

The Effect of Older Siblings on Adolescent Behavior: Is it Siblings or Parents?

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Introduction

It is frequently suggested in the popular press that birth order is an important determinant of a wide variety of personality traits and economic advantages. Child development specialists have suggested that first-born children often feel pressured to succeed, while second-born children express feelings of inadequacy (Wallace, 1999). Economists have closely examined the relationship between birth order, sibling gender composition and outcomes such as educational attainment and adult earnings (Kessler, 1991; Behrman and Taubman, 1986; Butcher and Case, 1994)

More recently, researchers have turned their attention to the relationship between birth order and adolescent behaviors. These studies have found that, controlling for family size and background, children with older siblings are more likely to have used tobacco, alcohol and marijuana, and are more likely to have had sexual intercourse than firstborn children (Rodgers et al., 1992; Argys et al., forthcoming).

There are a number of plausible explanations for why having an older sibling might lead to substance use and sexual activity. For instance, it may be that older adolescents directly influence their younger siblings either purposely or inadvertently. Alternatively, parents may adopt different rules or attitudes toward their first-born children than toward subsequent offspring. In this paper we use data from the National Longitudinal Study of Adolescent health, which contains information on birth order, parental supervision, and risky activities, to determine the degree to which the associations between birth order and substance use, sexual activity, and other activities during adolescence are driven by the actions of parents as opposed to the presence of siblings. Our results indicate that firstborn children are more closely supervised by their parents than are their later-born

siblings and that this increased supervision reduces risky behaviors. However, the positive association between risky behaviors and the presence of older siblings diminishes little after controlling for parental supervision.

Birth Order and Child Outcomes

Research on birth order by economists initially focused on its effect on educational attainment and later labor market outcomes. (Olneck and Bills 1979; Blake 1981; Hauser and Sewell 1983; Behrman and Taubman 1986; Kessler 1991; Hanushek 1992). The results from these studies provided mixed evidence regarding the relationship between birth order and these economic outcomes, but highlighted the need for disentangling the influence of family size from birth-order estimates. Kessler (1991) points out that the probability of being a middle-born child is greater among children from larger families. To the extent that parents with many children invest less in all of their children, estimates that do not control for family size will leave the impression that later-born children are shortchanged with regard to education, when in fact it is a result of being born into a large family.

Most early studies found that, after controlling for family size, educational attainment was unrelated to birth order (Blake, 1981; Hauser and Sewell, 1983; Hanushek, 1992). Behrman and Taubman (1986) found that birth order was unrelated to earnings, although their results did suggest a negative relationship between birth order and years of education for women (but not for men). Kessler (1991) found no effect of birth order on either the level or growth rate of earnings, but recent research by Black et al. (2005), which reemphasized the importance of disentangling birth-order effects from

family-size effects, suggest that, in fact, birth-order exerts greater influence over educational attainment than does the number of siblings.

Though consistent birth-order effects on adult economic outcomes appear difficult to identify, researchers have found striking differences between the behaviors of first-born and later-born children during adolescence. Using data from the 1979 cohort of the National Longitudinal Survey of Youth (NLSY79), Rodgers et al. (1992) examined the effect of birth order and sibling sex composition on age at first intercourse. In models that control for family size, they found that younger siblings tended to initiate sexual intercourse earlier than older siblings.

In an analysis of more recent data from the NLSY 1997 cohort, Argys et al. (forthcoming) found that first-born male and female adolescents were less likely to be sexually active, and to have recently smoked cigarettes, drunk alcohol or used marijuana than their higher-parity counterparts. Argys et al. also examined the impact of older siblings on other behaviors including assault, theft and gang membership but found no systematic effects of birth-order on these outcomes.

Decreased substance use and sexual activity among first-born children is consistent with a number of hypotheses. Such activities may be more prevalent among adolescents with older siblings because they purposely introduce their younger brothers and sisters to these behaviors, or it may be that younger siblings are simply mimicking their older siblings and friends.¹ However, these findings are also consistent with the idea that parents invest less time and energy in supervising their younger offspring, perhaps

¹ Other studies have found an association between the behavior of an older sibling and the behavior of a younger siblings (Brook et al., 1991; Haurin and Mott 1990; Wang et al. 1995; Widmer 1997; Slomkowski et al. 2005; Oettinger, 2000). These studies, however, do not focus on birth-order, or in its simplest form, the presence of an older sibling, and do not account for the likely endogeneity of sibling behaviors.

because of diminishing returns to parenting, or perhaps because they have less energy to spend on their younger offspring. It may be that parents of firstborn children are excessively protective and then relax their vigilance with subsequent children.

If the relationship between birth order and risky behavior is driven by parental supervision, then we would expect to find that firstborns receive more supervision than their later-born brothers and sisters. Though many researchers have examined the determinants of parental time with children (Bryant and Zick, 1996; Bianchi and Robinson, 1997; Bianchi, 2000; Sayer, Bianchi and Robinson, 2004), only one has investigated the link between parental supervision and birth-order. Using data from the American Time Use Survey, Price (2005) finds that first-born children spend 20-30 more minutes with their parents than do second-born children. These results hold within age groups and family size and are robust to a number of sensitivity tests. If parental supervision is an important determinant of adolescent behavior, the previously documented differences in risky activities by birth order may, in part, be attributable to these differences in the time parents spend with their children.

Supervision and Child Outcomes

The importance of parental time as a contributor to educational achievement is well-documented (Leibowitz, 1977; Blau and Grossberg, 1992). Because data on labor market activities is much more prevalent than data on child supervision, most of these studies have focused on the impact of maternal employment and work schedules during early childhood on cognitive test scores.

The importance of parental supervision has captured the attention of the popular press since the early 1980s. Because so many children are raised in single-parent homes or in intact homes with two working parents, many children arrive home from school to an empty house. It is a widely held belief that such unsupervised children are engaged in undesirable activities that range from watching excessive television to more serious behaviors such as engaging in sexual activities and drinking alcohol (Mann, 1985; CASA, 1990). The National Center on Addiction and Drug Abuse reports that

“Latchkey’ children (those who care for themselves after school hours) are almost four times more likely to report having gotten drunk in the past month than non-‘latchkey’ children (9.1 percent versus 2.4 percent, respectively).” (CASA, 2003, p. 12)

Social scientists have examined the effect of a lack of parental supervision after school on behavioral outcomes for young children. Comparing behaviors of 9th grade students supervised after school by their mother, to similar students with another (non-maternal) adult caretaker to those who are alone after school, Richardson et al., (1993) found that substance use and other risky behaviors are highest for students who have no adult supervision after school. Vandall and Ramanan (1991) examined behavior problems indices for 5th graders and concluded that behavior problems were more pronounced for children who return home alone after school compared to those whose mothers are home or those who are supervised by another adult.

