

# The Determinants of First Sex by Age 14 in a High-Risk Adolescent Population

By Frank L. Mott, Michelle M. Fondell, Paul N. Hu, Lori Kowaleski-Jones and Elizabeth G. Menaghan

*A study using data for mothers from the National Longitudinal Survey of Youth and their children aged 14 or older indicates that, after accounting for a wide range of demographic and socioeconomic antecedents, children are significantly more likely to become sexually active before age 14 if their mother had sex at an early age and if she has worked extensively. In addition, early sexual debut is eight times as likely among black boys as among non-Hispanic white boys. Children who use controlled substances at an early age are more than twice as likely to have sex before age 14 as those who do not, although the type of substance having an effect is different for girls (cigarettes) and boys (alcohol). Church attendance is an important determinant of delayed sexual activity, but only when a child's friends attend the same church. (Family Planning Perspectives, 28:13-18, 1996)*

The literature examining the various paths by which children become sexually active is substantial. Most of this literature focuses on psychological and social characteristics that may affect the risk of early sexual initiation.<sup>1</sup> Some research, however, has focused on the effects of biological factors. For example, Udry and colleagues have documented that a mother's age at puberty is similar to that of her children and that the children of women who were sexually active at an early age are more likely than other children to have sex at a young age.<sup>2</sup> These associations probably reflect biological factors as well as the likelihood that parents suggest, either verbally or through their behavior, that early sexual activity is acceptable.

Demographic and socioeconomic studies have found significant associations between early sexual activity and factors such as family-economic disadvantage, large family size, minority-group status, an unstable family environment and low maternal education.<sup>3</sup> Many of these factors may be viewed as predictors of socially unacceptable activities such as stealing, fighting and use of controlled substances, which have also been linked by research to early sexual activity.<sup>4</sup>

Some studies have identified factors associated with delays in sexual initiation.

For example, a strong future orientation has been linked to delayed sexual activity among younger children and to later childbearing.<sup>5</sup> In addition, some researchers have suggested that religious involvement, often measured by frequency of attendance at services, either is related to or directly promotes the delay of sexual intercourse until a later age or until a relationship is legitimized.<sup>6</sup>

Unfortunately, in many of these studies, the data measuring the dependent and independent variables were collected at the same time, making it difficult to make inferences about causality. In the research reported on in this article, we use unique longitudinal data for a national sample of high-risk adolescents to explore how various dimensions of a child's background may be linked to early sexual activity.

## Data and Methods

The National Longitudinal Survey of Youth (NLSY) originally included over 12,000 men and women aged 14-21 in 1979. This data set, about equally divided between men and women, overrepresents blacks and Hispanics, which permits statistically reliable racial and ethnic comparisons. The respondents have been interviewed annually since 1979 on topics including employment, education, health, marital history, fertility, income, household composition and geographic residence. As of 1992, the final outcome year for this analysis, only about 10% of the original civilian sample had been lost to attrition; there appear to be no significant biases in the data because of this modest loss.

During the 1988, 1990 and 1992 surveys, the NLSY also collected data from children

aged 10 or older who had been born to the female NLSY respondents. Thus, for the youngest children in our sample, we had only one report, while for the oldest children, we had as many as three. The topics covered included attitudes toward school, religious attendance, alcohol and drug use, sexual activity (only for those aged 13 or older) and dating and friendship patterns. In all instances, we used the child's earliest report. For a very large proportion of the sample, this information was available at age 10 or 11; for more than 90% of the sexually active subset of children, the responses to these items were given before they became sexually active.

For the research reported on in this article, we considered only adolescents aged 14 or older by 1992. Because the mothers of these youth would all have been between the ages of 27 and 35 as of the 1992 survey round, they were all younger than 22 when they gave birth to the children in our study. Indeed, our data show that about 80% of these children were born to women younger than 20. Viewed from the perspective of early childbearing, socially unacceptable behavior or human capital development, many of their family traits are those of a high-risk population group: Almost 90% of the mothers reported having had sexual intercourse before age 18, about half had not attained a high school diploma, and a large proportion were well on their way toward attaining an above-average family size.

The outcome measure for these women's adolescent children is whether or not they had had sex by age 14. Altogether, there were about 500 adolescents for whom we could obtain this information. Each child entered the sample at the first survey point after his or her 14th birthday and was included only once. This protocol is used throughout except for the summary sexual activity statistics presented in Table 1 (page 14).

