

**From Insight to Impact**  
– worldwide



Abt Associates Inc.

**National Survey of  
Adolescents and  
Their Parents:  
Attitudes and  
Opinions about Sex  
and Abstinence**

**Project No. 60005**

***Final Report***

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*Prepared for*  
Family and Youth Services Bureau  
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*Prepared by*  
Lauren Olsho  
Jessica Cohen  
Deborah Klein Walker  
Andrew Johnson  
Gretchen Locke

Abt Associates Inc.  
55 Wheeler Street  
Cambridge, MA 02138-1168

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## Executive Summary

As part of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, Title V Section 510 provided significant amounts of funding to States to support abstinence education, with the ultimate goal of preventing unwed childbearing, pregnancy, and sexually transmitted diseases. Under this formula block grant program administered by the U. S. Department of Health and Human Services, states must match federal funds at 75 percent. Since 1998, when the first program grants were awarded, there has been considerable diversity in the types of abstinence education programs supported as well as the age groups targeted by these programs. Although some states have used all or most of their funds to mount statewide media campaigns, most have funded a variety of local program initiatives, predominantly in school settings.

To learn more about the public's views, the Administration for Children and Families (ACF) funded a survey study to examine current attitudes of parents and adolescents regarding sex, abstinence, and abstinence messages. The survey study, the *National Survey of Adolescents and Their Parents: Attitudes and Opinions about Sex and Abstinence*, conducted by Abt Associates Inc., is a public opinion survey of a nationally representative matched sample of 1,000 adolescents and their parents. The study was guided by the following research questions:

- What are adolescent and parent attitudes concerning sex and abstinence? How do they vary by basic sociodemographic characteristics?
- How are the attitudes of parents and their adolescents similar to or different from each other? How do these patterns vary by basic sociodemographic characteristics?
- Adjusting for all other variables, what factors are independently associated with adolescents' attitudes about sex and abstinence? More specifically, how are sociodemographic characteristics, peer attitudes and communication, and parent attitudes and communication independently associated with adolescents' attitudes about abstinence?

The survey findings can be used in the future to inform public education campaigns and abstinence education programs as well as to assist ACF with grant administration and technical assistance activities.

## Methodology

The goal of this study was to conduct a public opinion survey about sex and abstinence in order to gather up-to-date, high-quality data generalizable to the national population of adolescents aged 12 to 18. In order to maximize comparability with other sources, the Parent and Adolescent Interview instruments used in this study were based to the extent possible on other instruments that have been or are being used in other national surveys. Cognitive interviews were conducted to verify the validity of proposed questions; where necessary items were modified to improve clarity and comprehension for both older and younger adolescents.



The study employed a probability sample using a random-digit-dial (RDD) sampling design to collect information from 1,000 matched adolescent-parent pairs. For each randomly-selected adolescent interviewed, we additionally obtained survey data from the adult residing in the household who was identified as the “most knowledgeable parent” (MKP) for that adolescent – the parent or guardian living in the household who knew the most about that adolescent’s attitudes and beliefs about sexual activity, abstinence from sex, and abstinence education. Sampling weights were calculated to account for the probability of selection into the sample, to adjust for survey nonresponse, and to bring the weighted distribution of the 1,000 paired interviews into agreement with population control totals obtained from the 2006 American Community Survey (ACS). Data collection employed computer assisted telephone interviewing (CATI) technology, including the use of “digit-grabber” technology to allow parents and adolescents to key in responses to sensitive questions using their touch-tone phones to prevent being overheard.

To analyze the survey results, we first conducted basic descriptive analyses to provide an overview of parent and adolescent attitudes and beliefs about sexual activity and abstinence from sex, and adolescent exposure to information about sex and abstinence in the context of a class or program. In addition to results for the full sample, we examined differences across subgroups defined by parent and adolescent age and gender, race/ethnicity, frequency of religious service attendance, and household income.

All descriptive results incorporated the sampling weights described above, and are thus representative of the United States adolescent population aged 12 to 18. Note that because parents were not randomly selected, results on parent attitudes should *not* be considered representative of the population of parents of adolescents, and should be examined only in conjunction with data on adolescents. In the Executive Summary, reported findings for “parents” should therefore be interpreted more specifically as applicable to “most knowledgeable parents” for the randomly-selected adolescents in our sample.