Economists, expressing concern that the findings described above might be driven by unobservable parent characteristics that lead to both reduced supervision and undesirable adolescent behaviors, or increased supervision in response to undesirable behaviors have recently examined the relationship between parental supervision and child behaviors. Estimating child-specific fixed effects models, Aizer (2004) finds that an increase in

adult supervision after school is associated with reductions in truancy, alcohol and marijuana use, theft and fighting among school-age children. In this paper we combine data on birth-order and parental supervision to examine their impacts on adolescent behavior.

Data

The primary data source for this project is the National Longitudinal Study of Adolescent Health (AddHealth), a nationally representative school-based² sample of adolescents who were in grades 7 through 12 in 1995. A stratified random sample of 20,745 of these youth were administered a comprehensive questionnaire covering numerous aspects of their school, family and private lives.³ Currently there are three waves of data available, 1995, 1996 and 2002. We use both waves 1 and 2 of these data because by wave 3, most respondents had aged into young adulthood and questions about parental supervision were not asked in this wave. In wave 1, there are 20,745 respondents, 16,706 of whom were selected to be re-interviewed at Wave II. Response rates are quite high.

To facilitate a comparison of our results with earlier studies linking birth-order to risky behaviors, we create dichotomous measures of substance use and sexual activity. Respondents to the AddHealth survey are asked about whether or not they recently (within the past month) used cigarettes, marijuana and other illegal drugs. We also create a dichotomous variable indicating whether or not the respondent has consumed alcohol

² A sample of 80 high schools and 52 middle schools from the U.S was selected with unequal probability. Incorporating systematic sampling methods and implicit stratification into the Add Health study design ensured this sample is representative of U.S. schools with respect to region of country, urbanicity, school size, school type, and ethnicity. (See Harris et al. 2003 for more information on the research design).

³ For details see the AddHealth website <http://www.cpc.unc.edu/projects/addhealth> for more information.

until “drunk or very high” more than once in the past month.⁴ Our measure of sexual activity is a dichotomous variable indicating whether or not the respondent had ever engaged in sexual intercourse.

The proportions of male and female students who reported having engaged in these activities are reported in Table 1. In keeping with what we know from other studies, females are slightly less likely to use substances, and somewhat less likely to have reported ever being sexually active.

In addition to the use of substances and sexual activity, the AddHealth provides information on a wealth of other risky or delinquent activities. We also examine differences in the likelihood that a student ever sold drugs, had ever stolen anything, had ever run away from home or had driven a car without permission. Gender differences in delinquent behaviors are more evident than in substance use and sexual activity. Males are typically much more likely to commit other delinquent activities. While 4 percent of girls report ever having sold drugs, over 10 percent of boys have reported this behavior. Males are also more likely to have committed theft and to have driven a car without permission. The one exception to this pattern is running away from home; 8 percent of girls in our sample have ever run away from home compared to only 6 percent of boys in our sample. To account for differences in propensities and allow for differences in the underlying causes, we estimate all of our models separately by gender.

Sibship size and sibling composition measures are available in the AddHealth from the household rosters. Respondents are asked to provide information on

⁴ Other measures of substance use are also available in the AddHealth data. We conduct our analysis on outcomes such as whether the respondent smoked at least one cigarette daily in the past month, or whether the respondent drank at least five drinks in a row within the past year. The results using these outcomes are similar to those reported in this paper.

relationship, gender, and age for all family members who regularly reside in the home. These questions are framed in such a way to include siblings who are temporarily away from the home. This survey method will capture siblings who are away attending college, but will not capture older siblings who are living independently. This information can be supplemented with information on the number of older brother and sisters. The responses to these questions are used to construct measures of the number of siblings and a dichotomous indicator equal to one if the respondent has at least one older sibling. An examination of the columns 2 and 3 and 5 and 6 in Table 2 illustrates the link between family size and the presence of an older sibling. Adolescents who report having an older sibling are more likely to come from larger families than those who do not have an older sibling. Specifically, 16.8% of boys with older siblings report having four siblings, compared with only 6.3% of boys without older siblings.

Because family size often varies systematically by socioeconomic status, and because family background may be associated with differences in the likelihood of risky behavior by adolescents, we control for other family characteristics. Adolescents with an older sibling are more likely to be African-American or Hispanic, to have somewhat less-educated parents, but are also more likely to live in a two-parent home.

Estimation

Since the positive relationship between the presence of an older sibling and risky behaviors has not been established in the AddHealth data, we begin by estimating a baseline model similar to that in Argys et al. (forthcoming):

$$(1) \quad B_i^* = \alpha S_i + \gamma' F_i + \beta' X_i + \varepsilon_i,$$

where S_i is a dichotomous variable equal to 1 if the adolescent has an older sibling; F_i is a vector of family size dummy variables; and other controls such as age, race, ethnicity and measures of socioeconomic status comprise the vector X_i . B_i^* is a latent variable representing an adolescent's unobserved propensity to engage in a particular behavior. When $B_i^* > 0$ an indicator variable, B_i , is observed to be equal 1, so that: $\text{Prob}(B_i = 1) = \text{Prob}(\alpha S_i + \gamma' F_i + \beta' X_i + \varepsilon_i > 0)$. If ε_i is normally distributed, then this equation can be estimated as a standard univariate probit model.

To confirm the findings of Argys et al, (forthcoming) and Rodgers et al. (1992), we expect to find that substance use and sexual activity are more likely for first-borns than for children with older siblings, holding constant family size, age and the other factors in X_i . In other words, we anticipate an estimate of α which is greater than zero in these models.

Tables 3a and 3b report the results of the estimation of equation (1) for the substance use and sexual activity outcomes for females and males, respectively. The use of all substances, alcohol tobacco, marijuana and other drugs are all more prevalent among males and females with older siblings than among comparable first-born adolescents, controlling for family size and family background. For example, both boys and girls who have an older sibling are nearly 6 percentage points more likely to have smoked in the past 30 days than an identical adolescent who has no older sibling. Both in terms of significance and magnitudes of the marginal effects, these results are in keeping with those found using data from the National Longitudinal Survey of Youth, 1997 cohort (Argys et al., forthcoming).

