

# **Parent Involvement, Family Environments and Adolescent Contraceptive Use and Condom Use**

Jennifer Manlove, Lisa Mincieli, Emily Holcombe

Child Trends

## **Overview**

An expanding research literature has found that characteristics of parent-teen relationships -- including relationship quality, monitoring, communication, and time spent together -- are strongly associated with adolescent sexual behaviors.<sup>20,21</sup> However, while the bulk of evidence shows a protective effect of positive parent-teen relationships on the transition to first sexual experiences, there is less research on the association between family environments and either contraceptive use for pregnancy prevention or condom use for disease and pregnancy prevention. Those studies examining contraceptive use and condom use outcomes have focused primarily on parent-teen discussions about specific sexual topics instead of the role of broader family environments and relationships on adolescent contraceptive behaviors. Moreover, there has been little work examining gender differences in these associations as well as exploring the influence of both mothers and fathers on teens' sexual behavior.

This paper will expand previous research by using recent longitudinal and nationally representative data on teens to examine multiple dimensions of family environments on adolescent contraceptive and condom use and consistency. Specifically, we examine the role of parent-teen relationships (including relationship quality, monitoring/awareness, and family routine activities), family structure and stability, and family socioeconomic status on condom and contraceptive use outcomes. To provide a more detailed view of teen contraceptive use, we

examine four different measures of contraceptive behavior, including condom and contraceptive use at first sex, and condom and contraceptive consistency over the last year.

We examine the following research questions:

- 1) Are parent-teen relationships, family structure and stability, and family socioeconomic status associated with contraceptive use and/or condom use and consistency among teens? What role does previous contraceptive consistency play in this relationship?
- 2) Does the association between family environments and adolescent contraceptive use and condom use operate through teens' choice of sexual partners?
- 3) How do mother's and father's relationships with their teens separately and together influence teen contraceptive use and condom use?
- 4) Are there differences in the association between family factors and contraceptive and condom use by gender?

## **Background**

An extensive research literature has linked family environments to teen sexual activity, including condom and contraceptive use. However, the majority of this research has assessed associations between family environments and the transition to first sexual experience. Fewer studies have focused on contraceptive use and/or condom use, and of these, relatively few have used longitudinal data to prospectively examine the association between family environments and subsequent contraceptive use and/or condom use.

### *Parent-Teen Relationships*

Several studies suggest that more positive parent-teen relationships, including higher levels of parent-teen communication, connectedness and attachment, and support, are associated

with less risky sexual behaviors among teens. Several studies have examined parent-teen conversations about sex, contraception or sexually transmitted infections, and many find a positive association between these conversations and condom use<sup>1,10,24,29,32,33</sup> and contraceptive use.<sup>12,13</sup> Only one study has examined a broader measure of parent-teen communication and found no association with lifetime condom consistency.<sup>23</sup>

Some studies examine communication about sex with any family member (including mothers and fathers),<sup>1</sup> however, most include only mother-teen relationship quality and communication, and none compare the influence of mother and father relationship quality on adolescent contraceptive use and condom use.

While the number of activities teens engage in with their families has not been explicitly examined in studies of adolescent sexual activity, condom use and contraceptive use, parent-teen activities and time spent together as a family represent another dimension of family closeness that has been shown to be associated with reduced sexual activity and pregnancy risk.<sup>5,28,31</sup> Furthermore, teens who spend more time with their family in daily activities may feel more comfortable communicating with their parents on a range of issues.<sup>37</sup> Thus, engaging in more activities as a family may be related to fewer risk-taking behaviors, including unprotected sex, among teens through increased communication and feelings of closeness.

Parental monitoring and awareness refers to the extent of knowledge parents have of when and with whom their adolescents are, their activities when they are not at home or in school, and of their friends and friends' parents, as well as supervision of dating and activities.<sup>2,6,36</sup> Higher levels of parental monitoring or awareness have been consistently linked to less risky sexual behavior among teens,<sup>21</sup> and some studies have linked monitoring or awareness specifically to higher rates of condom use.<sup>2,11,23,36</sup> Many researchers have explained

the association between higher monitoring and reduced risky sexual behavior by arguing that higher levels of monitoring limit teens' opportunities for engaging in sex, so we posit that the association between parental monitoring and increased contraceptive and condom use may operate through the timing of first sex.

### *Family Structure*

Although living in an intact two-parent family has been shown to be protective against a number of risky sexual behaviors among teens, such as sexual initiation, there is less evidence to support an association between family structure and contraceptive use. However, some studies do find that living in households with two biological parents is associated with higher condom use<sup>14</sup> and contraceptive use among teens.<sup>15</sup> Turbulence in family environments is associated with poorer parent-child relationships<sup>26</sup> and lower levels of supervision and monitoring,<sup>18</sup> which are associated with an earlier timing of sexual initiation<sup>25,26</sup> and may be linked to reduced contraceptive use and condom use. Thus, we posit that experiencing fewer transitions will also be associated with higher rates of condom and contraceptive use, but that this may operate through parent-teen relationship factors.

