondary education.*[3] Curtailed education

is an important explanation for the observed relationship between teenage parenthood and compromised socioeconomic outcomes later in life.[4] Education is also associated with noneconomic benefits, such as improved health.[5] For these reasons, many social programs that target teenage parents focus on improving their educational outcomes.

Most research on the subject has found that teenage parenthood compromises educational outcomes, but concerns about potential measurement biases have led to debate.[6] For example, inadequately accounting for teenage parents' typically disadvantaged backgrounds can lead to overestimated associations between teenage parenthood and outcomes. Most studies that have attempted to reduce this bias—by using childless sisters,[7] childless twins of teenage mothers[8] or pregnant teenagers who miscarried[9,10] as the comparison group, or by comparing respondents with similar propensities to become teenage parents[11–13]— have found that teenage childbearing is associated with relatively poor long-term educational outcomes. Others, however, have been less conclusive.[6]

Characteristics related to teenage parenthood (defined in this study as having a child before age 20) include socioeconomic status, academic achievement, gender, and race or ethnicity.[14,15] These characteristics may also help determine teenage parents' outcomes relative to those of

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*In some states, community colleges and even some four-year colleges do not require a high school diploma or its equivalent for enrollment.

other adolescents. Past research on variation in life outcomes among teenage parents is limited. Using a longitudinal national sample of baby boomer adolescent fathers, Marsiglio found that black teenage fathers were more likely to get a high school degree than nonpoor whites, and fathers whose parents had not graduated from high school were less likely to finish high school than those whose parents had graduated.[16] In a longitudinal study of a convenience sample of 18 families, SmithBattle identified socioeconomic background as important for understanding teenage mothers' educational and socioeconomic outcomes in adulthood.[17] For example, if parents of teenage mothers had low educational attainment, they were often not well equipped to help their daughters succeed in school, even though they frequently wanted the young mothers to finish their education. In the seminal Baltimore study of mostly disadvantaged black teenage mothers, Furstenberg, Brooks-Gunn and Morgan found that parents' educational attainment and economic security, along with teenage mothers' marital decisions and low educational aspirations, were associated with economic disadvantage and fertility outcomes in adulthood among former teenage mothers.[18] Each of these studies examines part of the puzzle of variation in teenage parents' outcomes, but none combines genders, and all use old or local data sources. One of the goals of this study is to examine the extent to which background characteristics are associated with teenage parents' odds of high school completion.

Socioeconomic status, academic achievement and gender, all important predictors of teenage childbearing, typically reflect the characteristics of adolescents' lives before they became parents. The relationship between teenagers' resources and responsibilities after they become parents and variation in their educational outcomes has received little empirical attention; exceptions have been studies based on local samples.[19,20] This study conceptualizes available resources and parenting responsibilities as general measures of young parents' assets and liabilities in terms of the time and energy they have available to devote to schooling. Parenting responsibilities are expected to take away available time and energy, while resources may increase them. For example, a young mother with few resources and multiple parenting responsibilities, such as a primary caregiver who lives alone with two children, probably has less time and energy available to pursue an education than does a mother of one who lives with her parents and can rely on them for child care.

Past research supports this expectation. Living with parents provides a potential source of housing, child care and financial resources and is associated with continued schooling for teenage parents.[19,21] Teenagers with multiple children have an even greater need for material resources than those with only one, and have greater levels of disadvantage.[18] An intervention by Ramey and colleagues demonstrated that teenage mothers who had high-quality child care available in the first five years of their child's life

were more likely than others to receive some postsecondary education, suggesting that having responsibility for child care may compromise teenage mothers' educational attainment.[22] Mollborn found that material resources measured after becoming a parent, such as residence with parents and financial support, explained a substantial part of the associations between teenage parenthood and educational disadvantage by young adulthood.[23] However, that study did not examine the relationship between resources and educational outcomes among teenage parents.