One difference between our initial results and those from the NLSY97 is that effect of having an older sibling on sexual activity is less pronounced. Though boys with older siblings are 3.3 percentage points more likely to have ever engaged in sexual intercourse than are boys without an older sibling, we find no significant relationship between the presence of an older sibling and sexual experience for girls.⁵

Finally, we examine the relationship between the presence of an older sibling and other undesirable behaviors, selling drugs, stealing, running away from home, and driving without a license. Marginal probabilities from these models are reported in Tables 4a and 4b. The links between having an older sibling and these delinquent activities are not consistent. For males, older siblings are associated with an increase in the likelihood that a younger brother sells drugs or drives without a license, but is unrelated to the probability that he had stolen things or had run away from home. Girls with an older sibling are more likely to steal or drive without permission than girls who have no older siblings.

Having established that the patterns of risky behaviors by the presence of an older sibling in the AddHealth data are similar to the patterns in other national data sets, we measure the extent to which these patterns are explained by differences in parental supervision. It has been suggested that parents may feel the necessity of supervising their first-born children personally even when they are adolescents. However, when subsequent children reach adolescence parents may allow their younger children to be supervised to some extent by their older siblings, or may simply be less vigilant and

⁵ Estimates of the effect of an older sibling on sexual activity were also smaller for girls than for boys in the NLSY97, however, the effect for girls is statistically significant.

require less supervision of their 'higher-order' children. We explore parental supervision patterns here.

The AddHealth data set is uniquely suited to our research since it is a nationally representative sample of adolescents and contains information on behaviors, family composition and parental supervision. Parental supervision data are obtained from a series of questions regarding the presence of a parent at various times in a typical day. Specifically, each adolescent is asked, in both waves 1 and 2, questions pertaining to their resident mother and resident father. This person may in fact not be their biological mother or father but simply the person who acts as a mother or father to the adolescent. Respondents are asked separately how often each of their resident parents are home before they go to school, after they return from school and when they go to bed. Possible responses are 'always', 'most of the time', 'some of the time', 'almost never' and 'never'. We code those who state that they are supervised by either parent 'always' or 'most of the time' as receiving supervision for that time period. Creating separate supervision variables for each of the time periods allows us to determine when parental supervision is most important.

For parental supervision to explain some or all of the differences in the prevalence of risky behaviors during adolescence, we would expect younger siblings to report lower levels of supervision than first-born children. In Table 5 we report the proportion of respondents who indicate substantial supervision by their parents before school, after school and at bedtime by gender and the presence of an older sibling. Because of the concern that large families differ systematically from small families, and because respondents from large families are more likely to have an older sibling, the supervision

statistics are reported separately by family size. Most children report a parent present most of the time before school and at bedtime, but little more than half of these adolescents indicate that a parent is usually home after school. In most cases, the proportion who report substantial supervision is greater for adolescents with older siblings than without, but without exception, these differences are quite small. To further verify these patterns of parental supervision we regress supervision in each time period on the presence of an older sibling controlling for family size and all of the individual and family characteristics in Table 1. The results from these regressions (not shown here, but available from the authors) confirm our findings that supervision is less likely among children with an older sibling. These effects are significant and are largest for after-school supervision.

Having established that parents are more likely to supervise their first-born children, we add these supervision variables to our models of risky adolescent behaviors. Tables 6a and 6b report selected marginal probabilities from probit regressions for substance use and sexual activity. For the sake of brevity, we report only the marginal probabilities for the presence of an older sibling, and the supervision variables, although the regressions include all variables in previous models.

In virtually every case, parental supervision is associated with a reduction in substance use and sexual activity, though the magnitude and significance vary by the timing of supervision, gender and the activity under study.⁶ For both males and females, use of all substances is lower for children who are supervised by a parent after school, though there is no significant effect of after-school supervision on sexual activity. Many

⁶ Only the coefficient for parental supervision before school in the marijuana equation for males is positive. However, it very small and not significant.

of these effects are sizeable. For instance, afterschool supervision results in nearly a 3 percentage point decrease in the probability of marijuana use for both boys and girls. Parental supervision at bedtime also serves as a deterrent to the use of substances and sexual activity for some groups. Bedtime supervision is associated with a large reduction in the use of marijuana and other drugs for males and for alcohol, marijuana and other drug use as well as for sexual activity for females. Parental supervision before school has less impact on these behaviors, although it is associated with a decrease in sexual activity for both boys and girls, and a reduction in smoking for girls.

Parental supervision similarly reduces the incidence of other the other delinquent behaviors that we examine in our analyses. Tables 7a and 7b reveal that parental supervision after school and at bedtime significantly reduces the probability of most of these behaviors for both boys and girls. Supervision in the mornings before school also reduces the probability of selling drugs for both males and females, and also reduces the probability of running away from home and driving without permission for females. Similar to the results presented in tables 6a and 6b, the inclusion of parental supervision variables does little to reduce the impact of having an older sibling on the probability of engaging in these behaviors.

Where we use similar outcome measures, our results are consistent with Aizer's (2004) findings. Her results indicated that adult supervision after school was associated with a three to four percentage point reduction in the probability of having stolen something. Though Aizer's sample from the National Longitudinal Survey of Youth Child and Young Adult supplement is slightly younger than our sample, the results are close to our estimates in which supervision is associated with a four percentage point

reduction in stealing. The magnitude of Aizer's estimates in the stealing equation are little changed when she estimates a fixed effects model.⁷ Aizer's estimates of the impact of adult supervision on substance use in OLS models are somewhat smaller than our estimates; she found that supervised children were about 2 percentage point less likely to report drinking or getting high than unsupervised children. This difference may be explained by the fact that Aizer's sample is substantially younger than our sample (ages 10-14, compared to grades 7 – 12) and drinking and marijuana use are much less prevalent among younger children.

Because the focus of our work is to ascertain whether differences in parental supervision favoring firstborn children explains differences in risky behaviors by birth order, we turn our attention to the marginal probabilities from the older sibling variable. If the bulk of the relationship between risky behaviors and having an older sibling is due to the fact that first-born children are more diligently supervised than are later-born children, we would expect that the estimated effect of having an older sibling is substantially smaller in models that include measures of parental supervision. The results in tables 6a and 6b and 7a and 7b offer little support for this conjecture. The estimated marginal probabilities from models that do control for parental supervision are insignificantly smaller than the estimates from models that omitted the parental supervision variables. This pattern of results holds for all of our outcomes, substance

⁷ Out of concern that parental supervision is correlated with lax parenting, Aizer estimates child-specific fixed effects models. Many of the effects of supervision remain in the fixed effects models, but some drop in magnitude and significance. For our study, however, the endogeneity of parental supervision is less relevant. It will only affect our test of the causes of birth order differences in risky behaviors if the degree to which parental supervision is related to behaviors differs by birth order. Furthermore, the fact that Aizer's result holds, for the most part, even after including individual fixed effects suggests that the endogeneity biases are not serious.

use, sexual activity and delinquent behaviors and suggests that the relationship between older siblings and risky behaviors is not driven by differences in parental supervision.