### *Family Environments*

Higher socioeconomic status is positively associated with safer sexual behaviors in an extensive body of research. Among teens, higher parental educational attainment and income are positively associated with contraceptive use<sup>3,8,9,16,17</sup> and condom use.<sup>35</sup> Other aspects of family environments are also associated with adolescent sexual behavior. For example, higher levels of religious attendance and/or beliefs are associated with delaying sexual initiation,<sup>28</sup> however, when more-religious teens become sexually experienced, they are often less prepared to use contraception.<sup>30,34</sup>

## *Gender Differences*

Few studies of family environments and teen condom use and contraceptive use examine differences by gender, and the evidence is mixed in the few studies that have examined gender differences in contraceptive and condom use. Some studies of sexual initiation suggest that parental involvement plays a stronger role in the transition to sex for females than for males.<sup>5,19,22</sup> However, results of studies examining contraceptive use are less conclusive. Some studies find similar effects of parent-teen relationships on condom use for males and females.<sup>29,32</sup> Alternatively, one study found that higher parental monitoring was associated with consistent condom use for males but not females.<sup>2</sup>

It is possible that the associations between family factors and condom use and contraceptive use vary by both the gender of the teen and the gender of his or her parent. To test this, we examine reports of both father and mother relationships with their male and female children. While we could not identify any previous work done on this topic and condom and contraceptive use, some studies of sexual initiation have found that both maternal and paternal influence on timing of first sex is greater on daughters than on sons.<sup>5,19,22,27</sup> Another study examining the association between father-teen relationships and sexual activity found that paternal disapproval of adolescent premarital sexual activity was associated with delaying first intercourse for both male *and* female adolescents.<sup>7</sup> This paper will contribute to this research by assessing the relative effects of female and male teens' relationships with their mothers and fathers on their contraceptive and condom use.

## *Hypotheses*

Based on a review of existing literature, we hypothesize that positive parent-teen relationships, living in a two-parent family and experiencing fewer family structure changes, and

higher family socioeconomic status will be associated with greater odds that teens use condoms and contraceptives at first sex, and that they use condoms and contraceptives consistently. We hypothesize that both positive mother-teen relationships and father-teen relationships will be associated with greater condom use and contraceptive use. Based on previous research, we hypothesize that family environments – especially parent-teen relationships – may play more of a protective effect for females than for males. Finally, we hypothesize that the association between parent-teen relationships and contraceptive use and condom use outcomes may be mediated through teens’ sexual relationships and partners. For example, teens with more positive parent-teen relationships, higher levels of parental monitoring and awareness, and greater levels of family routine activities will have a first sexual experience at a later age, and be less likely to have that sexual experience in a casual relationship or with a much older or younger partner, and these relationship and partner factors will be associated with greater levels of condom use and contraceptive use.

### **Data and Measures**

We use data from the National Longitudinal Survey of Youth, 1997 cohort, Rounds 1-8 for our analyses. The NLSY97 data, sponsored and directed by the Bureau of Labor Statistics, U.S. Department of Labor, are nationally representative of adolescents in the United States born between 1980 and 1984 (ages 12-16 in 1997).<sup>4</sup> These data were designed to document the transition from school to work; however, information on a broad range of topics including teens and their family, peers, and adolescent relationships are collected annually in this survey. Youth were initially surveyed in 1997, and data are currently available for an additional seven waves through 2004 (when respondents are aged 19-25). African American and Hispanic American youth were over-sampled.

We restrict our sample to respondents aged 12-14 in 1997, because parent-teen relationship measures are not available for those aged 15-16. We examine parent involvement through the age 18 interview in order to focus on family environments among a school-age population. Our preliminary sample includes 4,687 teens aged 12-14 at baseline. From our original sample of 4,687 teens aged 12-14 at baseline, we removed 186 teens who had sexual intercourse before the first round of data. We also removed 1,272 teens who did not have sex by age 19 or by the 2004 survey for a sample of 3,229 sexually experienced teens.

We set up person-year files for our analyses of contraceptive consistency and condom consistency, in order to present information over time for each individual. These analyses allow us to include time-invariant and time-varying independent and dependent variables. For our analyses of contraceptive consistency and condom consistency, we set up a person-year file consisting of 6571 person-years where these respondents were sexually active. Time invariant independent variables include the respondent's family size, environment, parent religious attendance and parent education (measured in Round 1 only). Time-varying independent variables include measures of parent-teen relationship quality, parental monitoring and awareness, family routine activities, and family structure.

#### *Dependent Variables.*

We include four dependent variables in our models. Our first dependent variable measures whether teens reported using a condom at first sex or not. The second measures whether teens reported using any type of contraceptive method, including a condom, at first sex. Our final two dependent variables measure condom use and consistency and overall contraceptive use (including condom use) and consistency. The first measures whether or not respondents reported using a condom *every* time they had sex in the last year. The second

measures whether or not respondents reported using any type of contraceptive, including a condom, *every* time they had sex in the last year.