Finally, to understand the factors associated with differences in adolescent attitudes about sex and sexual abstinence, a multivariate analysis was conducted based on a conceptual model of relationships developed from the literature and our hypotheses about the factors influencing adolescent attitudes about abstinence. We built the corresponding empirical model in stages using nested logistic regression specifications. Seemingly-unrelated regression (SUR) techniques were used to jointly test hypotheses across multiple outcome measures representing single underlying constructs. As with our descriptive analyses, we incorporated sampling weights, so the resulting estimates may be considered representative of the United States adolescent population.

## **Findings**

### **Overview of Descriptive Findings**

The study found definite patterns of attitudes and perception among parents and adolescents surveyed, as well as some similarity in these patterns. In our discussion of results, we use the following language conventions. For measures of general attitudes about sex and abstinence, greater degrees of opposition to pre-marital sex are termed more “conservative,” and lesser degrees of opposition more “liberal.” For measures of attitudes about adolescent sexual behavior, higher levels

of opposition to adolescent sexual behavior are deemed more “restrictive” and lower levels more “permissive.”

- *Parent Attitudes*

- Approximately 70 percent of parents surveyed are opposed to pre-marital sex both in general and for their own adolescents. This finding is consistent with results from previous public opinion surveys of parents on abstinence and abstinence messages.
- While most parents oppose their adolescents engaging in sexual intercourse under any circumstances, patterns of permissiveness for a minority of parents vary by specific context. In particular, across the outcome measures examined, parents are least likely to oppose sexual intercourse for their adolescents when birth control is used or when their adolescent plans to marry their prospective partner, and most likely to oppose sexual intercourse “if the adolescent and his or her partner think that it is okay.”
- Parents with more restrictive general views about sex and abstinence are more likely to feel they can influence their adolescents’ sexual behavior.
- Parents expressed more permissive views about sexual behavior for older adolescents and for male adolescents.
- General parent views about sex and abstinence were more conservative among non-Hispanic blacks, Hispanics, parents from lower-income households, and parents attending religious services more frequently. In contrast, however, patterns in permissiveness about sexual behavior of adolescents varied substantially by context among these groups relative to patterns in the overall population.
- The majority of parents surveyed favor their adolescents receiving abstinence messages from multiple sources. Ordered from most preferred to least preferred, parents favored abstinence messages delivered at a place of worship (85 percent), a doctor’s office or health center (85 percent), school (83 percent), a community organization (71 percent), and the internet (55 percent).

- *Adolescent Attitudes*

- While the majority of adolescents surveyed oppose pre-marital sex in general and for themselves, on average adolescents expressed less conservative general views about sex and abstinence than their surveyed parents.
- Similarly, adolescents were more likely than their surveyed parents to agree that engaging in sexual intercourse would be permissible for them in specific contexts.
- In general, adolescents expressed more permissive views when asked specifically about their attitudes about their own sexual behavior, as opposed to more general statements about sexual values.
- Older adolescents and male adolescents expressed more permissive views about their own sexual behavior, consistent with parents’ reported attitudes.
- Non-Hispanic black adolescents reported the most permissive views about their own sexual behavior, despite the more restrictive views expressed by their parents. Hispanic adolescents expressed more restrictive views than adolescents of other race/ethnicities, more in line with their parents’ attitudes.

- Adolescent frequency of attending religious services was strongly associated with more conservative general views about sex and abstinence among adolescents, as well as more restrictive views about their own sexual behavior.

## Multivariate Analysis Findings

Using a model developed from the literature and hypotheses about the relationship of parent, peer, and adolescent attitudes and communication patterns, we performed a series of multivariate analyses in order to better understand how peer and parent influences and adolescent exposure to information about sex and abstinence in a class or program are associated with adolescent views about sex and abstinence. Unlike the descriptive analyses previously discussed, multivariate analyses of this kind allow us to examine independent associations between attitudes and individual explanatory factors, adjusting for associations with all other variables included in the model.

Key findings from the multivariate analysis are as follows:

- *Adolescent Perceptions of Parent-Adolescent Communication.* We analyzed adolescent reports of communication with their parents about sex, abstinence, and sexual values, adjusting for parent-reported communication levels, in order to examine factors associated with differences in whether adolescents are hearing the same messages parents say they are sending.
  - Older parents reported lower frequency of communication about sex, abstinence, and sexual values with their adolescents, and, conditional on parents' own reports, adolescents were less likely to report that they had heard these messages from older parents. Similarly, adolescents reported lower levels of communication from male parents, even adjusting for the lower frequency of communication reported by male parents overall.
  - Non-Hispanic black parents reported much more frequent communication with their adolescents about sex and abstinence than parents from other racial/ethnic groups, and their adolescents were more likely to have heard these messages, conditional on parents' own reports.
  - Higher adolescent-reported frequency of conversations about sex and abstinence, adjusting for parent-reported communication levels, was positively associated with adolescent age, more frequent religious service attendance, higher parent-perceived levels of control over adolescent sexual behavior, and better parent-adolescent relationship quality. This finding indicates that these factors are associated with an increase in the probability that adolescents report hearing the messages parents say they are communicating.
  - Adolescent exposure to specific topics related to sex and abstinence in a class or program was strongly associated with higher adolescent-reported communication levels with parents about those topics, adjusting for parents' own reports, perhaps indicating that these programs may increase adolescent capacity to understand and communicate the messages they are hearing from parents.
- *Adolescent Attitudes about Sex and Abstinence.* Finally, we examined associations of adolescent characteristics, parent and peer characteristics, and adolescent exposure to

information about sex and abstinence in classes or programs with differences in adolescent attitudes about sex and abstinence. Like the multivariate results on adolescent perceptions of parent-adolescent communication described above, these results are adjusted for associations with all other variables included in the model. The study found:

- Adolescent characteristics:
  - » Older adolescents had more conservative general attitudes about sex and abstinence, but simultaneously expressed less restrictive attitudes about their own sexual behavior.
  - » Male adolescents expressed consistently less conservative general views about sex and abstinence and less restrictive views about their own permissible sexual behavior.
  - » Black and Hispanic adolescents reported significantly more permissive views about their own sexual behavior. For non-Hispanic black adolescents, this finding stands in contrast to the more restrictive views about sex and abstinence expressed by their parents.
- Parents:
  - » Although, as seen above, older parents explicitly communicated less with their adolescents about sex and abstinence, adolescents with older parents expressed more restrictive views about their sexual behavior and greater perceived parental control over their sexual activity.
  - » Although higher income was associated with relatively more permissive views about sex and abstinence among parents, adolescents from higher-income households expressed more restrictive attitudes than their peers in households from lower income brackets.
  - » More conservative parent attitudes about sex and abstinence were broadly associated with more conservative attitudes among adolescents, adjusting for other factors.
  - » Overall parent-adolescent communication levels were not associated with differences in adolescent attitudes, but frequency of discussion of specific topics related to sex and abstinence had some statistically significant effects.
  - » In contrast to previous studies, we found evidence that the association of parent attitudes with adolescent views increased with adolescent age.
- Peers:
  - » Adolescents with more conservative peers expressed more conservative attitudes about sex and abstinence and more restrictive views about their own sexual behavior.
  - » Higher levels of peer-adolescent communication about sex were associated with less conservative adolescent attitudes.
  - » Peers were found to be more strongly associated with differences in adolescent attitudes for males than for females.
- Adolescent exposure to information about sex, abstinence, and sexual values in classes or programs:
  - » Both parent-reported adolescent participation in a class, program, or event that taught about waiting to have sexual intercourse until marriage, and adolescent-

reported receipt of information about specific topics related to sex, abstinence, and sexual values were associated with higher levels of communication about sex and sexual values with both parents and peers.

- » Parent-reported adolescent participation in the past year in a class, program, or event that talked about waiting to have sexual intercourse until marriage was not associated with any differences in adolescent attitudes about sex and abstinence.
- » However, there were some statistically significant associations observed between adolescent attitudes and adolescent-reported exposure to some types of specific information about sex and abstinence in a class or program.

## Conclusions

We find that parents and adolescents generally oppose pre-marital sex. However, adolescents tend to express more permissive attitudes about their own sexual behavior than their surveyed parents. Social and cultural norms seem to be significant predictors of adolescent attitudes, with persistently more permissive views expressed both by and about males than females. We additionally found evidence of significant differences by race and ethnicity, with variation not only in overall restrictiveness of attitudes, but in patterns of attitudes by specific contexts of sexual behaviors.

In general, our findings indicate that adolescent attitudes about sex and abstinence are more subject to influence from parents and peers than to messages about sex and abstinence delivered in the context of classes or programs. However, adolescent receipt of information about sex, abstinence, and sexual values in a class or program was associated with increased levels of adolescent communication about sex and abstinence with both parents and peers. Furthermore, adolescent exposure to some specific topics related to sex and abstinence in a class or program appeared to increase the likelihood that adolescents heard and reported similar messages about sex and abstinence delivered by their parents.