We examine one additional outcome. Economists studying birth-order initially focused on the link between birth order and educational outcomes. The Adolescent Health data contain information on a student's grade in four different subjects—english (or language arts), mathematics, history and science. We use these self-reported grades to create a grade point average on a four point scale⁸

Table 8 reports coefficients estimated from an Ordinary Least Squares regression of grade point average (GPA) on the presence of an older sibling and the other individual and family characteristics. The results are consistent and significant for males and females. The presence of an older sibling reduces the GPA by an average of 6.5 percent and this effect is unchanged when parental supervision is added to the model. Parental supervision itself matters for males—those males whose parents supervise them after school and before bedtime have higher GPAs than those males who are not supervised during that time period. This may reflect the fact that those parents who are supervising are making sure that homework is being done and that their son is getting adequate rest at night, both of which are likely to increase a student's GPA. For females, only supervision at bedtime matters. Neither of the parental supervision effects are large enough to fully offset the negative impact of having an older sibling on GPA.

Family size exerts no effect on GPA in the presence of controls for birth order and parental supervision. This is similar to the findings of Conely and Glauber (2004) who found that for first-born children, family size did not have an effect on two measures of education: whether or not a student repeated a grade or went to a private school.

⁸ This is the same method used by Fryer and Torelli, 2005.

Conclusion

Previous studies have established that having an older sibling is associated with an increase in a variety of risky behaviors but none of these studies are able to pinpoint the cause of this effect. (Rodgers et al. 1992, Argys et al., forthcoming). There are at least two possible explanations for these findings. First, older siblings may induce their younger siblings to partake in risky behaviors—either by explicitly introducing them to these behaviors or simply by exposure—the younger sibling may mimic what the older sibling is doing even if the older sibling does not try to entice the younger one into these behaviors. A competing explanation is that parents may closely supervise their oldest children but provide less supervision to later born children either because they allow the older children to supervise the younger children or they just become more relaxed as parents and thus less vigilant.

Our findings indicate unequivocally that the presence of an older sibling tends to have a positive effect on engaging in a variety of negative behaviors and that this effect is largely unexplained by parental supervision. In addition, those adolescents, both male and female, with older siblings have GPAs about 6.5 percentage points below their peers without older siblings, even after controlling for parental supervision.

These results are potentially disturbing for parents who may hope that supervising their children is enough to keep them out of trouble. Policymakers should also be concerned as it seems as if parental supervision is not the panacea that has been hoped. An important question that must now be addressed if we wish to reduce these types of behaviors among adolescents is when these behaviors take place. If an adolescent is regularly supervised during the day then perhaps the activities we have studied here take

place at school or at a work place. This introduces a different set of policy implications and is a fruitful direction for future research.

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Table 1. Sample Means of Child Outcomes, by Gender and the Presence of an Older Sibling

	<u>Males</u>			<u>Females</u>		
	Full Sample	Has No Older Sibling	Has an Older Sibling	Full Sample	Has No Older Sibling	Has an Older Sibling
Smoked Cigarettes in the past 30 days	0.274	0.273	0.274	0.266	0.266	0.265
Drank alcohol during past year	0.288	0.292	0.282	0.235	0.245	0.219
Smoked Marijuana in the past 30 days	0.195	0.199	0.188	0.170	0.174	0.163
Used other illegal drugs in the past 30 days	0.047	0.051	0.041	0.042	0.042	0.040
Ever had sex	0.409	0.433	0.370	0.384	0.428	0.319
Ever sold drugs	0.101	0.106	0.092	0.042	0.045	0.037
Ever stolen anything	0.245	0.241	0.250	0.200	0.192	0.211
Ever run away from home	0.060	0.063	0.055	0.083	0.091	0.071
Drove a car without permission	0.107	0.101	0.117	0.078	0.072	0.085
Grade point average	2.663	2.671	2.649	2.881	2.885	2.876
	(0.768)	(0.767)	(0.771)	(0.747)	(0.748)	(0.744)

Standard deviations are shown in parentheses.

Table 2. Sample Means, by Gender and the Presence of an Older Sibling

	<u>Males</u>			<u>Females</u>		
	Full Sample	Has No Older Sibling	Has an Older Sibling	Full Sample	Has No Older Sibling	Has an Older Sibling
Has an Older Sibling	0.384	0.000	1.000	0.397	0.000	1.000
One-child family	0.203	0.330	0.000	0.209	0.347	0.000
Two-child family	0.382	0.378	0.387	0.378	0.376	0.381
Three-child family	0.259	0.201	0.353	0.249	0.186	0.344
Four-child family	0.104	0.063	0.168	0.109	0.064	0.177
Five or more children in family	0.052	0.028	0.092	0.055	0.027	0.098
Parental supervision before school	0.805	0.798	0.817	0.809	0.799	0.825
Parental supervision after school	0.563	0.552	0.580	0.569	0.556	0.590
Parental supervision at bedtime	0.939	0.932	0.950	0.928	0.919	0.942
Female	0.000	0.000	0.000	1.000	1.000	1.000
White	0.612	0.635	0.576	0.600	0.612	0.583
Black	0.209	0.208	0.211	0.235	0.237	0.231
Other Race	0.178	0.157	0.213	0.165	0.151	0.186
Hispanic	0.167	0.155	0.185	0.162	0.154	0.174
14 years old	0.232	0.198	0.286	0.259	0.224	0.312
15 years old	0.172	0.161	0.191	0.180	0.170	0.195
16 years old	0.207	0.206	0.209	0.204	0.204	0.203
17 years old	0.206	0.224	0.177	0.195	0.213	0.169
18 years old	0.149	0.172	0.112	0.135	0.159	0.101
19 years old	0.034	0.040	0.024	0.026	0.030	0.021
Lives in an urban area	0.360	0.356	0.366	0.373	0.372	0.375
Lives in a rural area	0.240	0.246	0.230	0.240	0.244	0.233
Lives in a suburban area	0.400	0.398	0.404	0.387	0.384	0.392

Standard deviations are shown in parentheses.