Understanding how gender is related to the educational attainment of teenage parents is another goal of this study. Gender is potentially important for understanding how resources and parenting responsibilities are related to teenage parents' educational outcomes. Including both genders in multivariate quantitative studies of teenage parenthood is important, but the most common strategy is to analyze only mothers.[7–10,14,18–21] The biological burden of mothering and the typically greater intensity of parenting responsibilities for mothers than for fathers would suggest that the negative educational consequences of teenage parenthood may be more severe for women than for men. However, some past research questions this idea. Using a sample of baby boomers and comparing teenage parents with nonparents, Pirog and Magee found that despite the stronger short-term relationship between teenage motherhood and education, being a teenage father had a stronger negative association with high school completion by age 26 than teenage motherhood had.[24] Comparing teenage mothers and fathers with their childless peers using NELS data, Mollborn found no gender differences in the association between teenage parenthood and educational attainment at that age.[23] Neither of these studies explored the relationship between gender and education among teenage parents, however.

Gender can also be important in other ways. Because gender is fundamental both to the experience of teenage parenthood and to the typical distribution of certain parenting responsibilities, such as breadwinning and child care, this study investigates whether relationships between parenting responsibilities or resources and high school graduation are moderated by the adolescent parent's gender (i.e., whether associations are different for mothers and fathers). For example, teenage mothers might attain less education than fathers after having multiple children or when lacking a coresident partner or coresident parents, because of most mothers' disproportionately high child-rearing burden. Teenage mothers may be more affected than fathers by being a primary caregiver of their child because social expectations about mothers' (more than fathers') primary caregiver role prescribe intensive parenting that is frequently incompatible with the demands of schooling. In contrast, working substantial numbers of hours for pay may disproportionately harm fathers' odds of finishing high school because intense social expectations of the male breadwinner role preclude involvement in schooling.

This reasoning motivates several hypotheses. It seems reasonable to expect that available resources will be positively associated with teenage parents' odds of graduating, and that parenting responsibilities will be negatively associated with these odds. Given the lack of consensus in past research, it is difficult to predict the strength or direction of the relationship between gender and teenage parents' odds of graduating from high school. However, gender can be expected to moderate relationships between resources or parenting responsibilities and high school completion in two ways. First, high school completion is expected to be associated with involvement in just one teenage birth (rather than multiple ones), living with parents or a partner, and not being the child's primary caregiver; these associations are expected to be stronger for females than for males. Second, working substantial numbers of hours for pay is likely to be negatively associated with high school graduation, and this association is expected to be stronger for males than for females.

METHODS
Data
The data used in this study came from the 1988, 1992, 1994 and 2000 waves of the NELS;[25] a fifth wave, conducted in 1990, was not included. The survey contains school- and individual-level information about education, employment and other facets of the lives of young people entering adulthood. It has several advantages that made it a good data source for this study: nationally representative data; a fairly large number of teenage mothers and an adequate number of teenage fathers; multiple measures of material resources and parenting responsibilities (though only at a single time point, so fixed-effects analysis is not possible); and longitudinal data from eighth grade until 12 years later. The 1988 survey used a clustered, stratified national probability sample of eighth graders in U.S. public and private schools. Nearly 25,000 students in 1,052 schools participated in this wave; more information about the study design and sample can be found elsewhere.[26] The 1992 data were collected in the spring before students were expected to graduate from high school; the 1992 wave included a separate survey for dropouts. In the 2000 wave, respondents were about 26 years old and were beginning to experience long-term consequences of their adolescent lives and choices.

This study's subsample consisted of the 8,808 respondents (including dropouts) who participated in all five survey waves (because weights were not available for just the four waves of interest), who took the 1988 NELS-administered reading and mathematics tests, whose parents answered parent questionnaires administered in 1988 and 1992, and who provided data on all variables used in the analysis (except, as described below, child care). A total of 317 of these respondents had been teenage parents—i.e., they retrospectively reported having had a child between 1988 (when controls were measured) and 1992 (when resources and parenting responsibilities were measured).