Note that our study did *not* examine a number of factors that might also be influential in determining adolescent attitudes about sex or abstinence, such as exposure to messages from advertising, entertainment, or other media, and relationships with non-parental family members such as siblings or other relatives. It is additionally important to note that this multivariate analysis does not constitute an evaluation of the influence of abstinence or sex education on adolescents. Although we hypothesize a direction of influence for each relationship included in our conceptual model in order to guide our analytic approach, empirical analyses can test only for correlational relationships, not causative influences. Readers are thus encouraged to avoid making inferences about causation based on the findings presented here.

Conditional on these caveats, our findings suggest several things. First, the significant disparities in attitudes and communication levels across subgroups defined by race/ethnicity, gender, age, and socioeconomic characteristics suggest that different kinds of abstinence messages may resonate differently across different groups. Secondly, given the multiple pathways of influence on adolescent attitudes about sex and abstinence through interactions with parents and peers, broad-based community initiatives designed to influence attitudes and behaviors across all these groups may be more successful than programs targeting only one subgroup or setting. Similarly, given the evidence that hearing messages about sex and abstinence from more than one source increases the likelihood

that adolescents hear and report these messages, a multi-pronged approach to delivering these messages to adolescents will likely be more influential than approaches focusing on a single message source. Furthermore, the study shows that surveyed parents are generally comfortable with this type of strategy, with the majority favoring abstinence messages delivered in places of worship, doctor's offices, schools, and community organizations.

# 1. Introduction

As part of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, Title V Section 510 provided significant amounts of funding to States to support abstinence education, with the ultimate goal of preventing unwed childbearing, pregnancy, and sexually transmitted diseases. Under this formula block grant program administered by the U. S. Department of Health and Human Services, States must match federal funds at seventy-five percent. Since 1998, when the first program grants were awarded, there has been considerable diversity in the types of abstinence education programs supported as well as the age groups targeted by these programs. Although some states have used all or most of their funds to mount statewide media campaigns, most have funded a variety of local program initiatives, predominantly in school settings.

To learn more about the public's views, the Administration for Children and Families (ACF) funded a survey study to examine current attitudes of parents and adolescents regarding sex and abstinence. The survey study, the *National Survey of Adolescents and Their Parents: Attitudes and Opinions about Sex and Abstinence*, conducted by Abt Associates Inc., is a public opinion survey of a nationally representative matched sample of 1,000 adolescents and their parents. The study was guided by the following research questions:

- What are adolescent and parent attitudes concerning sex and abstinence? How do they vary by basic sociodemographic characteristics?
- How are the attitudes of parents and their adolescents similar to or different from each other? How do these patterns vary by basic sociodemographic characteristics?
- Adjusting for all other variables, what factors are independently associated with adolescents' attitudes about sex and abstinence? More specifically, how are sociodemographic characteristics, peer attitudes and communication, and parent attitudes and communication independently associated with adolescents' attitudes about abstinence?

This report summarizes methodology and findings from this important survey effort. The remainder of this section provides background and a brief review of the existing literature. Section 2 describes study methodology, including instrument design, data collection, sampling techniques and weights, and analytic approach. Findings from our descriptive and multivariate analyses of parent and adolescent attitudes are presented in Section 3. The report concludes with a general discussion of the findings and their implications in Section 4.

## 1.1. Federal Role in Abstinence Education

Section 510 of Title V of the Social Security Act was established under Section 912 of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (Public Law 104-193), with the goal of preventing unwed childbearing, pregnancy, and sexually transmitted diseases. This law provided a mandatory annual appropriation of \$50 million to States to carry out abstinence education programs for each of the fiscal years from 1998 to 2002. First awarded in November 1997, the grants

were reauthorized in 2002 (United States Government, 2005) and have continued to be reauthorized through June 2009 (Public Law 110-275 Section 201).

Since the first Section 510 grants were awarded, there has been considerable diversity in the types of abstinence education programs supported as well as the age groups targeted by these programs. Although some states have used all or most of their funds to mount statewide media campaigns, most have funded a variety of local program initiatives, predominantly in schools. Some of these are curriculum-based classroom programs, while others combine a classroom program with extensive out-of-classroom activities. Student participation may be mandatory or voluntary (Mathematica Policy Research, 2007a).