Table 2. Sample Means, by Gender and the Presence of an Older Sibling (Continued)

	<u>Males</u>			<u>Females</u>		
	Full Sample	Has No Older Sibling	Has an Older Sibling	Full Sample	Has No Older Sibling	Has an Older Sibling
Lives with two parents	0.425	0.408	0.453	0.402	0.378	0.440
Lives with one parent	0.249	0.274	0.209	0.259	0.288	0.213
Lives without parents	0.326	0.319	0.337	0.339	0.334	0.347
Parent college educated	0.251	0.250	0.251	0.233	0.232	0.234
Parent attended some college	0.134	0.146	0.114	0.139	0.145	0.128
Parent graduated from high school	0.197	0.198	0.196	0.197	0.206	0.185
Parent did not finish high school	0.073	0.072	0.074	0.078	0.076	0.081
Father other professions	0.531	0.518	0.551	0.498	0.475	0.532
Father not working	0.039	0.036	0.043	0.037	0.032	0.044
Father in a managerial or professional occupation	0.166	0.166	0.166	0.155	0.144	0.171
Mother other profession	0.555	0.549	0.565	0.564	0.555	0.577
Mother not working	0.134	0.128	0.144	0.144	0.143	0.145
Mother in a managerial or professional occupation	0.247	0.243	0.252	0.239	0.235	0.246
Family received welfare	0.099	0.096	0.105	0.108	0.109	0.108
Total Family Income	35.762 (50.095)	35.977 (50.525)	35.417 (49.399)	34.980 (49.834)	34.430 (48.435)	35.815 (51.878)
Adolescent's age	15.859 (1.681)	16.04 (1.661)	15.569 (1.672)	15.716 (1.686)	15.892 (1.672)	15.448 (1.673)
Parents' age	42.858 (6.324)	42.361 (6.629)	43.655 (5.712)	42.617 (6.345)	42.131 (6.699)	43.355 (5.689)

Standard deviations are shown in parentheses.

Table 3a. Determinants of Substance Use and Sexual Activity – Females

	Smoked Cigarettes in the past 30 days	Drank alcohol during past year	Smoked Marijuana in the past 30 days	Used other illegal drugs in the past 30 days	Ever had sex
Has an Older Sibling	0.059*** (0.01)	0.029*** (0.010)	0.030*** (0.008)	0.007** (0.003)	0.009 (0.014)
One-child family	0.133*** (0.026)	0.111*** (0.026)	0.096*** (0.021)	0.038*** (0.011)	0.215*** (0.026)
Two-child family	0.062*** (0.022)	0.051*** (0.019)	0.040** (0.017)	0.019*** (0.008)	0.126*** (0.025)
Three-child family	0.062*** (0.022)	0.040** (0.020)	0.044** (0.019)	0.020*** (0.008)	0.100*** (0.025)
Four-child family	0.027 (0.024)	0.034 (0.023)	0.023 (0.019)	0.015 (0.011)	0.063*** (0.022)
Black	-0.227*** (0.014)	-0.167*** (0.011)	-0.071*** (0.017)	-0.047*** (0.003)	0.099*** (0.018)
Other Race	-0.087*** (0.019)	-0.055*** (0.020)	-0.028* (0.016)	-0.010*** (0.003)	-0.073*** (0.019)
Hispanic	-0.088*** (0.022)	0.002 (0.027)	-0.001 (0.025)	0.007 (0.010)	-0.021 (0.021)
Mother's age	0.025*** (0.005)	0.042*** (0.004)	0.021*** (0.003)	0.003*** (0.001)	0.123*** (0.005)
Lives in an urban area	-0.013 (0.013)	-0.041*** (0.011)	-0.021** (0.010)	-0.011*** (0.003)	0.002 (0.012)
Lives in a rural area	-0.006 (0.012)	-0.027** (0.011)	-0.046*** (0.011)	-0.009** (0.003)	0.002 (0.015)
Lives with one parent	0.021* (0.012)	0.027** (0.012)	0.023** (0.010)	0.015*** (0.005)	-0.001 (0.016)
Lives without parents	-0.026 (0.023)	0.008 (0.023)	-0.015 (0.018)	0.002 (0.009)	-0.058** (0.029)

Table 3a. Determinants of Substance Use and Sexual Activity – Females (Continued)

	Smoked Cigarettes in the past 30 days	Drank alcohol during past year	Smoked Marijuana in the past 30 days	Used other illegal drugs in the past 30 days	Ever had sex
Parent attended some college	0.024* (0.013)	0.048*** (0.013)	0.022* (0.013)	0.004 (0.004)	0.049*** (0.013)
Parent graduated from high school	0.05*** (0.011)	0.036*** (0.012)	0.001 (0.011)	-0.002 (0.004)	0.075*** (0.015)
Parent did not finish high school	0.026 (0.016)	0.025 (0.016)	-0.012 (0.015)	-0.008* (0.004)	0.062*** (0.019)
Father other profession	0.017 (0.013)	0.003 (0.013)	-0.018* (0.011)	-0.001 (0.004)	0.035** (0.016)
Father not working	0.065** (0.03)	-0.042* (0.021)	-0.043** (0.016)	0.003 (0.008)	0.094*** (0.031)
Mother other profession	-0.002 (0.011)	-0.006 (0.01)	0.012 (0.008)	0.001 (0.003)	0.032*** (0.012)
Mother not working	0.007 (0.013)	-0.020* (0.011)	-0.003 (0.010)	-0.001 (0.004)	0.035** (0.016)
Family received welfare	0.045*** (0.013)	0.022 (0.014)	0.034*** (0.012)	0.006 (0.005)	0.025 (0.017)
Total Family Income	0.0001 (0.0001)	0.0002*** (0.00008)	0.0002** (0.00007)	0.00001 (0.00002)	-0.0002 (0.0001)
Parents' age	-0.002*** (0.001)	-0.002*** (0.001)	-0.001* (0.001)	-0.0003 (0.0002)	-0.004*** (0.001)
Wave One	-0.07*** (0.016)	-0.017 (0.012)	-0.138*** (0.012)	-0.014** (0.006)	-0.079*** (0.019)
Number of observations	16524	16524	16524	16524	16524

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Controls also include dichotomous variables identifying missing values for categorical variables.