The great majority of the respondents in our sample had not become sexually active by age 14. Those who had numbered between 89 and 101—some respondents had provided reports on age at first sex in more than one survey round, and not all of them had consistently reported the

Frank L. Mott, Michelle M. Fondell, Paul N. Hu, Lori Kowaleski-Jones and Elizabeth G. Menaghan are with the Center For Human Resource Research and the Department of Sociology, Ohio State University, Columbus. An earlier version of this article was presented at the annual meeting of the Population Association of America, San Francisco, Apr. 6-8, 1995. The research on which it is based was supported by grant RO1 APR000961 from the Office of Population Affairs, Department of Health and Human Services.

**Table 1. Cumulative percentages of adolescents who have become sexually active by a given age, according to gender, children of respondents to the National Longitudinal Survey of Youth, 1988–1992**

Age	All		Boys		Girls	
	N	%	N	%	N	%
13	749	8.6	389	14.7	360	2.7
14	509	17.7	263	24.6	246	10.8
15	320	31.2	166	35.0	154	27.3
16	169	54.9	82	63.1	87	47.1
17	78	68.6	38	72.1	40	65.8

Note: The data in Tables 1–3 are weighted for race and ethnicity.

same age. In all but two cases, we chose to use the earlier report; we believed that there was a greater likelihood that an older child would reconstruct an earlier report than that a younger child would lie about current behavior. Nevertheless, we ran several of the regressions we are presenting in this research using both the lower and upper boundary estimates and found no substantial difference in the results.

We consider several factors from the mother's own adolescence and also examine the impact of more recent maternal and family characteristics and behavior that occurred after the child was born but before his or her initiation of sexual activity. Our primary focus is on the relative importance of the characteristics and behavior of the adolescent and those of the mother and family.

Because of the apparent connection between early sex and various socially unacceptable adolescent activities, we include two items that are not available in most data sets—measures of the mother's involvement in antisocial activities and her use of controlled substances during her adolescence—as well as her age at menarche and age at first sex. The inclusion of these two items permits us to clarify the relative importance of the mother's biological and psychosocial traits and her behavior during adolescence as predictors of the age at which her child becomes sexually active.

We also include as explanatory variables measures of family and maternal factors that available evidence suggests may be interwoven with the adolescent characteristics that are central to this research. The longitudinal nature of the NLSY allowed us to construct these measures using prospective data. These measures include the average weeks worked per year by the mother since the child's birth and the percentage of surveys during which a grandparent was living in the child's home, as well as proxies for the families' long-term (since the child's birth) economic well-being and the percentage

of time since birth that the child had a father figure in the home.

For the children, we include items that measure participation in socially unacceptable activities that previous studies have found to be associated with early intercourse, such as fighting, stealing and substance use. We also

consider factors that may influence adolescents to delay having sex. As measures of future orientation, we include the adolescent's intended age at marriage, intended age at first birth and expected educational attainment. In our examination of the role of religion, we take previous research a step further by attempting to clarify whether the effects found in other studies reflect religious involvement per se or whether they reflect social pressures within a religious peer group.

In addition, we consider whether an adolescent's feelings about school—including friendships, teacher quality and general environment—are related to age at first sex. Two additional variables—the number of a child's opposite-sex friends less the number of same-sex friends, and the age of adolescent daughters at menarche—act as proxies for the physiological and social variables considered by Udry and others.<sup>7</sup>

## Early Sexual Behavior

Before sorting out the predictors of having sex before age 14, we examine the actual patterns of early sex among these high-risk youth. The sample for each age includes all those who attained that age in the NLSY sample in 1988, 1990 or 1992 and for whom we have reports on sexual activity. Thus, as may be seen in Table 1, our largest sample is for 13-year-olds. Our samples for older ages are smaller because most of the children had not attained those ages by 1992.

The Table 1 sample is distinctly different conceptually from that used for the remaining analyses: In the Table 1 sample only, selection for high-risk characteristics increases with age, with the oldest children being at the greatest risk because they were born to the youngest mothers. In addition, some children are included in more than one age category in Table 1 because we have reports on sexual experience for them at more than one age. For example, the 78 youth for whom we have reports at age 17 are also included in samples for all younger ages.