Hence, the teenage parents were born between 1972 and 1975. Many more respondents became teenage parents after the 1992 survey, but they were not included in these analyses because resources and parenting responsibilities, many of which were assessed only in 1992, needed to be measured after the teenage birth.

The National Center for Education Statistics recommends that NELS analyses have at least 30 respondents per cell.[27] Because of the small number of teenage parents in the sample (269 mothers and 48 fathers), this study could not always adhere to that recommendation, even after models were simplified to maximize cell sizes. To increase sample size, mothers and fathers were analyzed together, and interactions between gender and other independent variables were assessed. The small number of teenage fathers, in particular, made it difficult for associations to reach statistical significance, so significant findings for gender and interactions represent unusually strong relationships. Results for the teenage fathers are not generalizable to all teenage fathers because those who were unaware of their paternity obviously could not have reported it. Most adolescents who know that they are fathers live apart from their children, but are involved as parents and support their children financially.[28–30] Because large samples are rare in studies of teenage childbearing using national data, previous quantitative research has analyzed subsamples only slightly larger than this one.[9,10]

Nonresponse, which is a potential problem in surveys of marginalized populations, has been analyzed extensively in the NELS.[31] Nonresponse from schools (the primary sampling unit) was very rare, and individual-level nonresponse and attrition rates were low for most analyzed groups of respondents. Among respondents identified as having become teenage parents by 1992, 94% participated in all five survey waves. NELS sampling weights, which were used in this study, were designed to adjust for unit nonresponse. Cases that were missing data on one or more variables included in these analyses—except child care, which included a missing data indicator capturing 19 respondents*—were deleted listwise.

Variables
•*Dependent variable.* This study's dependent variable indicated whether teenage parents had ever received a high school degree or its equivalent by about age 26. Respondents who had never finished a high school degree or its equivalent were coded as 0, and others (including the small number who were enrolled in postsecondary education or had received postsecondary certificates without having finished high school) were coded as 1.

Most people have completed their education, especially a high school degree, by age 26,[32] though an estimated 5% of teenage mothers are enrolled in school between

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*Child care questions were asked near the end of the interview, and a small number of respondents apparently ran out of time and could not answer; others refused to answer.

ages 25 and 36.*[14] A college degree clearly brings benefits beyond a high school education, but only 12 of the 317 teenage parents had completed an associate's degree, and just four had completed a bachelor's degree, so there was not enough variation to support an indicator capturing educational attainment beyond high school. Measurement of the outcome variable occurred 12 years after measurement of the control variables and eight years after measurement of resources and parenting responsibilities; these intervals provided a long-term perspective on the relationship of resources and parenting responsibilities with teenage parents' education.

•*Available resources and parenting responsibilities.* Available resources and parenting responsibilities were measured when respondents were about 18 years old. These "one-shot" measures are not ideal, as respondents' parenting responsibilities and available resources are unlikely to remain static for eight years. They are, however, among the best available, given the advantages of the NELS data set.[23] Because of the long interval between assessment of these measures and of educational outcomes, the strength of relationships between these variables and educational attainment likely was underestimated.

For resources, a set of variables measured respondents' family structure. Although adults living in the household certainly do not meet all of the needs of a young parent, they may be important sources of housing, financial support, child care, and social and emotional support. Extended family coresidence has been linked to improved socioeconomic outcomes.[20] The measure used in this study indicated whether respondents lived with two parents, one parent or no parent at least half of the time in 1992 (as reported by respondents' parents). Another variable indicated respondents' marital status in 1992 (married or cohabiting, never-married, divorced, separated, widowed or other). These two measures were combined to create a set of variables indicating the teenage parent's living situation: married or cohabiting and living with no parent or one parent, married or cohabiting and living with two parents (conceptualized as the highest resource group), single and living with no parent or one parent (the lowest resource group), and single and living with two parents (the modal category).†