Table 3b. Determinants of Substance Use and Sexual Activity – Males

	Smoked Cigarettes in the past 30 days	Drank alcohol during past year	Smoked Marijuana in the past 30 days	Used other illegal drugs in the past 30 days	Ever had sex
Has an Older Sibling	0.056*** (0.008)	0.059*** (0.009)	0.029*** (0.009)	0.001 (0.004)	0.033*** (0.012)
One-child family	0.045* (0.024)	0.068*** (0.022)	0.059*** (0.022)	0.012 (0.011)	0.125*** (0.024)
Two-child family	0.005 (0.021)	0.028 (0.021)	0.031 (0.021)	0.003 (0.010)	0.054*** (0.021)
Three-child family	-0.013 (0.02)	0.025 (0.020)	0.023 (0.020)	-0.001 (0.008)	0.025 (0.021)
Four-child family	-0.015 (0.02)	0.025 (0.022)	-0.008 (0.020)	0.001 (0.009)	0.011 (0.021)
Black	-0.174*** (0.014)	-0.202*** (0.013)	-0.011 (0.013)	-0.042*** (0.004)	0.255*** (0.018)
Other Race	-0.066*** (0.017)	-0.081*** (0.017)	0.002 (0.014)	-0.010** (0.004)	-0.059*** (0.016)
Hispanic	-0.052* (0.028)	0.013 (0.031)	0.001 (0.027)	0.001 (0.006)	0.106*** (0.019)
Mother's age	0.041*** (0.004)	0.081*** (0.004)	0.035*** (0.003)	0.010*** (0.001)	0.120*** (0.004)
Lives in an urban area	-0.013 (0.014)	-0.039*** (0.015)	-0.028** (0.011)	-0.010** (0.004)	-0.012 (0.014)
Lives in a rural area	0.021* (0.012)	0.014 (0.013)	-0.027** (0.012)	-0.004 (0.005)	0.022 (0.014)
Lives with one parent	0.022 (0.016)	0.052*** (0.015)	0.011 (0.010)	0.013** (0.006)	-0.020 (0.015)
Lives without parents	-0.023 (0.028)	0.062* (0.035)	-0.002 (0.020)	-0.004 (0.011)	-0.101*** (0.028)

Table 3b. Determinants of Substance Use and Sexual Activity – Males (Continued)

	Smoked Cigarettes in the past 30 days	Drank alcohol during past year	Smoked Marijuana in the past 30 days	Used other illegal drugs in the past 30 days	Ever had sex
Parent attended some college	0.025* (0.013)	0.030** (0.015)	0.018 (0.012)	-0.005 (0.005)	0.068*** (0.014)
Parent graduated from high school	0.033** (0.014)	0.014 (0.012)	0.009 (0.011)	0.003 (0.005)	0.084*** (0.015)
Parent did not finish high school	0.022 (0.018)	0.023 (0.016)	0.004 (0.017)	-0.005 (0.008)	0.064** (0.027)
Father other profession	0.012 (0.013)	-0.012 (0.014)	0.006 (0.010)	-0.006 (0.004)	0.031** (0.014)
Father not working	0.018 (0.026)	0.029 (0.029)	0.003 (0.019)	-0.011 (0.007)	0.027 (0.026)
Mother other profession	-0.004 (0.011)	-0.016 (0.011)	-0.011 (0.008)	0.001 (0.004)	-0.001 (0.011)
Mother not working	0.001 (0.014)	-0.012 (0.013)	-0.009 (0.012)	-0.003 (0.005)	0.031* (0.016)
Family received welfare	0.022 (0.016)	-0.003 (0.017)	0.030** (0.014)	0.012** (0.006)	0.033* (0.019)
Total Family Income	-0.0001 (0.0001)	0.0003*** (0.00008)	0.00008 (0.00007)	0.00004 (0.00004)	-0.0003** (0.0001)
Parents' age	-0.003*** (0.001)	-0.002** (0.001)	-0.001** (0.001)	-0.0003 (0.0003)	-0.004*** (0.001)
Wave One	-0.055*** (0.016)	0.037*** (0.014)	-0.115*** (0.011)	-0.002 (0.007)	-0.061*** (0.019)
Number of observations	15723	15723	15723	15723	15723

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Controls also include dichotomous variables identifying missing values for categorical variables.

Table 4a. Determinants of Delinquent Behaviors – Females

	Ever sold drugs	Ever stolen anything	Ever run away from home	Drove a car without permission
Has an Older Sibling	0.004 (0.004)	0.022*** (0.008)	-0.003 (0.005)	0.024*** (0.005)
One-child family	0.039*** (0.014)	0.028* (0.017)	0.018 (0.013)	0.029*** (0.011)
Two-child family	0.022** (0.010)	-0.010 (0.015)	-0.003 (0.011)	0.006 (0.009)
Three-child family	0.016* (0.010)	0.005 (0.014)	-0.006 (0.010)	-0.004 (0.009)
Four-child family	0.017* (0.012)	0.006 (0.018)	0.005 (0.013)	0.011 (0.011)
Black	-0.015*** (0.004)	-0.018 (0.014)	-0.016** (0.006)	0.003 (0.006)
Other Race	-0.005 (0.006)	0.044*** (0.014)	-0.0004 (0.007)	0.011** (0.006)
Hispanic	0.011 (0.011)	0.019 (0.013)	0.014 (0.009)	0.019** (0.010)
Mother's age	0.002** (0.001)	-0.014*** (0.003)	0.004*** (0.002)	0.001 (0.002)
Lives in an urban area	-0.013*** (0.005)	-0.016* (0.009)	-0.003 (0.005)	-0.010** (0.005)
Lives in a rural area	-0.011** (0.005)	-0.047*** (0.012)	-0.016** (0.006)	-0.008 (0.005)
Lives with one parent	-0.002 (0.005)	0.014 (0.011)	0.002 (0.007)	0.012* (0.007)
Lives without parents	-0.013 (0.008)	0.004 (0.022)	-0.034** (0.015)	0.008 (0.013)
Parent attended some college	0.006 (0.006)	0.027** (0.012)	0.013* (0.007)	0.010 (0.007)
Parent graduated from high school	-0.002 (0.005)	0.018 (0.012)	0.017*** (0.006)	-0.003 (0.006)
Parent did not finish high school	-0.006 (0.006)	0.011 (0.016)	0.010 (0.008)	-0.011 (0.008)
Father other profession	0.007 (0.006)	0.020* (0.012)	0.009 (0.006)	0.0001 (0.007)
Father not working	-0.006 (0.008)	0.006 (0.022)	0.031** (0.016)	-0.014 (0.011)

Table 4a. Determinants of Delinquent Behaviors – Females

	Ever sold drugs	Ever stolen anything	Ever run away from home	Drove a car without permission
Mother other profession	0.007* (0.004)	0.009 (0.009)	0.009 (0.006)	0.004 (0.006)
Mother not working	0.011** (0.006)	-0.025** (0.012)	0.006 (0.008)	0.0002 (0.007)
Family received welfare	0.013** (0.006)	0.042*** (0.011)	0.019*** (0.008)	0.022*** (0.008)
Total Family Income	0.00002 (0.00002)	-0.00006 (0.0001)	-0.00006 (0.00006)	-0.00003 (0.00005)
Parents' age	-0.00003 (0.0003)	0.0005 (0.0005)	-0.001*** (0.0004)	0.001*** (0.0004)
Wave One	-0.012** (0.006)	0.009 (0.015)	-0.002 (0.009)	0.015* (0.008)
Number of observations	16524	16524	16524	16524

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Controls also include dichotomous variables identifying missing values for categorical variables.