About 9% of the NLSY children reported that they had been sexually active before age 13. This percentage escalates with increasing age—about 18% before age 14, 31% before age 15 and about 55% before age 16. At the younger ages, the boys in the sample were substantially more likely than the girls to have become sexually active, a pattern that is consistent with the

**Table 2. Demographic and socioeconomic characteristics of child survey respondents aged 14 or older in 1992, by gender and sexual experience by age 14, and of all child survey respondents**

Characteristic	Aged ≥14					All ages
	Total	Boys	Girls	Sex	No sex	
<b>Mothers</b>						
Age at first sex (median)	16.0	15.9	16.1	15.6	16.1	17.6
Age at menarche (median)	12.9	12.9	12.9	13.0	12.9	13.2
Age at birth of child (median)	17.7	17.9	17.6	17.4	17.8	24.5
Yrs. of schooling (median, 1988)	12.0	12.1	11.9	12.1	12.0	12.6
% with <12 yrs. of schooling	49.6	51.5	47.9	46.1	50.3	24.8
Avg. wks. worked per yr., 1979–1992	24.4	24.9	23.9	23.9	24.5	28.0
<b>Children</b>						
% black	38.0	40.1	35.6	56.3	33.9	17.6
% Hispanic	9.8	10.4	9.2	6.5	10.5	8.1
<b>Region</b>						
Northeast (%)	11.0	10.8	11.0	11.7	11.1	15.5
North central (%)	27.2	24.5	29.9	18.8	28.0	31.0
West (%)	14.6	14.8	14.5	13.1	13.9	17.4
South (%)	47.2	49.9	44.6	51.6	43.9	36.1
<b>Household</b>						
Avg. income-to-needs ratio, 1979–1992	1.8	1.8	1.9	1.5	1.9	2.5
% of surveys mother's partner/spouse was present, 1979–1992	62.0	62.0	62.0	47.0	65.0	58.0
% of surveys grandparent was present, 1979–1992	13.0	13.0	13.0	15.0	13.0	25.0
No. of children (median, 1988)	2.9	2.9	2.9	3.0	2.9	2.3

**Table 3. Percentage of adolescents giving indicated response to selected behavioral and attitudinal measures, by gender and sexual experience by age 14**

Response	Total	Boys	Girls	Sex	No sex
<b>Bad child†</b>					
Had to bring parents to school because of bad behavior (once or more)	23.2	30.0	16.6	37.8	20.0
Stayed out longer than parents wanted (more than twice)	26.0	31.4	20.6	36.2	23.7
Hurt someone badly enough to need bandages/doctor (once or more)	17.3	22.7	11.9	28.2	14.9
Lied to parents about something important (twice or more)	29.1	30.3	27.9	36.1	27.6
Took something from store without paying (once or more)	10.4	12.5	8.2	15.3	9.3
Damaged school property on purpose (once or more)	3.7	5.2	2.2	1.7	4.1
Got drunk (twice or more)	5.2	6.6	3.9	9.8	4.2
Skipped a day of school without permission (twice or more)	6.5	5.2	7.7	8.8	5.9
Stayed out at least one night without permission (twice or more)	6.3	9.1	3.6	12.6	4.9
<b>School satisfaction‡</b>					
Easy to make friends (very true)	49.3	53.8	44.8	44.5	50.4
Most teachers willing to help (very true)	48.9	49.7	48.1	47.6	49.2
Most classes boring (not at all true)	19.1	17.6	20.6	17.0	19.6
Don't feel safe (not at all true)	64.1	62.9	65.3	58.8	65.3
Most teachers don't know subject well (not at all true)	64.2	64.8	63.6	55.6	66.0
Can get away with almost anything (not at all true)	47.5	45.4	49.6	45.9	47.8
Schoolwork requires me to think hard (very true)	61.6	63.6	59.7	62.7	61.4
Person has freedom to learn what interests him (very true)	41.6	41.7	41.6	46.0	40.5
<b>Substance use in last 3 mos.</b>					
Cigarettes (yes)	7.0	7.3	6.8	19.3	4.3
Alcohol (yes)	10.4	9.7	11.2	21.3	8.0
Marijuana (yes)	1.0	0.8	1.2	1.0	1.0
Other drugs (yes)	0.1	0.2	0.0	0.0	0.1
<b>Future orientation</b>					
Expect to complete college (yes)	60.3	55.9	64.6	59.7	60.4
Expect to marry at age 20 or later§ (yes)	34.3	37.0	31.6	29.2	35.4
Expect to have children at age 22 or later§ (yes)	26.6	26.5	26.6	23.1	27.3
<b>Negative peer influences</b>					
Pressure to try cigarettes (yes)	14.8	12.3	16.9	18.2	14.0
Pressure to try drugs (yes)	8.5	8.9	8.1	10.9	7.9
Pressure to drink alcohol (yes)	19.1	19.8	18.5	27.4	17.1
Pressure to skip school (yes)	20.2	22.0	18.5	28.7	18.1
Pressure to commit crime/violence (yes)	7.6	11.6	4.0	12.8	6.3
<b>Gender of friends</b>					
Same-sex friends outnumber opposite-sex friends by ≥10	20.0	19.8	20.2	19.4	20.1
Same-sex friends outnumber opposite-sex friends by 0-9	62.3	61.9	62.8	57.6	63.4
Opposite-sex friends outnumber same-sex friends by 1-9	13.7	13.6	13.8	12.7	13.9
Opposite-sex friends outnumber same-sex friends by ≥10	4.0	4.6	3.3	10.3	2.6
<b>Church attendance</b>					
≥twice/mo. and friends attend same church	31.5	29.9	37.5	24.4	33.8
≥twice/mo. and no friends attend same church	19.8	18.8	17.8	22.7	18.9
<twice/mo.	48.7	48.1	43.4	52.9	47.3