Three dimensions of parenting responsibilities, all assessed in 1992, were expected to increase the burden on young parents and thereby curtail their opportunities to pursue an education: having multiple teenage births, being the primary caregiver and working at least half-time for pay. The first was measured by whether teenage parents had had one child or more. The second was represented by a set of three indicators: primary caregiver (for respondents who reported that they cared for their youngest child "most of the time"), not primary caregiver or missing data. The third was a dichotomous variable measuring whether a respondent worked at least 20 hours per week. Above this rough threshold, paid work appears to be detrimental to educational outcomes, rather than beneficial.[33]

•*Other independent variables.* Each of the remaining variables except the last was measured in eighth grade, before respondents became teenage parents. First, respondents' gender was represented by a dichotomous indicator; 269 teenage parents were female (weighted mean, 86%). Parents' socioeconomic status was a standardized variable based on each parent's occupation, each parent's educational level and family income in 1988; this variable was calculated by NELS on the basis of parents' reports, but student-reported values were used to fill in any missing data.[26] Academic achievement was a continuous measure based on respondents' composite scores on eighth-grade math and reading tests administered by NELS. School enrollment during what should have been respondents' senior year may be an important pathway to graduation by age 26, so whether respondents were enrolled at the time of the 1992 interview, when all the teenage parents had children, also was included.

To model change in education after resources and parenting responsibilities were measured in 1992, analyses controlled for completed years of educational attainment in 1992 (about age 18). The measure of completed years of educational attainment was calculated by subtracting one year from the year in which the respondent was currently or had most recently been enrolled, because it was not possible to assess whether that year was completed.

A number of other variables from 1988 had been expected to predict variation in teenage parents' odds of finishing high school, but they were not significant in multivariate analyses and thus were omitted. Perhaps the most surprising of these was self-reported race and ethnicity; others were community poverty (roughly measured by the proportion of children at respondents' schools who received free or reduced-price school lunches), a parent-reported indicator of whether respondents had had behavior problems at school by eighth grade, respondents' educational aspirations, whether respondents had ever been held back a grade by 1988, respondents' family structure in eighth grade and respondents' age at the birth of their oldest child.

Analysis

All analyses were performed using Stata software, version 9.2, and accounted for NELS-created probability weights that made the sample representative of American eighth graders in 1988, and for stratification and clustering in the

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*Two other standard measures of socioeconomic status, income and occupational status, would not have been as useful to assess at age 26 because of changes throughout adulthood. (Source: Day JC and Newburger EC, *The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings*, Washington, DC: U.S. Census Bureau, 2002, <http://www.census.gov/prod/2002pubs/p23-210.pdf>, accessed Dec. 5, 2006.)

†In early analyses, respondents living with one parent and those living with none were included as separate categories, but some subgroups contained too few respondents for analysis, and results for living with one parent versus none typically differed little.

TABLE 1. Selected characteristics of participants in the 1988–2000 National Education Longitudinal Study, by whether they had become teenage parents by 1992