Table 4b. Determinants of Delinquent Behaviors – Males

	Ever sold drugs	Ever stolen anything	Ever run away from home	Drove a car without permission
Has an Older Sibling	0.014** (0.006)	0.006 (0.009)	-0.003 (0.004)	0.023*** (0.006)
One-child family	0.041*** (0.016)	-0.016 (0.022)	-0.011 (0.009)	0.004 (0.016)
Two-child family	0.009 (0.014)	-0.022 (0.022)	-0.020** (0.008)	0.0002 (0.014)
Three-child family	0.004 (0.014)	-0.016 (0.023)	-0.020** (0.008)	0.001 (0.014)
Four-child family	-0.006 (0.013)	-0.021 (0.024)	-0.013 (0.009)	-0.006 (0.019)
Black	0.013 (0.010)	-0.031** (0.013)	-0.007 (0.006)	0.006 (0.008)
Other Race	0.004 (0.010)	0.024 (0.016)	0.010* (0.006)	0.018 (0.012)
Hispanic	0.023 (0.022)	0.026* (0.014)	-0.008 (0.006)	0.009 (0.010)
Mother's age	0.020*** (0.002)	-0.007*** (0.003)	0.002* (0.001)	0.011*** (0.002)
Lives in an urban area	-0.011 (0.008)	-0.016 (0.010)	-0.002 (0.004)	0.010 (0.007)
Lives in a rural area	-0.02** (0.008)	-0.045*** (0.012)	-0.009* (0.005)	-0.010 (0.008)
Lives with one parent	0.009 (0.008)	0.039*** (0.012)	-0.005 (0.008)	0.021** (0.011)
Lives without parents	-0.025* (0.015)	-0.027 (0.027)	-0.034** (0.013)	-0.013 (0.016)
Parent attended some college	0.021** (0.009)	0.021* (0.011)	0.004 (0.006)	0.005 (0.008)
Parent graduated from high school	0.005 (0.008)	-0.003 (0.010)	0.007 (0.006)	-0.007 (0.007)
Parent did not finish high school	0.003 (0.011)	0.006 (0.016)	0.010 (0.009)	0.006 (0.011)
Father other profession	-0.003 (0.007)	0.007 (0.011)	0.005 (0.006)	0.010 (0.008)
Father not working	-0.005 (0.014)	0.011 (0.022)	-0.004 (0.010)	0.005 (0.017)

Table 4b. Determinants of Delinquent Behaviors – Males (Continued)

	Ever sold drugs	Ever stolen anything	Ever run away from home	Drove a car without permission
Mother other profession	-0.004 (0.006)	-0.012 (0.010)	-0.002 (0.005)	-0.017*** (0.006)
Mother not working	-0.003 (0.008)	-0.036*** (0.013)	0.005 (0.007)	-0.012 (0.007)
Family received welfare	0.013 (0.011)	0.036*** (0.013)	0.020*** (0.007)	0.0002 (0.010)
Total Family Income	0.00004 (0.00005)	0.00006 (0.0001)	-0.00006 (0.00004)	0.00005 (0.00005)
Parents' age	-0.002*** (0.001)	-0.0001 (0.001)	-0.001*** (0.0004)	-0.0005 (0.0005)
Wave One	-0.012 (0.009)	0.067*** (0.014)	-0.005 (0.009)	0.031*** (0.011)
Number of observations	15723	15723	15723	15723

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Controls also include dichotomous variables identifying missing values for categorical variables.

Table 5. Proportion Reporting Parental Supervision, by Gender, Family Size and the Presence of an Older Sibling

	<u>Two-Child Family</u>			
	<u>Females</u>		<u>Males</u>	
	Has No Older Sibling	Has an Older Sibling	Has No Older Sibling	Has an Older Sibling
Parental supervision before school	0.823	0.809	0.807	0.789
Parental supervision after school	0.544	0.542	0.544	0.508
Parental supervision at bedtime	0.946	0.940	0.951	0.941
Number of observations	3745	2500	3666	2336

	<u>Three-Child Family</u>			
	<u>Females</u>		<u>Males</u>	
	Has No Older Sibling	Has an Older Sibling	Has No Older Sibling	Has an Older Sibling
Parental supervision before school	0.839	0.837	0.840	0.813
Parental supervision after school	0.599	0.581	0.598	0.575
Parental supervision at bedtime	0.947	0.940	0.957	0.952
Number of observations	1855	2257	1949	2128

	<u>Four-Child Family</u>			
	<u>Females</u>		<u>Males</u>	
	Has No Older Sibling	Has an Older Sibling	Has No Older Sibling	Has an Older Sibling
Parental supervision before school	0.840	0.820	0.862	0.857
Parental supervision after school	0.674	0.628	0.683	0.670
Parental supervision at bedtime	0.939	0.950	0.954	0.957
Number of observations	642	1162	615	1013

Table 6a. Determinants of Substance Use and Sexual Activity, Selected Marginal Probabilities – Females

	Smoked Cigarettes in the past 30 days	Drank alcohol during past year	Smoked Marijuana in the past 30 days	Used other illegal drugs in the past 30 days	Ever had sex
Has an Older Sibling	0.058*** (0.01)	0.028*** (0.01)	0.029*** (0.008)	0.007** (0.003)	0.007 (0.014)
Parental supervision before school	-0.019 (0.013)	-0.006 (0.01)	-0.008 (0.009)	-0.003 (0.003)	-0.054*** (0.013)
Parental supervision after school	-0.023*** (0.008)	-0.036*** (0.008)	-0.017** (0.008)	-0.007** (0.003)	-0.013 (0.010)
Parental supervision at bedtime	-0.021 (0.017)	-0.052*** (0.015)	-0.029** (0.014)	-0.012* (0.007)	-0.046** (0.023)
Number of observations	16524	16524	16524	16524	16524

Table 6b. Determinants of Substance Use and Sexual Activity, Selected Marginal Probabilities – Males

	Smoked Cigarettes in the past 30 days	Drank alcohol during past year	Smoked Marijuana in the past 30 days	Used other illegal drugs in the past 30 days	Ever had sex
Has an Older Sibling	0.055*** (0.008)	0.056*** (0.01)	0.027*** (0.009)	0.0004 (0.003)	0.032*** (0.012)
Parental supervision before school	-0.03*** (0.011)	-0.014 (0.011)	0.001 (0.008)	-0.002 (0.004)	-0.027* (0.016)
Parental supervision after school	-0.018** (0.008)	-0.042*** (0.008)	-0.029*** (0.007)	-0.01*** (0.004)	-0.005 (0.011)
Parental supervision at bedtime	-0.0001 (0.017)	-0.005 (0.018)	-0.047*** (0.019)	-0.023*** (0.007)	-0.017 (0.027)
Number of observations	15723	15723	15723	15723	15723

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Tables control for the same variables that appear in tables 3a and 3b. Controls also include dichotomous variables identifying missing values for categorical variables.