†Possible responses were: never, once, twice and more than twice. ‡Possible responses were: very true, somewhat true, not too true and not true at all. §Includes never.

results from most other studies.<sup>8</sup>

It is difficult to compare the statistics for our sample with those for a fully representative national sample or, indeed, with those for other high-risk samples because of differences in the quality, completeness and comparability of reporting. In a national sample of young men, Sonenstein and colleagues found that 11% had had sex before age 14 and 21% had done so before age 15.<sup>9</sup> These percentages are substantially lower than those for our sample. On the other hand, Centers for Disease Control estimates from the 1990 Youth Risk Behavior Survey (YRBS) suggest that about 49% of ninth-grade boys (whose modal age is 14 at the beginning of the school year) have had sex.<sup>10</sup>

Data from the 1988 National Survey of Family Growth (NSFG) suggest that the young women in our sample began sex-

ual activity at a younger than average age.<sup>11</sup> About 26% of 15-year-olds and 32% of 16-year-olds in the NSFG had ever had sex, compared with 27% and 47%, respectively, in our sample. However, 1990 estimates from the YRBS indicate that 32% of ninth-grade girls (modally 14 years old) and 43% of 10th-grade girls reported ever having had sex. When one interpolates between ages, the YRBS estimates are not dissimilar to ours—but our sample is presumably at a much higher risk. Thus, like the data for boys, these statistics are difficult to interpret.

### Sexual History

The bivariate data in Table 2 indicate in some detail not only how our sample differs from a fuller national cross section, but also how the families of children who had become sexually active by age 14 may dif-

fer from the families of children who had not. The table provides socioeconomic data both for all the children in the NLSY sample in 1992, which probably includes about two-thirds of the children who will be born to the original NLSY female sample, and for our selected sample of high-risk youth.

As the table shows, the mothers of the children who were at least 14 in 1992 had their children at a much younger age, have much less education, have more children, are poorer and are somewhat less likely to be working. They are also more likely to be black and to be living in the South. If comparisons had been made with a nationally representative sample, the differences in many of the characteristics would have been greater. For example, the national high school graduation rate for all women in this age-group is about 87%,<sup>12</sup> compared with rates of 75% for all

**Table 4. Intercorrelations among selected characteristics of mothers and children**

Measure	1	2	3	4	5	6	7	8	9	10
1. Mother's age at menarche		0.21**	-0.04	-0.01	0.16*	-0.02	-0.01	-0.01	0.00	-0.02
2. Mother's age at first sex			-0.10*	-0.12**	0.10	-0.16**	-0.16**	-0.08	-0.13**	-0.08
3. Mother's early-behavior score†				0.12*	§	0.04	0.04	0.05	-0.01	-0.03
4. Mother's substance use score‡					§	0.00	0.00	0.06	-0.02	0.06
5. Daughter's age at menarche						-0.06	-0.01	0.00	0.08	0.01
6. Child sexually active by age 14							0.18**	0.15**	0.07	0.12**
7. "Bad child" score								0.33**	0.05	0.06
8. Child's substance use score									0.00	0.00
9. Opposite-sex less same-sex friends										-0.01
10. Neg. peer-influence score										

\*p<.05. \*\*p<.01. †Developed from a series of eight items addressed to the mothers in 1980. One point was added to the overall score for each of the following: 1) taking a car without owner's permission; 2) breaking into a building to steal or just to look around; 3) destroying property more than once; 4) shoplifting; 5) smoking marijuana more than once; 6) using force to obtain money or things; 7) attacking someone with the intent to injure them; or 8) trying to get something from someone by lying to them. The range of scores on the overall variable is from zero (no bad behavior) to eight. ‡A composite of cigarette and alcohol use items asked in 1984. Alcohol use was coded one if the mother had had six or more drinks on at least two occasions in the previous month. Cigarette use was coded one if the mother had had one or more cigarettes per day in the previous month. §Correlations between mother's behavior as an adolescent and daughter's age at menarche are not included because these items have no logical connection.

NLSY mothers and 50% for our sample.