Characteristic	Nonparents (N=8,491)	Teenage parents		
		All (N=317)	Mothers (N=269)	Fathers (N=48)
Dependent variable				
H.S. degree/equivalent by 2000	95 (0.01)**	73 (0.04)	75 (0.04)	62 (0.09)
Background and education				
Mean years of education by 1992				
(range, 7–12)	10.87 (0.01)**	9.93 (0.12)	9.91 (0.13)	10.05 (0.24)
Female	48 (0.01)**	86 (0.03)	na	na
Mean parents' socioeconomic				
status, 1988 (standardized)	–0.02 (0.02)**	–0.62 (0.09)	–0.61 (0.10)	–0.69 (0.08)
Mean NELS academic test score,				
1988 (range, 32–65)	52.04 (0.23)**	43.95 (0.68)	43.91 (0.72)	44.20 (1.92)
Parenting resources				
≥2 children, 1992	na	24 (0.07)	25 (0.08)	20 (0.09)
Family structure, 1992				
Married/cohabiting, lived with 0–1 parent	1 (0.00)**	25 (0.04)	25 (0.04)	26 (0.07)
Married/cohabiting, lived with two parents	2 (0.00)**	13 (0.02)	10 (0.02)**	30 (0.09)
Single, lived with 0–1 parent	21 (0.01)*	35 (0.07)	37 (0.08)†	19 (0.06)
Single, lived with two parents	76 (0.01)**	27 (0.04)	28 (0.05)	24 (0.06)
Parenting responsibilities				
Child care, 1992				
Primary caregiver	na	82 (0.03)	88 (0.03)**	44 (0.09)
Not primary caregiver	na	13 (0.03)	8 (0.02)**	47 (0.09)
Missing information	na	5 (0.01)	4 (0.01)	9 (0.04)
Worked ≥half-time, 1992	19 (0.01)**	34 (0.05)	29 (0.08)**	68 (0.07)
Potential mediator				
Enrolled in school, 1992	91 (0.01)**	35 (0.04)	34 (0.05)	41 (0.08)

*p<.05. **p<.01. †p<.10. *Notes:* Unless otherwise noted, data are percentages. Differences between teenage parents and nonparents, and between teenage mothers and fathers, were assessed in F tests. Numbers in parentheses are standard errors for weighted means. Weighted means account for sample design effects (stratification and clustering). na=not applicable. NELS=National Education Longitudinal Study.

sampling frame, allowing more accurate calculation of standard errors. To permit analysis, strata containing a single teenage parent were combined with the nearest neighbor.

Bivariate analyses examined weighted means and percentages for all variables, comparing teenage parents with nonparents, and comparing teenage mothers with teenage fathers, using adjusted or design-based F tests.

A series of logistic regression models assessed characteristics associated with teenage parents' odds of getting a high school degree or its equivalent by about age 26. The first model included controls and background characteristics. The next introduced available resources and parenting responsibilities. The third examined interactions between gender and parenting responsibilities. The final model added high school enrollment status at the 1992 interview, to explore whether being able to stay reasonably on track with school enrollment was a mediating pathway through which resources, parenting responsibilities and background factors were associated with long-term educational attainment.

In addition, the *prvalue* command in Stata was used to calculate predicted probabilities of graduating at specific values of each independent variable used in model 3 (the only difference is that the missing caregiver status variable was not included).[34] These probabilities illustrate how the odds of graduation changed for a "typical" respondent

(i.e., one with the teenage parent sample's mean or modal values for each variable), depending on gender, primary caregiver status and paid work status.

RESULTS
Bivariate Analyses
Results of bivariate comparisons of teenage parents and nonparents echoed those from past research finding compromised educational outcomes among teenage parents (Table 1). Seventy-three percent of all teenage parents (75% of mothers and 62% of fathers) had completed a high school degree or its equivalent by 2000, compared with 95% of nonparents. Even before having children, teenage parents were educationally and socioeconomically disadvantaged. For example, compared with nonparents, they scored significantly lower on the NELS academic tests (mean, 44 vs. 52 on a scale of 32–65) and were significantly more likely to report the lowest resource family structure (being single and living with one or no parent) in 1992 (35% vs. 21%).

Two types of stereotypically gendered parenting responsibilities, paid work and child care, were unequally distributed between mothers and fathers. Eighty-eight percent of teenage mothers were primary caregivers, compared with 44% of fathers. Sixty-eight percent of teenage fathers worked at least half-time, compared with 29% of mothers. Mothers were also significantly less likely than fathers to be in the highest resource family structure (married or cohabiting and living with two parents). Teenage mothers and fathers did not differ on any other variables, suggesting that pooled analyses including both genders and testing gender interactions with resources and parenting responsibilities are appropriate.