*Independent Variables.*

*Parent-teen relationships.* We measure adolescent reports of parent-adolescent relationship quality on a five-level scale (0=Strongly Disagree, 4=Strongly Agree), about eight aspects of their relationship their parent, including whether they think highly of their parent, enjoy spending time with them, whether their parent is a person that they want to be like, the frequency with which they get praised, criticized, helped, or blamed by their parent, as well as how often plans are cancelled by their parents. The measures of parent-adolescent relationship quality are available for up to four potential parents (residential mother, residential father, non-residential mother, and non-residential father), and we will focus on the adolescent's relationship with their biological mother and biological or other resident father. In addition, we include adolescent reports of parental monitoring/awareness (based on four items measuring how well their parent knows: their close friends, their close friends' parents, who they are with when they are not at home, and their teachers and school activities), and family routines (frequency with which they do the following with their family: eat dinner, do something fun together, do something religious together, as well the frequency that housework gets done).

*Family structure and stability.* We also include three items measuring of family stability and change during adolescence: 1) the youth's current family structure; 2) family size at round 1; and 3) changes in family structure since the previous round.

*Family Environments.* We include four measures of family environment, all measured at round 1: a continuous measure of parent religious attendance; a continuous measure of parent education; an enriching environment index (range 0-3) measuring the level of access the youth



has to material resources in their home; and a physical risk environment index (range 0-4) which captures the quality of the teen's home and neighborhood environment.

*Peer Environments.* We measure both positive and negative peer environments, which are available in Round 1 only. Positive peer characteristics include: church attendance, involvement in extra-curricular activities, plans to go to college, and volunteer activity. Negative peer characteristics include: smoking, getting drunk, gang involvement, use of illegal drugs, cutting classes, and sexual experience. We also include a three-level variable measure dating frequency at each round, ranging from 1 (no dating) to 3 (dating more than once a month).

*Sexual Experience.* We also include three measures of sexual experience. These include a continuous measure of age at first sex, a dummy variable measure the respondent was within two years in age of his or her first partner, and a dummy variable measuring whether or not the respondent was "going steady" with his or her first partner. Future analyses will include time-varying measures of most recent sexual relationships as a predictor of subsequent condom use consistency and contraceptive use consistency.

*Controls.* We control for several individual measures, including age, race/ethnicity, citizenship and delinquency. The delinquency index is a round one NLSY-created measure (range 0-10) indicating whether the respondent has ever engaged in a number of problem behaviors including whether her or she ran away from home, carried a gun, belonged to a gang, or was arrested.

## **Methodology**

We run bivariate chi-square and means tests analyses to test whether measures of parent-teen relationships, family structure and stability or other family environments are individually associated with condom use and contraceptive use and consistency. We conduct multivariate

analyses to test whether associations between parent-teen relationships, family structure and stability, and other family environment characteristics remain, after controlling for background and individual characteristics. We use logistic regression analyses to examine the odds of condom use at first sex and contraceptive use at first sex. For analyses of contraceptive consistency and condom consistency, we use the NLSY97 person-year file, which may include multiple years of sexual activity among teens. We run logit analyses comparing teens who always used contraceptive methods (or condoms) in the previous year with those who never or only sometimes used contraceptive methods or condoms. We incorporate random effects models for these analyses of contraceptive consistency and condom consistency across person-years. These models are appropriate for repeated outcomes data and control for respondent-specific unobserved heterogeneity by linking person-years of sexual and contraceptive information to each teen. All models are weighted and run in Stata.

### *Sample Characteristics*

As shown in Table 1, the majority of teens in our sample reported using a condom at first sex and any contraceptive method at first sex, while fewer reported using contraception and condoms consistently. Females were more likely than males in our sample to use condoms and contraception at first sex. Three-quarters (77%) of females and 70% of males used a condom at first sex, while 81% of females and 76% of males reporting using any form of contraception at first sex. However, males were more likely to report using condoms consistently and contraception consistently in our sexually experienced person-year sample. Half (52%) of male person-years included consistent condom use compared with 40% of female person-years, and 69% of male person-years included consistent contraceptive use compared with 64% of females.

Other characteristics of our samples are also displayed in Table 1. Overall, the teens in our samples report high quality relationships with their parents, including high overall reports of parent-teen relationships, levels of monitoring/awareness, and the frequency of engaging in routine activities with their families. About half of the teens in our samples live with two biological parents, and few experienced changes in family structure. The teens' parents attend religious services more than once a month and have completed 13 years of education, on average. The teens in our sexually experienced sample are on average 15 years old, and those in our sexually active sample are on average 16. The majority of teens in both samples are white and US-born, and most report dating at least once a month.

The sample characteristics shown in Table 1 also highlight some important differences between males and females in our two samples. While males and females reported similar levels of parent-child relationship quality, females report higher levels of parental monitoring/awareness and family routine activities than males. Females are more likely to live with a single parent or in an "other" family structure than males, although they report higher scores on the enriching environment index. In the sexually active sample only, females report a greater rate of change in family structure, a slightly lower family size, and a lower score on the physical environment risk index, compared to males.

## **Results**

### *Bivariate Results*

Bivariate analyses reveal several associations between family environments and condom use and contraceptive use outcomes (see Table 2). All measures of parental involvement are positively associated with condom and contraceptive use. Positive parent-adolescent relationships and higher levels of parental monitoring are positively associated with all four of

our contraceptive and condom use dependent variables, while family routine activities are positively associated with all outcomes except for contraceptive use at first sex.