Section 510 specifies that abstinence grant projects must meet the definition of abstinence education as specified in the legislation. Abstinence education is “an educational or motivational program that:

- Has as its exclusive purpose, teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;
- Teaches abstinence from sexual activity outside marriage is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;
- Teaches that a mutual faithful monogamous relationship in the context of marriage is the expected standard of human sexual activity;
- Teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;
- Teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child’s parents, and society;
- Teaches young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances; and
- Teaches the importance of attaining self-sufficiency before engaging in sexual activity.” (Title V Section 510 (b)(2)(A-H) of the Social Security Act, Public Law 1-4-93)

## **1.2. Overview of Studies Related to Abstinence**

To assist with the development of survey instruments and a conceptual model to guide data analysis, Abt Associates performed a review of past literature related to abstinence and abstinence education. We present below highlights from our literature review, including findings from public opinion surveys, as well as research studies examining parent and peer influences on adolescent sexual activity and other risk behaviors.

### **1.2.1. Public Opinions about Abstinence and Abstinence Education**

There has been relatively limited previous research on public opinions about abstinence and abstinence education. There have been no nationally representative surveys to date examining adolescent attitudes and perceptions of sexual abstinence. Furthermore, three surveys of adults



conducted in 2004 and 2005 reveal contradictory attitudes and opinions about abstinence and abstinence education.

In 2004, a survey by Zogby International found that parents show strong support for abstinence and abstinence education programs. Some 45 percent of parents felt that young people should not engage in sexual intercourse until marriage. An overwhelming 96 percent of parents surveyed believed that abstinence from sexual activity is best for teens. The survey focused on parents' views on sex education for their children. Fifty-two percent of parents felt that adolescents should learn that abstinence is best, but that schools should provide basic biological and health information about contraception; 22 percent felt that abstinence-only education is best (Rector et al., 2004).

A December 2005 Harris Poll found that 78 percent of adults had heard of abstinence education programs. The majority of adults surveyed did not believe that abstinence education programs are effective in reducing or preventing HIV/AIDS or unwanted pregnancies (Harris Interactive, 2006). However, a survey conducted a year earlier by the National Campaign to Prevent Teen Pregnancy found that support for strong abstinence messages was extremely strong: 93 percent of teens and 90 percent of adults believed that teens should be given a strong abstinence message from society. In this same 2004 survey, nearly seven in ten teens did not think it was okay for high school teens to have sexual intercourse (Albert, 2007).

### **1.2.2. Parental and Familial Influences on Adolescent Sexual Behavior**

Parental influence on adolescent behavior is often studied in the context of parent-adolescent communication. The literature supports the hypothesis that open parental communication with children about sex will deter involvement in risky behaviors. The quality of the parent-adolescent relationship has been linked to good self-control, higher resistance efficacy, and less adolescent risk-taking behavior (Forehand et al., 1997; Huebner & Howell, 2003; Kotchick et al., 1999; Manlove, 2004; Wills et al., 2003). The type of parental relationship is also important. Adolescents are more likely to confide in biological parents, both mothers and fathers, than they are to confide in step parents (Dunn et al., 2001).

Demographic characteristics are important variables in the parent-adolescent relationship. Social norms, stigma, and stereotypes based on gender, race, and age are likely to influence views and communication behavior (Forehand et al., 1997; Goldin, 1969). In general, previous studies show that older children are less likely than younger children to confide in their parents. For example, older children are more likely to discuss sensitive topics with peers instead of their parents (Hunter, 1985; Papini & Farmer, 1990). Females have been shown to exhibit greater emotional self-disclosure to parents and peers than males (Papini & Farmer, 1990). Research on African Americans, Hispanics, and European Americans show that these groups have substantially different historical backgrounds and cultural values which can result in different parenting beliefs (Dixon et al., 2008). Finally, adolescent religiosity has been associated with delayed sexual involvement (Hardy & Raffaelli, 2003; Rostosky et al., 2003; Terry-Humen et al., 2005; Wills et al., 2003).

### **1.2.3. Peer Influences on Adolescent Sexual Behavior**

Peers' behaviors are reported to be one of the strongest influences on adolescent behavior. Studies have shown that, adjusting for other factors, the odds of an adolescent engaging in sex are 2-4 times

higher if the same-sex closest friend of that adolescent is sexually active (Jaccard, et al., 2005). Research on risk-taking in adolescents supports the theory that peer influence plays an important role in explaining risky behavior (Gardner & Steinberg, 2005). Peer influence more strongly predicts behaviors during adolescence than in adulthood. In one study including both preadolescents and adolescents, parents and peers were found to be of equal influence for preadolescents, while peers were more influential for adolescents (Krosnick & Judd, 1982).