Multivariate Analyses
Multicollinearity was not a serious issue in the multivariate models, which had variance inflation factors below 2.1 before interactions were introduced and below 9.6 afterward. Comparisons between actual high school graduation outcomes and those predicted by each model (not shown) revealed that the models fit reasonably well, especially given the long time lag between the measurement of the independent and dependent variables. Depending on the model, 53–55% of nongraduates' outcomes and 89–90% of graduates' outcomes were predicted correctly.

In the model including only background and control variables, educational attainment by 1992, parents' socioeconomic status and eighth-grade test scores were positively associated with teenage parents' odds of eventually graduating (odds ratios, 1.2–1.8; Table 2). The odds did not differ between teenage mothers and fathers. This result is interesting, especially given gender differences in the prevalence of teenage parenthood.

When resources and parenting responsibilities were included (model 2), married or cohabiting respondents living with no parent or just one had 73% lower odds of graduating than single respondents living with two

parents; they also had lower odds than married or cohabiting respondents with two coresident parents (not shown). Being single and living with one parent or none was marginally associated with reduced odds of graduating. Among respondents living with two parents, the odds of graduation did not differ by marital or cohabitation status (not shown). The measures of multiple teenage births, primary caregiving and working at least half-time were not related to the odds of graduating.

The relationships between high school graduation and both involvement in multiple teenage births and family structure were similar for teenage mothers and fathers (not shown). The interactions between gender and both child care and paid work, however, were significant in the expected directions (model 3): Mothers who were primary caregivers were less likely than fathers who did not play this role to graduate from high school (odds ratio, 0.04), and mothers who worked at least half-time were more likely to graduate than were fathers who did not (8.7). The main effects for child care and paid work became significant as well once the interactions were added. For fathers, being a primary caregiver was associated with elevated odds of graduating (7.4), and working at least half-time for pay was associated with reduced odds of doing so (0.2); for mothers, the likelihood of graduating did not differ by caregiving or work status.

The final model does not support the expectation that teenage parents' continued school enrollment mediates the associations between long-term educational attainment and the measured independent variables. Teenage parents who were attending school in 1992 did not have higher odds of finishing high school by 2000 than those not enrolled. Furthermore, introducing this measure did not improve the fit of the model or affect whether any characteristics included in the previous model were significant except one: Years of education attained by 1992 was no longer significant in this model.

The predicted probabilities of hypothetical teenagers' graduation show that for typical respondents, child care and breadwinning responsibilities had stronger associations with teenage fathers' likelihood of graduation than with mothers' (Figure 1). Some 61% of teenage fathers who were workers but not primary caregivers were predicted to graduate by about age 26, compared with 97% of nonworking primary caregivers. Among teenage mothers, the relationship was the opposite, and the difference was smaller: Ninety percent of nonworking primary caregivers were predicted to graduate, compared with 98% of mothers who worked for pay but were not primary caregivers.

DISCUSSION

In this study, gender was not associated with teenage parents' odds of completing high school by age 26. By contrast, using the same outcome, Pirog and Magee's analysis of teenage parents from a generation earlier found a greater long-term educational penalty associated with teenage fatherhood than motherhood.[24] In the current study,

TABLE 2. Odds ratios from logistic regression analysis assessing characteristics associated with the likelihood that young adults who had become teenage parents by 1992 graduated from high school by 2000