Demographically, the families of children who had had sexual intercourse by age 14 differ little from those of children who had not: Maternal education, family size and even mother's age at the birth of the child show only small differences. However, racial and ethnic differences are more substantial, as are associated geographic differences. As we expected, several of the family economic and social attributes show modest differences. Thus, although the sample overall is socioeconomically constrained, children who had had sex by age 14 were more likely to be from a poor family, to lack a father figure in the home and to have a mother who was sexually active at an early age.

We now shift to psychosocial variables that may be antecedents of early sexual activity. Table 3 (page 15) shows results for the aspects of child behavior and attitudes we were able to measure. Except for the peer influence items, these data were collected before the children had had sex. Children who became sexually active before age 14 were less likely to have obeyed their parents regarding curfews, were much more likely to have hurt someone in a fight, were somewhat more likely to have lied to their parents about something important and were substantially more likely to have gotten into trouble at school.

As in other studies, there is strong evidence that very early substance use is associated with subsequent early sexual activity.<sup>13</sup> Both early cigarette and alcohol use are linked to early sex, but the number of children in the sample admitting to the use of other substances is too small for meaningful analysis. In contrast, there is little evidence that children's feelings of satisfaction or dissatisfaction with their school are related to early intercourse.

We had expected to find at least some connection between stronger future ori-

entation and later sexual initiation.<sup>14</sup> However, there was very little difference in expected age at marriage or age at first birth between children who had had sex before age 14 and those who had not. Even more surprising, children who expected to complete college were no less likely than those who did not to have had sex at an early age. This similarity may be an artifact of their more homogeneous socioeconomic status. It may also reflect a lack of realism regarding their educational future: Fully 60% of the whole group expected to complete college, although only about 25% of new adult cohorts in the United States actually do so.<sup>15</sup>

Although several peer influence items relate to early sexual activity in the direction we expected, these associations should be interpreted with caution because 1992 was the only survey year in which we asked these questions. For this reason, we did not include these items in our final multivariate equations, although we tested them in supplementary analyses.

The two remaining items in Table 3 are included to explore the effects of peer interaction. The first of the two, which examines the association between the gender mix of one's friends and early sexual activity, does suggest that having a much greater number of opposite-sex friends at a relatively early age may be related to early intercourse. This result is consistent with the theory that early physical development may be associated with earlier sexual activity; however, our data show no apparent link between age at menarche and age at first sex.

The results for the measures of religious influence shown in the table suggest that peer norms within a church-based social network are more important than attendance at services in delaying sexual initiation. Whether this effect is due to the friends themselves or to institutional pres-

sure warrants further investigation.

Although our modest sample precludes presenting separate tabular statistics for boys and girls by whether or not they had had sex by age 14, the data suggest some important differences between boys and girls in behavior that may be related to early sexual activity. However, despite the gender differences in individual items, boys and girls had similar scores on overall scales incorporating those items (not shown).

### Mother-Child Correlations

Before clarifying the independent cross-generational links between a mother's early sexual activity and that of her child, we explore the extent to which this behavior is intimately linked with other attributes that research has suggested may influence the likelihood of early sexual initiation. Table 4 includes the zero-order correlations between selected maternal and child factors of interest.

As we expected, the mother's age at menarche is significantly associated both with her own age at first sex and with her daughter's age at menarche. However, two proxies for the mother's early social adjustment—a summary measure based on eight items relating to the mother's adolescence (mother's early behavior score) and early substance use—show no association with any of the child's attributes. These two maternal measures were included in the NLSY 1980 survey round, during which the mothers were aged 15–22. Maternal age at first sex is significantly associated not only with the two maternal social measures but also with several of the children's early social behaviors and their likelihood of being sexually active by age 14.

In contrast, the daughter's age at puberty is associated neither with age at first sex nor with other early social behavior that might predict precocious sex. Finally,

a child's likelihood of becoming sexually active by age 14 is significantly related to several types of socially unacceptable behavior. Early sex is significantly associated with above-average scores on the "bad child" index and the child substance use index (both measured before age 14) and the negative peer-influence scale (measured after or at about the time the adolescent became sexually active).

## Multivariate Results

Because our dependent variable is dichotomous, we use a multivariate logit approach to explore the independent effects of the various factors on the odds of becoming sexually active by age 14. This analysis includes all 450 children for whom we had complete information on the relevant variables. The multivariate results in Table 5 are presented in the form of multiplicative odds ratios; for all the dichotomous measures, the coefficients represent the odds of having sex by age 14 for the specified category in comparison with the reference category. For example, black children are 2.78 times as likely as non-Hispanic white children to have sex by age 14. For continuous variables, the odds change by the indicated amount for each unit of change in the measure. For example, each additional year that a child's mother delayed having sex is associated with a reduction in the child's odds of having sex by age 14 by a factor of 0.74.