Previous research clearly supports the strong influences of both parents and peers on adolescent behavior. Two studies provide particular insight in understanding the interplay of parental and peer influences on adolescent sexual behavior. Results from a survey of 568 African-American adolescent females conducted by Maguen and Armistead (2006) indicated that parental sexual attitudes and parent-adolescent relationship quality predicted abstinence, controlling for peer variables. These findings suggest that adolescent sexual risk reduction interventions may benefit from including parents, stressing the importance of communicating clear parental sexual attitudes, and highlighting the significance of the parent-adolescent relationship.

Another survey of adolescents by Whitaker and Miller (2000) also looked at the complex relationships among parent-adolescent communication, peer norms, and behavior. They found that communication about sex and perceived peer norms about sex were each related to sexual behavior, and communication about condoms and peer norms about condoms were related to condom use. For both sex and condom use, the peer norm-behavior relationship was moderated by parental communication. These results suggest that a lack of parent-adolescent communication may cause adolescents to turn to peers, who may in turn influence adolescent behavior.

#### **1.2.4. Other Behavioral Research on Risk Behaviors**

Although the evidence on predictors of sexual behavior is somewhat limited, there is a wide breadth of literature about parental and peer influences on other risk behaviors (Baker et al., 2000; Blanton et al., 1997; Chassin et al., 1986; Doherty & Allen, 1994; Fisher, 1988; Nappi et al., 2007). Just as adolescents are more likely to engage in promiscuous behavior if their peers are participating in promiscuous behavior, they are also more likely to drink and smoke if their peers do. Smoking and drinking are more likely for adolescents with more smoking/drinking friends and parents, with lower levels of parental support, and with friends with lower expectations for the adolescents' general and academic success (Blanton et al., 1997; Chassin et al., 1986; Doherty & Allen, 1994).

Eating behaviors, like other risk behaviors, are influenced by attitudes and perceptions. A study focusing on the intergenerational transmission of eating attitudes and behaviors found that students' attitudes and behaviors were more strongly related to perceptions of their parents' attitudes than to parent's own self-reported attitudes (Baker et al., 2000). Just as students are influenced by parents' criticism to eat in a certain way, this intergenerational trend may also influence sexual attitudes: adolescents may abstain from sexual intercourse if parents have emphasized this value in the home.

### **1.3. Research Questions and Conceptual Model**

The goal of this study is to report on parent and adolescent views about sex and abstinence in order to inform policy-makers, parents, and the general public. Although there have been previous studies of

adult views and perceptions about abstinence, this is the first study of parent and adolescent views in a nationally representative survey.

The major research questions of this public education study are:

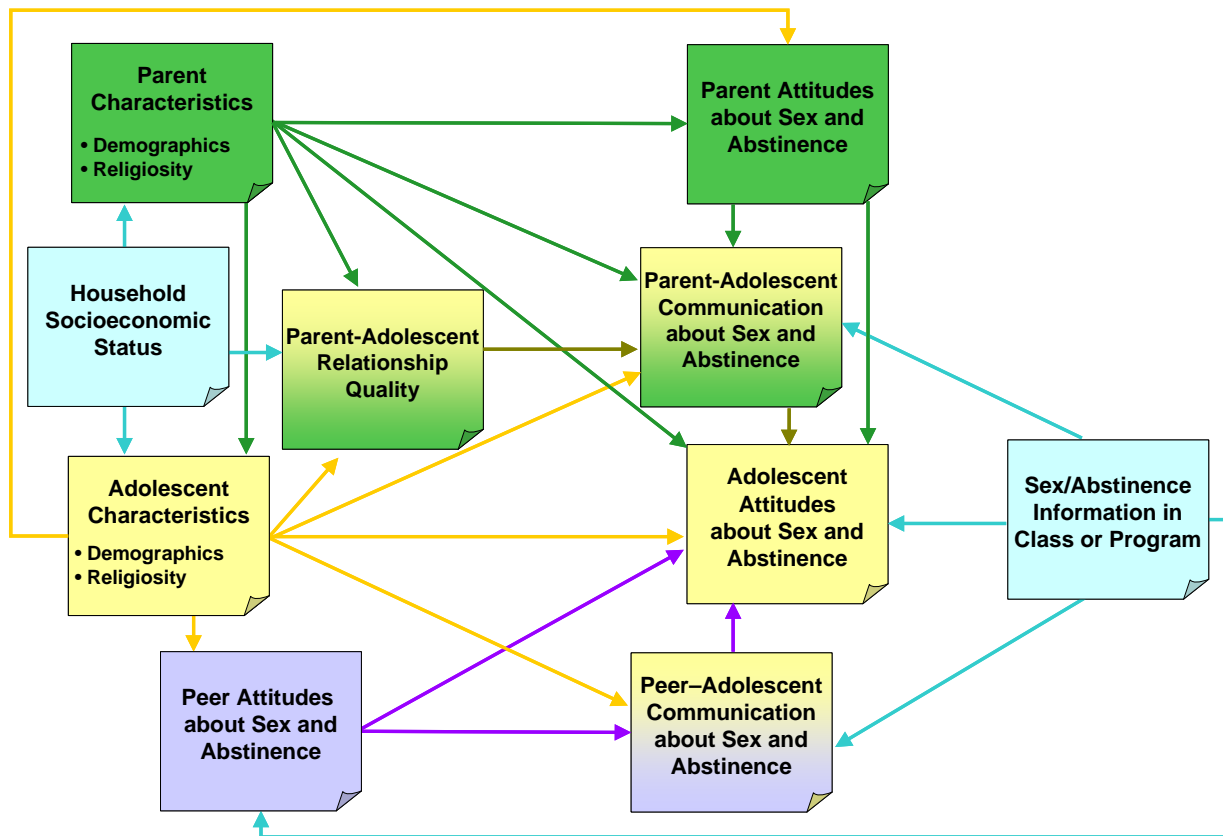
- What are adolescent and parent attitudes concerning sex and abstinence? How do they vary by basic sociodemographic characteristics?
- How are the attitudes of parents and their adolescents similar to or different from each other? How do these patterns vary by basic sociodemographic characteristics?
- Adjusting for all other variables, what factors are independently associated with adolescents' attitudes about sex and abstinence? More specifically, how are sociodemographic characteristics, peer attitudes and communication, and parent attitudes and communication independently associated with adolescents' attitudes about abstinence?