Characteristic	Model 1	Model 2	Model 3	Model 4
Years of education by 1992	1.57 (0.24)**	1.49 (0.26)*	1.49 (0.27)*	1.27 (0.28)
Female	1.84 (0.80)	2.49 (1.22)†	4.65 (4.36)†	3.59 (3.48)
Parent's socioeconomic status, 1988	1.81 (0.54)*	1.95 (0.64)*	1.98 (0.64)*	1.98 (0.66)*
NELS academic test score, 1988	1.22 (0.07)**	1.24 (0.07)**	1.23 (0.07)**	1.24 (0.07)**
≥2 children by 1992	na	0.61 (0.32)	0.64 (0.33)	0.66 (0.34)
Family structure, 1992				
Married/cohabiting, lived with 0–1 parent	na	0.27 (0.13)**	0.27 (0.14)*	0.30 (0.16)*
Married/cohabiting, lived with two parents	na	1.02 (0.57)	1.30 (0.79)	1.32 (0.80)
Single, lived with 0–1 parent	na	0.42 (0.20)†	0.44 (0.22)†	0.44 (0.23)
Single, lived with two parents (ref)	na	1.00	1.00	1.00
Child care responsibility, 1992‡				
Primary caregiver	na	1.24 (0.55)	7.36 (5.64)**	6.25 (4.63)*
Not primary caregiver (ref)	na	1.00	1.00	1.00
Missing information	na	1.20 (1.05)	1.52 (2.67)	1.05 (1.95)
Work status, 1992‡				
Worked ≥half-time	na	1.45 (0.64)	0.21 (0.14)*	0.22 (0.14)*
Did not work ≥half-time (ref)	na	1.00	1.00	1.00
Interactions				
Female x primary caregiver	na	na	0.04 (0.05)**	0.06 (0.07)*
Female x missing care information	na	na	0.31 (0.64)	0.51 (1.10)
Female x worked ≥half-time	na	na	8.74 (7.19)**	8.29 (6.73)**
Enrolled in school, 1992	na	na	na	2.29 (1.48)
Design-based F	*8.02***	*3.62***	*3.34***	*3.25***
Incremental F	*na*	*1.93†*	*6.58***	*1.72*

*p<.05. **p<.01. †p<.10. ‡Odds ratios in model 2 apply to the overall sample; those in models 3 and 4 apply to fathers only. *Notes:* Analyses are weighted and account for sample design effects. Figures in parentheses are standard errors of odds ratios (which are larger than standard errors for logistic regression coefficients). The small number of teenage fathers makes some cell sizes small. na=not applicable. ref=reference category. Measures for which no reference category is shown are dichotomous or continuous. NELS=National Educational Longitudinal Study.

FIGURE 1. Predicted probability that young adults who had become teenage parents by 1992 graduated from high school by 2000, by work and primary caregiving status in 1992, according to gender
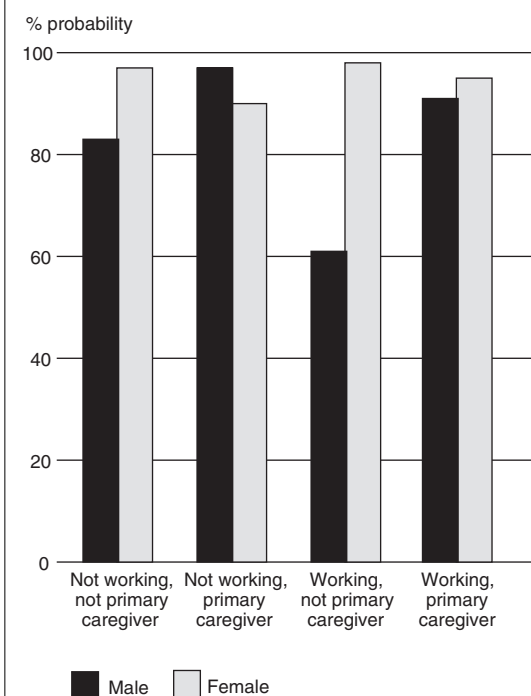
Notes: Working indicates having paid employment at least half-time. For details on the calculation of these probabilities, see page 156.

however, gender was linked with teenage parents' educational outcomes because it moderated the relationships between traditionally gendered parenting responsibilities and education. Primary caregiving responsibilities were associated with elevated odds of graduating for teenage fathers but not mothers, and working at least half-time for pay was linked to reduced odds of finishing high school for teenage fathers but not mothers. Teenage fathers who were paid workers but not primary caregivers were a particularly vulnerable group; they had just a 61% predicted probability of finishing high school.