Family structure is associated with both condom consistency and contraceptive consistency, as teens living with two biological/adoptive parents are more likely to always use a condom or contraceptive method, while teens living with one biological parent or in an “other” family structure are less likely to always use condoms or contraceptives. Teens that experienced a change in family structure are less likely to always use condoms or contraception than those who had not experienced a change in family structure, while teens who have larger families are less likely to use contraception at first sex.

A number of other family factors are associated with condom use and contraceptive use. Parent education is positively associated with using a condom and using contraception at first sex, and with using contraception consistently. Higher scores on the enriching environment index are positively associated with all four condom use and contraceptive use outcomes. A higher score on the physical environment risk index is associated with a lower likelihood of contraceptive use at first sex and contraceptive consistently, although is also associated with a *greater* likelihood of using condoms consistently, before controls.

### *Preliminary Multivariate Results*

Table 3 shows the results of logistic regression models predicting condom use and contraceptive use at first sex and condom and contraceptive consistency. Each outcome includes two models – one that controls for sociodemographic characteristics and peer and dating environments (Model 1) and a second that controls for characteristics of first sexual experience (Model 2). Because these models are preliminary, we have not included all of the controls in our

tables. Note also that in future models, we will include time-varying measures of recent sexual relationships and partners for analyses of contraceptive consistency and condom consistency.

The first set of columns of Table 3 present the multivariate models predicting condom use at first sex. Before including sexual experience measures into the model (in Model 1), greater parental monitoring and awareness is associated with increased odds of using a condom at first sex; however, this effect is attenuated after adding sexual experience characteristics into the model (Model 2). Both before and after adding sexual experience characteristics into the model, higher parent education is associated with greater odds of using a condom at first sex.

The next set of columns in Table 3 show the odds of using any type of contraceptive method at first sex. Similar to the previous models, higher parental education is associated with increased odds of contraceptive use at first sex, however no other parent involvement measures are associated with contraceptive use at first sex.

The third set of columns show the results for condom consistency. Both before and after including sexual experience characteristics into the model (Models 1 and 2), higher scores on the family routine activities index are associated with increased odds of condom consistency. Additionally, living with a single biological parent or in some other type of family structure is associated with reduced odds of condom consistency, relative to living with two biological or adoptive parents. These results do not change after including sexual experience characteristics in the model.

The final set of columns in Table 3 present the results for contraceptive consistency in the previous year. Higher scores on all three parent-teen relationship factors -- mother-teen relationship quality, parental monitoring and awareness, and family routines -- are associated with increased odds of contraceptive consistency. These factors remain significant even after

including sexual experience measures in the models. Living with one biological and one non-biological parent, or living with a single biological parent is associated with reduced odds of contraceptive consistency. Additionally, higher frequency of parent religious attendance is associated with lower odds of contraceptive consistency. All three of these risk factors remain significant after adding sexual experience controls into the model (Model 2). Finally, higher parental education and higher scores on the enriching environment index are associated with greater odds of contraceptive consistency. These results remain robust after including controls for sexual experience.

### **Discussion and Next Steps**

This paper extends previous research by prospectively examining associations between family environments and adolescent contraceptive use and consistency for pregnancy prevention and condom use and consistency for STI and/or pregnancy prevention. Our preliminary analyses indicate several associations between family environments and contraceptive use and condom use outcomes, and most of the associations were concentrated to analyses of contraceptive consistency and condom consistency. These findings suggest that parents can have a protective effect on adolescent reproductive health outcomes even after their teens have become sexually experienced.

We found that more positive mother-teen relationships were associated with greater contraceptive use consistency, which supports some previous research highlighting this association. Future analyses will also examine father-teen relationships and their association with outcomes. Some research suggests that father-teen relationships will have an independent effect on adolescent risky sexual behaviors among males and females. Higher parental monitoring and awareness is also associated with greater contraceptive consistency. These

findings support previous research that suggests a protective effect associated with teens whose parents are aware of where they are when they are not at home or in school. Higher levels of family routine activities – including eating dinner together on a regular basis -- were also associated with higher odds of condom use consistency and contraceptive use consistency. Family activities may represent higher levels of family closeness that provide parents and teens with more opportunities to communicate together.

### *Future analyses*

Our preliminary analyses focused on a combined sample of male and female teens. Future analyses will run models separately for males and females and will test gender interactions. We will also compare adolescent perceptions of mother-teen relationships and monitoring/awareness with father-teen relationships and monitoring/awareness. These analyses will allow us to further explore whether the association between parent-teen relationships and contraceptive use and condom use outcomes differ by both the gender of the teen and gender of his or her parent.

Future analyses will also include time-varying measures of recent relationships and partners and contraceptive use consistency and condom use consistency. We hypothesize that some of the association between family environments and contraceptive use outcomes operates through teens' choice of sexual relationships and partners, and time-varying measures of partner characteristics will better reflect recent sexual partners.