The variables included in the multivariate analysis are loosely grouped conceptually and temporally. The early maternal variables include several items that act as proxies for less recent cross-generational physiological and social influences. A social factor that affects a child's behavior may do so through the child's observation and emulation of ongoing maternal behavior or, more likely, through verbal transmission of values across generations. The more recent maternal and family variables reflect behavior that has been more directly observable by the child and that may directly affect the child's attitudes and behavior.

The social and psychological measures in Table 5 are, for the most part, summary scales based on the items in Table 3 and identified by the categories shown in that table. One exception, the child loneliness index, is an average score for the 1988-1992 period based on items scaled from one (not lonely at all) to three (very lonely).

Even with the wide range of controls in the table, the age at which the mother of a child in this sample became sexually active remains a strong predictor of when the

child becomes sexually active. This independent cross-generational linkage exists among both boys and girls, independent of observable social and economic factors in either generation.

Surprisingly, the wide range of contemporary maternal and family variables have little predictive value for differentiating children who have sex before age 14 from those who do not. The one significant proximate maternal predictor is the mother's employment: Children whose mother has spent more time at work over the years are more likely to have had early sexual intercourse. At least some other research that has reported this result suggests it may be related to effects of work on the amount of maternal-child interaction and maternal supervision in the home.<sup>16</sup> (Although the coefficient for boys attains statistical significance and that for girls does not, the difference between the effects on boys and girls is not significant.)

Although other studies have found that a mother's education per se affects her child's age at first sex, our data show no such result. In addition, neither the absence of a father figure nor the presence of grandparents is significantly related to early sexual activity. And although the results are in the expected direction, we found no association between economic well-being and the likelihood of early sex, possibly because of the relative homogeneity of the sample. Finally, urban residence, the one contextual factor in the equation, does not have a significant effect.

As in most other studies,<sup>17</sup> being black is a significant predictor of early sex in the overall sample. Thus, even in a high-risk group, racial differences in early sex remain after the introduction of controls for a variety of factors that often are considered to vary between racial groups. We found no difference between Hispanic children and white children in the likelihood of early sex. The results show, how-

**Table 5. Odds of having sex by age 14, by variable, according to gender**

Variable	All (N=451)	Boys (N=232)	Girls (N=219)
<b>Early maternal</b>			
Age at first sex	0.74**	0.76**	0.67**
Age at menarche	0.95	0.88	1.15
Early substance use	0.84	0.80	0.92
Early behavior score	0.90	0.87	0.79
<b>Contemporary maternal/family</b>			
Mother's yrs. of schooling, 1988	1.09	1.09	1.23
No. of children in home, 1988	1.12	1.15	1.16
Mother's avg. wks. worked per yr., 1979-1992	1.03**	1.05**	1.02
% of surveys mother's partner was present, 1979-1992	0.52	0.37	0.57
% of surveys grandparent was present, 1979-1992	0.85	0.59	0.73
Avg. family income-to-needs ratio, 1979-1992	0.77	0.80	0.59
Urban residence, 1988	1.69	1.89	1.05
<b>Child demographic</b>			
Male	4.34**	na	na
Black†	2.78*	8.03**	0.56
Hispanic†	1.01	2.31	0.36
Daughter's age at menarche	na	na	0.95
<b>Child psychosocial</b>			
"Good school" score	0.98	0.94	1.03
"Bad child" score	1.14	1.22	0.98
Substance use score	2.31**	3.59**	1.48
Future orientation	1.11	1.14	0.98
Loneliness score	2.41	4.50	1.72
Church attendance with friend‡	0.38**	0.32**	0.35*
Church attendance without friend‡	0.98	0.89	1.04
Opposite-sex friends less same-sex friends	1.00	1.00	1.01
Home emotional support score, 1988	1.00	1.00	1.01
<i>Intercept</i>	<i>1.14</i>	<i>3.05</i>	<i>4.08</i>
<i>Log likelihood ratio</i>	<i>83.48</i>	<i>56.15**</i>	<i>24.22</i>

\*p<.05. \*\*p<.01. †Reference category is non-Hispanic white children. ‡Reference category is church attendance less than twice a month. Notes: Significance of all variables except mother's years of schooling, race/ethnicity, mother's weeks worked and loneliness index is determined by one-tailed tests; na=not applicable.

ever, that the significant association between black race and early sexual activity exists only among boys. This gender difference, which may be culturally based, warrants further investigation. Unfortunately, our sample is not large enough to allow clarification of interactions between gender and race.