We address the first two major research questions via a set of descriptive analyses based on data collected from 1,000 matched adolescent-parent pairs, as described in greater detail in Section 2. Results from these analyses are representative of the United States population of adolescents aged 12 to 18. In addition to findings for the full interview sample, we present descriptive results for subgroups of parents and adolescents defined by gender, age, race/ethnicity, household income, and frequency of attendance of religious services.

Disentangling the various factors independently associated with differences in adolescent views about sex and abstinence in order to answer the third major research question requires a more complex modeling approach. To guide this set of multivariate analyses, we developed a conceptual model based on prior research describing influences on adolescent attitudes (Exhibit 1-1). The model postulates three major external pathways of influence on adolescent attitudes about sex and abstinence: parents, peers, and adolescent exposure to information about sex and abstinence in a class or program.

**Exhibit 1-1.**

**Conceptual Model: Influences on Adolescent Attitudes about Sex and Abstinence**



We hypothesize that parents may influence adolescent attitudes via several interconnected routes. For example, explicit parent-adolescent communication about sexual intercourse, abstinence, and sexual values may directly shape adolescent views. However, the level and type of this communication—and the adolescent’s reaction to it—may vary by the strength of the parent-adolescent relationship. Overall parent attitudes about sex and abstinence may similarly influence the content and level of parent-adolescent communication, and additionally may implicitly influence adolescent attitudes even if not explicitly expressed in conversations. Finally, general parent and household sociodemographic characteristics may influence adolescent attitudes about sex and abstinence, either directly or indirectly through their influence on the other intermediate pathways described above.

Similarly, we hypothesize that peer attitudes may influence adolescent views directly, if peers serve as role models for adolescents, or indirectly, via explicit communication about sex and sexual values. Additionally, we assume that adolescent sociodemographic characteristics and overall religiosity may directly affect the attitudes of their closest peers. As in the case of parents, these pathways of influence may be moderated via peer sociodemographic characteristics and/or the overall closeness of the peer-adolescent relationship; however, as we relied on adolescent self-reports of attitudes and communication with their peers, we were unable to explicitly examine these hypotheses.

Finally, we hypothesize exposure to information about sex or abstinence in the context of a class or program may exert an influence on adolescent attitudes. In addition to its direct influence on adolescents, exposure to this type of information could influence the attitudes of peers who also participate in such a program. Additionally, adolescent participation in these programs could influence overall communication levels by encouraging more frequent adolescent conversations about sex, abstinence, and sexual values with both parents and peers.

In order to test the various associations hypothesized in this conceptual model, we performed a series of nested logistic regressions using data from the Parent and Adolescent Interviews. By sequentially adding groups of variables to the model, we were able to examine both the direct association of each variable with adolescent attitudes, and hypothesized indirect associations mediated through relationships with other intermediate outcomes. This approach to building the final empirical model is described briefly in Section 2.3 and in greater detail in Appendix B.