These analyses will provide updated information on how family environments may be prospectively associated with contraceptive use and condom use outcomes by examining a nationally representative and recent cohort of teens and their families.

**Table 1. Sample Characteristics, by Gender**

|                                       | Sexually Experienced Sample |       |      | Sexually Active Sample |       |      |
|---------------------------------------|-----------------------------|-------|------|------------------------|-------|------|
|                                       | Females                     | Males | Sig. | Females                | Males | Sig. |
| <b>Condom/Contraceptive Use</b>       |                             |       |      |                        |       |      |
| Used condom at first sex              | 76.5%                       | 70.2% | ***  | --                     | --    |      |
| Used contraception at first sex       | 80.5%                       | 76.0% | **   | --                     | --    |      |
| Used condoms consistently             | --                          | --    |      | 39.9%                  | 52.0% | ***  |
| Used contraception consistently       | --                          | --    |      | 64.1%                  | 69.3% | ***  |
| <b>Parent-teen Relationships</b>      |                             |       |      |                        |       |      |
| Parent-adolescent relationship (0-12) | 8.9                         | 8.7   |      | 8.7                    | 8.6   |      |
| Parental monitoring/awareness (0-16)  | 10.1                        | 9.3   | ***  | 9.9                    | 9.0   | ***  |
| Family routines (0-28)                | 8.5                         | 9.1   | *    | 6.9                    | 7.6   | ***  |
| <b>Family Structure and Stability</b> |                             |       |      |                        |       |      |
| Current family structure              |                             |       | ***  |                        |       | ***  |
| Two biological / adoptive parents     | 49.9%                       | 55.7% |      | 44.8%                  | 50.8% |      |
| One biological and one other parent   | 16.6%                       | 17.9% |      | 17.2%                  | 17.2% |      |
| Single biological parent              | 29.4%                       | 24.2% |      | 30.6%                  | 27.6% |      |
| Other                                 | 4.2%                        | 2.2%  |      | 7.4%                   | 4.4%  |      |
| Change in family structure            | 6.4%                        | 5.5%  |      | 14.0%                  | 10.9% | **   |
| Family size at round 1                | 4.4                         | 4.5   |      | 4.4                    | 4.5   | *    |
| <b>Other Family Environments</b>      |                             |       |      |                        |       |      |
| Parent religious attendance (1-7)     | 4.2                         | 4.2   |      | 4.0                    | 4.0   |      |
| Parent education (1-20)               | 13.5                        | 13.6  |      | 13.5                   | 13.4  |      |
| Enriching environment index (0-3)     | 1.9                         | 1.8   | *    | 1.8                    | 1.7   | ***  |
| Physical environment risk index (0-7) | 1.1                         | 1.2   |      | 1.2                    | 1.3   | *    |
| <b>Sociodemographic Controls</b>      |                             |       |      |                        |       |      |
| Age                                   | 15.6                        | 15.6  |      | 16.5                   | 16.4  |      |
| Race/Ethnicity                        |                             |       |      |                        |       | **   |
| White/Other                           | 71.7%                       | 71.7% |      | 72.6%                  | 68.9% |      |
| Black                                 | 15.6%                       | 14.5% |      | 15.3%                  | 16.9% |      |
| Hispanic                              | 12.8%                       | 13.7% |      | 12.1%                  | 14.2% |      |
| R was born in US                      | 95.3%                       | 94.9% |      | 95.6%                  | 95.3% |      |
| Delinquency Index                     | 0.8                         | 1.5   | ***  | 0.8                    | 1.6   | ***  |
| <b>Peer Environments</b>              |                             |       |      |                        |       |      |
| Positive Peer Characteristics         | 1.9                         | 1.8   | *    | 1.9                    | 1.7   | ***  |
| Negative Peer Characteristics         | 2.5                         | 2.2   | ***  | 2.5                    | 2.2   | ***  |
| Dating                                |                             |       | **   |                        |       | **   |
| No dating                             | 26.6%                       | 21.8% |      | 16.0%                  | 13.0% |      |
| Once a month                          | 31.4%                       | 37.5% |      | 28.6%                  | 31.8% |      |
| More than once a month                | 42.0%                       | 40.7% |      | 55.4%                  | 55.2% |      |
| <b>First Sexual Experience</b>        |                             |       |      |                        |       |      |
| Age at first sex                      | --                          | --    |      | 15.7                   | 15.3  | ***  |
| Same aged 1st partner                 | 81.5%                       | 92.0% | ***  | 77.6%                  | 90.0% | ***  |
| "Going steady" with partner           | 76.2%                       | 60.9% | ***  | 74.3%                  | 59.8% | ***  |
| <b>N =</b>                            |                             | 3229  |      | 6536 - 6571            |       |      |