These results provide suggestive evidence that some teenage parents who conformed to gender-stereotypical parenting responsibilities had reduced odds of attaining the basic educational credential of a high school degree. Because gender seems to be important to an understanding of some aspects of teenage parenthood, it would be useful to include both teenage mothers and fathers in future analyses so that the relationship between gender and teenage parents' outcomes can be further elucidated. Additional examination of the links between gender and the causes and consequences of teenage parenthood is warranted. In this study, small numbers of teenage parents in some racial and ethnic groups precluded interacting race and ethnicity with other measures; future research should examine whether race and ethnicity affects predictors of teenage parents' educational attainment.

Married or cohabiting respondents living with either no parent or one had lower odds of finishing high school than respondents who lived with two parents, regardless of these respondents' marital status. These findings suggest that living with two parents benefited many teenage parents. Interestingly, being married or cohabiting was typically not an advantage for teenage parents. Though not nearly as definitive, these results echo Marsiglio's finding for teenage fathers that marriage and cohabitation were associated with elevated rates of high school dropout.[16] According to traditional societal norms for adults, parents should be married and live apart from their families of origin, mothers should be their children's primary caregivers and fathers should work to support their children financially. This study's results show that among teenage parents, conforming to these parenting norms was not associated with improved odds of finishing high school, and sometimes was linked to reduced odds of graduating.

Limitations

Because of this study's many limitations, its results should be treated as preliminary and should stimulate further research with larger samples of teenage parents of both genders. This study was limited by its small number of teenage fathers and lack of data about fathers' involvement with their children. Although the available data provide important information about teenage fathers, a larger national sample of teenage fathers should attempt to replicate the conclusions drawn in this study. Available

On average, teenage fathers were as likely as mothers to end up falling short of a high school degree at age 26.

resources and parenting responsibilities are represented by a few broad measures from a single point in time, so more specific, direct measures would be useful to expand understanding of their relationship with life outcomes of teenage parents. The small numbers of teenage parents allowed little possibility of the models' fully accounting for preexisting factors that might influence both teenage parents' resources and parenting responsibilities and their educational outcomes. Therefore, even though the data are longitudinal, the analyses could not establish causality. Having these measures from multiple time points would allow for fixed-effects analyses that could rule out potential selection bias that these models have not controlled for.

Conclusion

If the associations of gender, available resources and parenting responsibilities with high school graduation are confirmed in future analyses that assess causality, the implications for policy would be substantial. Many programs aimed at keeping adolescent parents in school target primarily mothers. This study's findings showed that on average, teenage fathers were as likely as mothers to end up falling short of a high school degree at age 26, and therefore might benefit equally from interventions. Financial resources, rather than child care, may be key for improving teenage fathers' likelihood of completing high school. Given the vulnerability of young fathers who worked but were not primary caregivers, economic support from sources other than paid work, such as relatives, loans or subsidy programs, might help teenage fathers reduce work hours and finish high school. Because adhering to traditional parenting roles and forming a nuclear household with a spouse or partner were sometimes associated with reduced long-term odds of teenage parents' graduating, including these as requirements in social programs aimed at improving adolescent parents' educational outcomes may not be beneficial and may ultimately backfire.

This study's focus on understanding variation in educational outcomes among teenage parents and its inclusion of both teenage mothers and fathers make it a useful addition to the growing body of research on the life outcomes of parenting adolescents. Results suggest that some characteristics that explain why teenage parents' education is compromised compared with that of their childless peers, such as socioeconomic status and family structure, also are related to differences in educational outcomes among teenage parents. Other characteristics that might be expected to matter—such as race and ethnicity and the number of teenage births—were not significant in these analyses. Understanding why some teenage parents succeed in getting a high school degree when others do not is an important question with a complicated preliminary answer. Further fleshing out that answer should help educators and policymakers improve teenage mothers' and fathers' socioeconomic outcomes.

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