We shift now to the social and psychological characteristics of the child. As in other research, substance use (in this instance, a combined measure of cigarette and alcohol use) is a powerful and robust predictor of subsequent early sexual activity for the combined sample and for boys. This aggregate finding masks a gender variation: Supplementary analysis of the individual items (not presented here) indicates that early alcohol use is associated with early sexual activity for boys, while early smoking is a predictor of early sex for girls. It may be that this gender differential reflects different normative pressures within boys' and girls' "subcultures."

Our "bad child" index, which combines



a variety of socially unacceptable activities, does not attain significance. We ran additional equations using the individual items (not shown here), but none of them are significant predictors of early sexual activity.

Although our future orientation and loneliness items do not attain significance, there is indeed a pronounced religiosity-peer interaction. Boys and girls who attend church at least twice a month but who do not have any friends attending their church are no different from less frequent churchgoers in their likelihood of early sexual activity. However, children who attend church regularly and have peers attending the same church are less than half as likely to be sexually active by age 14 as their counterparts who do not attend church.

## Conclusions

In this article, we used unique longitudinal data for a national sample of high-risk adolescents and their mothers to examine how various dimensions of a child's background may be linked to early sexual activity. We considered several factors from the mother's adolescence and examined the impact of more recent maternal and family characteristics and behavior that occurred during the child's life but probably prior to his or her initiation of sexual activity.

We also had extensive information on the adolescent children's behavior and attitudes that for the most part preceded their initiation of sexual activity. This combination of more and less recent family, maternal and child attributes permitted us to explore longer and shorter term links between a child's background and his or her likelihood of becoming sexually active at an early age.

We have shown that sexual activity levels for young high-risk youth are elevated. In our sample of adolescents, most of whom are from disadvantaged backgrounds, many are repeating the behavior pattern of their mothers. If they also repeat the early childbearing pattern of their mothers, they will be doing so in a political and social environment that may well be less friendly than the one their parents encountered.<sup>18</sup>

Clearly, mothers transmit tendencies toward certain types of behavior to their children in various ways. Whether they do so by expressing approval or through their own behavior is not clear. However, this process appears to be independent of standard socioeconomic predictors. We also have presented evidence that for these high-risk children, early sex does not appear to be physiologically based. Our results also suggest that although some so-

cial attributes may be important predictors of early sex, positive feelings about school do not appear to affect the likelihood of early sex. We were surprised to find no association between our proxy measures of future orientation or delayed gratification and subsequent sexual activity.

The relatively wide range of social, psychological, economic and early background variables we have been able to incorporate into our research exceeds what many other researchers have had available. Although this data set includes factors that other researchers have hypothesized as being related to early sexual activity, we have found only limited statistical connections. The mother's age at sexual debut clearly has an effect, although the mechanism remains unclear. Early drinking among boys and early smoking among girls appear to be associated with early sex, but church networks seem to be a mitigating factor. We also have found evidence that negative peer influences can be damaging, although we cannot establish causality.

With one possible exception—maternal employment—we have found no evidence that contemporary family structure or economic well-being has a significant influence. Nevertheless, our findings are for a group of relatively high-risk adolescents, large proportions of whom are from low-income, single-parent families. Although it is encouraging that precocious sexual behavior may not be closely linked with relatively intractable economic and household structure factors, the cross-generational and peer links we have found may be no more readily susceptible to program or policy interventions.

## References

1. S. L. Hofferth, "Factors Affecting Initiation of Sexual Intercourse," in S. L. Hofferth and C. D. Hayes, eds., *Risking the Future: Adolescent Sexuality, Pregnancy and Childbearing*, Vol. 2, National Academy Press, Washington, D. C., 1987.
2. J. R. Udry, "Biological Predispositions and Social Control in Adolescent Sexual Behavior," *American Sociological Review*, 53:709-722, 1988; and S. F. Newcomer and J. R. Udry, "Mothers' Influence on the Sexual Behavior of Their Teenage Children," *Journal of Marriage and the Family*, 46:477-485, 1984.
3. F. F. Furstenberg, Jr., et al., "Race Differences in the Timing of Adolescent Intercourse," *American Sociological Review*, 52:511-518, 1987; J. R. Kahn, S. L. Hofferth and W. Kalsbeek, "National Studies of Teenage Sexual Activity: Evaluating the Comparability of Three National Surveys," *Demography*, 25:189-204, 1988; and B. C. Miller and K. A. Moore, "Adolescent Sexual Behavior, Pregnancy, and Parenting: Research Through the 1980s," *Journal of Marriage and the Family*, 52:1025-1044, 1990.
4. R. Jessor and S. L. Jessor, *Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth*, Academic Press, New York, 1977; E. Rosenbaum and D. B.