p<.05= \*, p<.01= \*\*, p<.001= \*\*\*



**Table 2. Bivariate Results**

|                                       | Condom Use At 1st Sex |        |           | Contraceptive Use At 1st Sex |       |       | Condom Consistency |                |                            | Contraceptive Consistency |        |                       |
|---------------------------------------|-----------------------|--------|-----------|------------------------------|-------|-------|--------------------|----------------|----------------------------|---------------------------|--------|-----------------------|
|                                       | Used                  |        | No Condom | Used                         |       | No BC | Used               |                | Did Not Use Condoms Always | Used BC                   |        | Did Not Use BC Always |
|                                       | Condom                | Condom |           | BC                           | BC    |       | Condoms Always     | Condoms Always |                            | Always                    | Always |                       |
| <b>Parent-teen Relationships</b>      |                       |        |           |                              |       |       |                    |                |                            |                           |        |                       |
| Parent-adolescent relationship        | 8.89                  | 8.69   | +         | 8.91                         | 8.59  | **    | 8.76               | 8.61           | *                          | 8.79                      | 8.46   | ***                   |
| Parental monitoring/awareness         | 9.84                  | 9.31   | ***       | 9.80                         | 9.32  | **    | 9.61               | 9.38           | **                         | 9.65                      | 9.13   | ***                   |
| Family routines                       | 8.91                  | 8.46   | +         | 8.87                         | 8.51  |       | 8.09               | 6.51           | ***                        | 7.47                      | 6.77   | ***                   |
| <b>Family Structure and Stability</b> |                       |        |           |                              |       |       |                    |                |                            |                           |        |                       |
| Current family structure              |                       |        |           |                              |       |       |                    |                |                            |                           |        |                       |
| Two biological / adoptive parents     | 53.0%                 | 52.0%  |           | 53.3%                        | 50.7% |       | 48.8%              | 46.8%          | **                         | 50.0%                     | 43.0%  | ***                   |
| One biological and one other parent   | 16.6%                 | 19.1%  |           | 16.9%                        | 18.4% |       | 17.7%              | 16.9%          |                            | 16.7%                     | 18.3%  |                       |
| Single biological parent              | 27.0%                 | 26.3%  |           | 26.5%                        | 28.2% |       | 28.9%              | 29.2%          |                            | 27.7%                     | 32.0%  |                       |
| Other                                 | 3.4%                  | 2.6%   |           | 3.3%                         | 2.6%  |       | 4.6%               | 7.2%           |                            | 5.6%                      | 6.7%   |                       |
| Change in family structure            | 6.0%                  | 5.9%   |           | 5.8%                         | 6.2%  |       | 11.2%              | 13.6%          | *                          | 11.8%                     | 13.9%  | *                     |
| Family size at round 1                | 4.43                  | 4.54   | +         | 4.43                         | 4.58  | *     | 4.45               | 4.41           |                            | 4.42                      | 4.45   |                       |
| <b>Other Family Environments</b>      |                       |        |           |                              |       |       |                    |                |                            |                           |        |                       |
| Parent religious attendance (1-7)     | 4.15                  | 4.27   |           | 4.16                         | 4.27  |       | 4.03               | 4.01           |                            | 4.00                      | 4.07   |                       |
| Parent education (1-20)               | 13.71                 | 13.15  | ***       | 13.71                        | 12.99 | ***   | 13.32              | 13.55          |                            | 13.57                     | 13.17  | ***                   |
| Enriching environment index (0-3)     | 1.84                  | 1.75   | **        | 1.85                         | 1.71  | ***   | 1.77               | 1.82           | *                          | 1.83                      | 1.72   | ***                   |
| Physical environment risk index (0-7) | 1.15                  | 1.20   |           | 1.14                         | 1.25  | *     | 1.32               | 1.17           | **                         | 1.22                      | 1.29   | *                     |

p<.05= \*, p<.01= \*\*, p<.001= \*\*\*

**Table 3. Preliminary Multivariate Results**

|                                        | Condom Use at First Sex |          | Contraceptive Use at First Sex |          | Condom Consistency |          | Contraceptive Consistency |          |
|----------------------------------------|-------------------------|----------|--------------------------------|----------|--------------------|----------|---------------------------|----------|
|                                        | Model 1                 | Model 2  | Model 1                        | Model 2  | Model 1            | Model 2  | Model 1                   | Model 2  |
| <b>Parent-teen Relationships</b>       |                         |          |                                |          |                    |          |                           |          |
| Parent-adolescent relationship quality | 1.00                    | 1.00     | 1.02                           | 1.02     | 1.02               | 1.02     | 1.04 *                    | 1.03 *   |
| Parental monitoring/awareness          | 1.03 *                  | 1.03     | 1.02                           | 1.02     | 1.01               | 1.01     | 1.03 **                   | 1.03 *   |
| Family routines                        | 1.01                    | 1.01     | 1.01                           | 1.01     | 1.04 ***           | 1.03 *** | 1.03 **                   | 1.02 **  |
| <b>Family Structure and Stability</b>  |                         |          |                                |          |                    |          |                           |          |
| Current family structure               |                         |          |                                |          |                    |          |                           |          |
| Two biological / adoptive parents      | 1.00                    | 1.00     | 1.00                           | 1.00     | 1.00               | 1.00     | 1.00                      | 1.00     |
| One biological and one other parent    | 0.84                    | 0.83     | 0.90                           | 0.88     | 0.91               | 0.91     | 0.75 **                   | 0.76 **  |
| Single biological parent               | 0.97                    | 0.97     | 0.91                           | 0.92     | 0.77 **            | 0.78 **  | 0.70 ***                  | 0.71 *** |
| Other                                  | 1.23                    | 1.26     | 1.36                           | 1.41     | 0.43 ***           | 0.44 *** | 0.76                      | 0.78     |
| Family size at Round 1                 | 0.98                    | 0.98     | 0.96                           | 0.96     | 1.01               | 1.01     | 0.99                      | 0.99     |
| Change in family structure since       | 1.12                    | 1.11     | 1.01                           | 0.99     | 1.10               | 1.14     | 1.02                      | 1.05     |
| <b>Other Family Environments</b>       |                         |          |                                |          |                    |          |                           |          |
| Parent religious attendance (1-7)      | 0.96                    | 0.96     | 0.96                           | 0.96     | 0.98               | 0.98     | 0.94 **                   | 0.93 *** |
| Parent education (1-20)                | 1.07 ***                | 1.07 *** | 1.07 ***                       | 1.07 *** | 0.99               | 0.99     | 1.05 **                   | 1.05 **  |
| Enriching environment index (0-3)      | 1.07                    | 1.06     | 1.12                           | 1.11     | 1.00               | 0.99     | 1.14 *                    | 1.12 *   |
| Physical environment risk index (0-7)  | 1.01                    | 1.01     | 1.00                           | 1.00     | 1.04               | 1.06     | 0.98                      | 1.00     |