Table 7a. Determinants of Delinquent Behaviors, Selected Marginal Probabilities – Females

	Ever sold drugs	Ever stolen anything	Ever run away from home	Drove a car without permission
Has an Older Sibling	0.003 (0.003)	0.020*** (0.008)	-0.004 (0.005)	0.023*** (0.005)
Parental supervision before school	-0.007** (0.004)	-0.011 (0.009)	-0.011** (0.005)	-0.011** (0.005)
Parental supervision after school	-0.006 (0.004)	-0.041*** (0.010)	-0.001 (0.004)	-0.014*** (0.005)
Parental supervision at bedtime	-0.018*** (0.008)	-0.037** (0.016)	-0.029*** (0.012)	-0.025** (0.011)
Number of observations	16524	16524	16524	16524

Table 7b. Determinants of Delinquent Behaviors, Selected Marginal Probabilities – Males

	Ever sold drugs	Ever stolen anything	Ever run away from home	Drove a car without permission
Has an Older Sibling	0.012** (0.006)	0.004 (0.009)	-0.004 (0.004)	0.022*** (0.006)
Parental supervision before school	-0.011* (0.006)	0.001 (0.009)	-0.005 (0.005)	-0.0004 (0.007)
Parental supervision after school	-0.018*** (0.005)	-0.04*** (0.008)	-0.012*** (0.004)	-0.011** (0.005)
Parental supervision at bedtime	-0.031*** (0.013)	-0.021 (0.02)	-0.028*** (0.010)	-0.045*** (0.014)
Number of observations	15723	15723	15723	15723

For Tables 7a and 7b:

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Tables control for the same variables that appear in tables 4a and 4b. Controls also include dichotomous variables identifying missing values for categorical variables.

Tables 8. Determinants of Grade Point Average, by Gender

	<u>Females</u>		<u>Males</u>	
Has an Older Sibling	-0.065*** (0.018)	-0.064*** (0.018)	-0.066*** (0.014)	-0.065*** (0.014)
Parental supervision before school	---	0.062*** (0.019)	---	0.014 (0.018)
Parental supervision after school	---	-0.0002 (0.016)	---	0.023* (0.013)
Parental supervision at bedtime	---	0.056* (0.031)	---	0.057* (0.030)
One-child family	-0.055 (0.039)	-0.056 (0.039)	-0.018 (0.040)	-0.013 (0.040)
Two-child family	0.008 (0.036)	0.009 (0.036)	0.048 (0.038)	0.053 (0.038)
Three-child family	0.017 (0.036)	0.017 (0.036)	0.046 (0.035)	0.050 (0.035)
Four-child family	0.011 (0.033)	0.013 (0.033)	0.034 (0.041)	0.036 (0.041)
Black	-0.158*** (0.034)	-0.156*** (0.034)	-0.201*** (0.035)	-0.201*** (0.034)
Other Race	0.085** (0.036)	0.088** (0.036)	0.083** (0.039)	0.085** (0.039)
Hispanic	-0.240*** (0.037)	-0.241*** (0.037)	-0.199*** (0.037)	-0.200*** (0.037)
Mother's age	-0.025*** (0.007)	-0.024*** (0.007)	-0.029*** (0.008)	-0.028*** (0.008)
Lives in an urban area	0.002 (0.022)	0.002 (0.022)	0.007 (0.024)	0.007 (0.024)
Lives in a rural area	0.066** (0.028)	0.066** (0.028)	0.025 (0.028)	0.025 (0.028)
Lives with one parent	0.039* (0.020)	0.045** (0.020)	0.001 (0.030)	0.004 (0.029)
Lives without parents	0.258*** (0.042)	0.247*** (0.042)	0.261*** (0.049)	0.259*** (0.050)

Tables 8. Determinants of Grade Point Average, by Gender (Continued)

	<u>Females</u>		<u>Males</u>	
Parent attended some college	-0.108*** (0.020)	-0.108*** (0.020)	-0.073*** (0.023)	-0.072*** (0.022)
Parent graduated from high school	-0.230*** (0.019)	-0.228*** (0.019)	-0.199*** (0.021)	-0.199*** (0.021)
Parent did not finish high school	-0.222*** (0.031)	-0.219*** (0.031)	-0.177*** (0.031)	-0.178*** (0.031)
Father other professions	-0.152*** (0.021)	-0.152*** (0.021)	-0.188*** (0.019)	-0.189*** (0.019)
Father not working	-0.262*** (0.038)	-0.265*** (0.038)	-0.210*** (0.038)	-0.217*** (0.037)
Mother other profession	-0.095*** (0.017)	-0.095*** (0.017)	-0.089*** (0.018)	-0.092*** (0.019)
Mother not working	-0.120*** (0.023)	-0.131*** (0.025)	-0.138*** (0.024)	-0.151*** (0.025)
Family received welfare	-0.146*** (0.020)	-0.153*** (0.020)	-0.102*** (0.026)	-0.106*** (0.026)
Total Family Income	0.001*** (0.0002)	0.001*** (0.0002)	0.001* (0.0003)	0.001 (0.0003)
Parents' age	0.003** (0.001)	0.003** (0.001)	0.004*** (0.002)	0.004** (0.002)
Wave One	0.046* (0.024)	0.047* (0.024)	0.066* (0.040)	0.067* (0.040)
Constant	3.508*** (0.127)	3.392*** (0.136)	3.262*** (0.153)	3.173*** (0.165)
Number of observations	16524	16524	15723	15723

Standard errors are shown in parentheses.

Statistically significant at the ***99%, **90%, and *90% confidence level.

Controls also include dichotomous variables identifying missing values for categorical variables.