Kandel, "Early Onset of Adolescent Sexual Behavior and Drug Involvement," *Journal of Marriage and the Family*, 52:783-798, 1990; and S. A. Small and T. Luster, "Adolescent Sexual Activity: An Ecological, Risk-Factor Approach," *Journal of Marriage and the Family*, 56:181-192, 1994.

5. J. L. Lauritsen, "Explaining Race and Gender Differences in Adolescent Sexual Behavior," *Social Forces*, 72:859-884, 1994; R. D. Plotnick, "The Effects of Attitudes on Teenage Premarital Pregnancy and Its Resolution," *American Sociological Review*, 57:800-811, 1992; and S. A. Small and T. Luster, 1994, op. cit. (see reference 4)
6. J. O. G. Billy, K. L. Brewster and W. R. Grady, "Contextual Effects on the Sexual Behavior of Adolescent Women," *Journal of Marriage and the Family*, 56:387-404, 1994; R. D. Day, "The Transition to First Intercourse Among Racially and Culturally Diverse Youth," *Journal of Marriage and the Family*, 54:749-762, 1992; and A. Thornton and D. Camburn, "The Influence of the Family on Premarital Sexual Attitudes and Behavior," *Demography*, 24:323-340, 1987.
7. J. R. Udry, "The Nature of Gender," *Demography*, 31:561-574, 1994; —, "Biological Predispositions and Social Control in Adolescent Sexual Behavior," *American Sociological Review*, 53:709-722, 1988; and M. Zelnik, J. F. Kantner and K. Ford, *Sex and Pregnancy in Adolescence*, Sage Publications, Beverly Hills, Calif., 1981.
8. Centers for Disease Control and Prevention (CDC), "Health Risk Behaviors Among Persons Aged 12-21 Years—U. S., 1992," *Morbidity and Mortality Weekly Report*, 43:231-235, 1994; —, "Sexual Behavior Among High School Students—U. S., 1990," *Morbidity and Mortality Weekly Report*, 40:885-888, 1992; F. L. Mott and R. J. Haurin, "Linkages Between Sexual Activity and Alcohol and Drug Use Among American Adolescents," *Family Planning Perspectives*, 20:128-136, 1988; and S. L. Hofferth, 1987, op. cit. (see reference 1).
9. F. L. Sonenstein, J. H. Pleck and L. C. Ku, "Levels of Sexual Activity Among Adolescent Males in the United States," *Family Planning Perspectives*, 23:162-167, 1991.
10. CDC, 1992, op. cit. (see reference 8).
11. —, "Premature Sexual Experience Among Adolescent Women—U. S., 1970-1988," *Morbidity and Mortality Weekly Report*, 39:929-932, 1991.
12. R. Kominski and A. Adams, "Educational Attainment in the United States: March 1993 and 1992," *Current Population Reports*, Series P-20, No. 476, 1994, Table A, p. vii.
13. F. L. Mott and R. J. Haurin, 1988, op. cit. (see reference 8); J. L. Peterson and L. J. Crockett, "Adolescent Sexuality, Pregnancy and Child Rearing: Developmental Perspectives," in M. K. Rosenheim and M. Testa, eds., *Early Parenthood and Coming of Age in the 1990s*, Rutgers University Press, New Brunswick, N. J., 1992; and E. Rosenbaum and D. B. Kandel, 1990, op. cit. (see reference 4).
14. A. F. Abrahamse, P. A. Morrison and L. J. Waite, "Teenagers Willing to Consider Single Parenthood: Who Is at Greatest Risk?" *Family Planning Perspectives*, 20:13-18, 1988; and J. L. Peterson and L. J. Crockett, 1992, op. cit. (see reference 13).
15. R. Kominski and A. Adams, 1994, op. cit. (see reference 12).
16. S. L. Nock and P. W. Kingston, "Time with Children: The Impact of Couples' Work-Time Commitments," *Social Forces*, 67:59-63, 1988.
17. K. L. Brewster, "Racial Differences in Sexual Activity Among Adolescent Women: The Role of Neighborhood Characteristics," *American Sociological Review*, 59:408-424, 1994; C. D. Hayes, ed., *Risking the Future: Adolescent Sexuality, Pregnancy and Childbearing*, Vol. 1, National Academy Press, Washington, D. C., 1987; and F. L. Mott and R. J. Haurin, 1988, op. cit. (see reference 8).
18. F. F. Furstenberg, Jr., J. A. Levine and J. Brooks-Gunn, "The Children of Teenage Mothers: Patterns of Early Childbearing in Two Generations," *Family Planning Perspectives*, 22:54-61, 1990.