p<.05= \*, p<.01= \*\*, p<.001= \*\*\*

**Model 1:** Controls for all parent-teen relationship factors, family structure and stability, other family environments, sociodemographic and peer controls, dating, and rounds since last interview and months since last answered parent involvement questions

**Model 2:** Controls for all factors in model one, plus age at first sex, age difference with first sexual partner, and whether first partner was casual versus steady

## References

- <sup>1</sup>Berenson, A., Wu, Z., Brietkopf, C., & Newman, J. (2006). The relationship between source of sexual information and sexual behavior among female adolescents. *Contraceptive*, *73*(3), 274-278.
- <sup>2</sup>Borawski, E. A., Levers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiating unsupervised time, and parental trust: The role of perceived practices in adolescent health risk behaviors. *Journal of Adolescent Health*, *33*(2), 60-70.
- <sup>3</sup>Brewster, K. L., Cooksey, E. C., Guilkey, D. K., & Rindfuss, R. R. (1998). The changing impact of religion on the sexual and contraceptive behavior of adolescent women in the United States. *Journal of Marriage and the Family*, *60*(2), 493-504.
- <sup>4</sup>Bureau of Labor Statistics. (2006). *NLSY97 User's Guide: A Guide to the Rounds 1-8 Data*. Washington, DC.
- <sup>5</sup>Davis, E. C., & Friel, L. V. (2001). Adolescent sexuality: Disentangling the effects of family structure and family context. *Journal of Marriage and Family*, *63*, 669-681.
- <sup>6</sup>DiClemente, R., Wingood, G. M., Crosby, R., Sionean, C., Cobb, B. K., Harrington, K., et al. (2001). Parental monitoring: Association with adolescents' risk behaviors. *Pediatrics*, *107*(6), 1363-1368.
- <sup>7</sup>Dittus, P. J., Jaccard, J., & Gordon, V. (1997). The Impact of African American Fathers on Adolescent Sexual Behavior. *Journal of Youth and Adolescence*, *26*(4), 445-465.
- <sup>8</sup>Glei, D. A. (1999). Measuring contraceptive use patterns among teenage and adult women. *Family Planning Perspectives*, *31*(2), 73-80.
- <sup>9</sup>Hogan, D. P., Sun, R., & Cornwell, G. T. (2000). Sexual and fertility behaviors of American females aged 15-19 years: 1985, 1990, and 1995. *American Journal of Public Health*, *90*(9), 1421-1425.
- <sup>10</sup>Holtzman, D., & Rubinson, R. (1995). Parent and peer communication effects on AIDS-related behavior among U.S. high school students. *Family Planning Perspectives*, *27*(6), 235-240, 268.
- <sup>11</sup>Huebner, A., & Howell, L. (2003). Examining the relationship between adolescent sexual risk-taking and perceptions of monitoring, communication, and parenting styles. *Journal of Adolescent Health*, *33*, 71-78.
- <sup>12</sup>Jaccard, J., Dittus, P., & Gordon, V. (1998). Parent-adolescent congruency in reports of adolescent sexual behavior and in communications about sexual behavior. *Child Development*, *69*(1), 247-261.
- <sup>13</sup>Jaccard, J., & Dittus, P. J. (1996). Maternal correlates of adolescent sexual and contraceptive behavior. *Family Planning Perspectives*, *28*(4), 159-163.
- <sup>14</sup>Jemmott, L., & Jemmott, J. (1992). Family structure, parental strictness, and sexual behavior among inner-city black male adolescents. *Journal of Adolescent Research*, *7*(2), 192-207.

- <sup>15</sup> Manlove, J., Ryan, S., & Franzetta, K. (2004). Contraceptive use and consistency in teens' most recent sexual relationships. *Perspectives on Sexual and Reproductive Health*, 36(6), 265-275.
- <sup>16</sup> Manning, W. D., Longmore, M. A., & Giordano, P. C. (2000). The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives*, 32(3), 104-110.
- <sup>17</sup> Mauldon, J., & Luker, K. (1996). The effects of contraceptive education on method use at first intercourse. *Family Planning Perspectives*, 28(1), 19-24.
- <sup>18</sup> McLanahan, S., & Sandefur, G. D. (1994). *Growing up with a single parent: What hurts, what helps*. Cambridge, MA: Harvard University Press.
- <sup>19</sup> McNeely, C., Shew, M. L., Beuhring, T., Sieving, R., & M. B. C., & M., B. R. W. (2002). Mothers' influence on the timing of first sex among 14- and 15-year-olds. *Journal of Adolescent Health*, 31(3), 256-265.
- <sup>20</sup> Miller, B. (1998). *Families matter: A research synthesis of family influences on adolescent pregnancy*. Washington, DC: The National Campaign to Prevent Teenage Pregnancy.
- <sup>21</sup> Miller, B., Benson, B., & Galbraith, K. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review*, 21(1), 1-38.
- <sup>22</sup> Miller, B., Norton, M. C., Curtis, T., Hill, E. J., Schvaneveldt, P., & Young, M. H. (1997). The timing of sexual intercourse among adolescents: Family, peer, and other antecedents. *Youth & Society*, 29(1), 54-83.
- <sup>23</sup> Miller, K. S., Forehand, R., & Kotchick, B. A. (1999). Adolescent sexual behavior in two ethnic minority samples: The role of family variables. *Journal of Marriage & the Family*, 61(1), 85-90.
- <sup>24</sup> Miller, K. S., Levin, M. L., Whitaker, D. J., & Xu, X. (1998). Patterns of condom use among adolescents: The impact of mother-adolescent communication. *American Journal of Public Health*, 88(10), 1542-1544.
- <sup>25</sup> Moore, K. A., Morrison, D. R., & Gleib, D. A. (1995). Welfare and adolescent sex: The effects of family history, benefit levels, and community context. *Journal of Family & Economic Issues*, 16(2-3), 207-237.
- <sup>26</sup> Moore, K. A., Vandivere, S., & Kinukawa, A. (2004). *Turbulence During Childhood*. Paper presented at the Population Association of America, Boston, MA.
- <sup>27</sup> Regnerus, M. D., & Luchies, L. B. (2006). The parent-child relationship and opportunities for adolescents' first sex. *Journal of Family Issues*, 27(2), 159-183.
- <sup>28</sup> Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *JAMA: Journal of the American Medical Association*, 278(10), 823-832.

- <sup>29</sup>Romer, D., Stanton, B., Galbraith, J., Feigelman, S., Black, M. M., & Li, X. (1999). Parental influence on adolescent sexual behavior in high-poverty settings. *Archives of Pediatrics & Adolescent Medicine*, *153*(10), 1055-1062.
- <sup>30</sup>Studer, M., & Thornton, A. (1987). Adolescent religiosity and contraceptive usage. *Journal of Marriage and the Family*, *49*, 117-128.
- <sup>31</sup>Velez, M. C., Gonzalez-Rodriguez, R. A., & Borges-Hernandez, A. (2006). Family functioning and early onset of sexual intercourse in Latino adolescents. *Family Therapy*, *33*(2), 63-77.
- <sup>32</sup>Whitaker, D. J., & Miller, K. S. (2000). Parent-adolescent discussions about sex and condoms: Impact on peer influences of sexual risk behavior. *Journal of Adolescent Research*, *15*(2), 251-273.
- <sup>33</sup>Whitaker, D. J., Miller, K. S., May, D. C., & Levin, M. L. (1999). Teenage partners' communication about sexual risk and condom use: The importance of parent-teenager discussions. *Family Planning Perspectives*, *31*(3), 117-121.
- <sup>34</sup>Wilcox, B. L., Rostosky, S. S., Randall, B., A., & Wright, M. L. C. (2001). Reason for hope: A review of research on adolescent religiosity and sexual behavior. In B. D. Whitehead, B. L. Wilcox, & S. S. Rostosky (Eds.), *Keeping the faith: The role of religion and faith communities in preventing teen pregnancy* (pp. 31-82). Washington, DC: National Campaign to Prevent Teen Pregnancy.
- <sup>35</sup>Wilson, M. D., Kastrinakis, M., & D'Angelo, L. J. (1994). Attitudes, knowledge, and behavior regarding condom use in urban black adolescent males. *Adolescence*, *29*(113), 13-27.
- <sup>36</sup>Xiaoming, L., Stanton, B., & Feigelman, S. (2000). Impact of perceived parental monitoring on adolescent risk behavior over 4 years. *Journal of Adolescent Health*, *27*, 49-56.
- <sup>37</sup>Young Pistella, C. L., & Bonati, F. A. (1999). Adolescent women's recommendations for enhanced parent-adolescent communication about sexual behavior. *Child and Adolescent Social Work Journal*, *16*(4), 305-315.