It is important to note that this multivariate analysis does not constitute an evaluation of the influence of abstinence or sex education on adolescents. Although we hypothesize a direction of influence for each relationship included in our conceptual model in order to guide our analytic approach, empirical analyses can test only for correlational relationships, not causative influences. Readers are thus encouraged to avoid making inferences about causation based on the findings presented here.

## 2. Methodology

In this section, we describe the methodology employed collecting and analyzing data on attitudes about sex and abstinence in this public opinion survey of adolescents and parents. We begin in Section 2.1 with a discussion of survey instrument design, testing, and refinement. We then briefly describe in Section 2.2 the data collection process, including our random-digit dialing (RDD) sampling procedure, designed to obtain a random sample of U.S. adolescents aged 12 to 18 and a self-identified “most knowledgeable parent” for each. Finally, in Section 2.3 we discuss the analytic approach used in our descriptive and multivariate analyses of the resulting survey data.

### 2.1. Survey Instrument Design

Three survey instruments were designed for this study:

- Household Screening Interview—to identify households with adolescents and select adolescents and parents for in-depth interviews.
- Parent Interview—the detailed interview of the “most knowledgeable parent.”
- Adolescent Interview—the detailed interview of sampled adolescents.

In the remainder of Section 2.1, we first describe in brief the instrument development process, including the initial design process, cognitive testing procedures and results, and development of Spanish-language versions of the instruments. We then conclude with a short overview of the content of each instrument.

#### 2.1.1. Instrument Development

In developing the Parent and Adolescent Interviews, we began by creating and refining a list of research objectives. We then identified and prioritized key topic areas linked to each stated objective. Specific survey items were identified for each topic; we included multiple questions intended to measure each construct of interest in order to increase overall survey reliability.

Wherever possible, we selected questions from previously-validated national surveys or public opinion research for inclusion in our own instrument, although it was necessary to create original questions for topic areas for which little previous research was available. An expert workgroup was consulted to ensure that all known surveys in the field were identified and reviewed, and that the topics and questions covered in the interviews were appropriate.

#### Cognitive Testing

The next step in instrument development was to verify the validity of proposed questions via a series of cognitive interviews. Nine parents and nine adolescents served as cognitive interview test subjects at the Abt Associates Cognitive Testing Laboratory (CTL) in Bethesda, Maryland. This testing was necessary even for questions derived from previously-validated survey instruments, in order to ensure that they remained valid within the context of the existing study.

Cognitive interviews are an efficient, valid method used to identify problems that respondents might have when answering questions. Respondents can provide accurate answers to a survey question only to the extent that they can successfully perform four response tasks: comprehension, recall, response formation, and reporting. In sequence, respondents must understand the question as intended by the researcher (comprehension), recall or retrieve the relevant information (recall), use that information to come up with an answer (response formation), and report that answer in the format the interview or questionnaire requires (reporting). Inability to perform any of these tasks can result in both minor and more serious inaccuracies in responses. In extreme instances, a respondent might not be able to answer an item at all.

In cognitive interviews, test subjects are asked to “think aloud” as they answer survey questions and respond to concurrent and retrospective probing by the interviewer. The interviews are video-recorded, and an experienced staff member observes and takes notes. Respondents are also asked to provide overall and question-specific reactions to the surveys, and suggestions for rewording or deleting particular items. Based on these interviews, an experienced researcher can identify respondent difficulties related to each of the four individual response tasks, and recommend changes to the survey instrument based on these findings.

A total of 18 cognitive interviews were conducted in two rounds with adolescents (12 to 18 year olds) and their parents. The first round consisted of four parent/adolescent pairs of interviews conducted from January 9-12, 2007 at the Abt Associates CTL in Bethesda, Maryland. Round 1 findings were presented to HHS on February 28, 2007, and the instruments were revised based on these initial findings.

The second round of testing using these revised instruments consisted of five parent/adolescent pairs of interviews conducted April 4-13, 2007 at the Abt Associates CTL. Two of the adolescent interviews in Round 2 were conducted using the Abt Associates CTL’s telephone simulation method in order to examine what problems might occur when the survey was administered over the telephone.

In general, the revisions made as a result of cognitive testing fell in the following categories:

- Clarifying key terms such as “sexual intercourse” so that they would be clear, particularly to both younger and older adolescents;
- Simplifying question wording and response categories to improve clarity and comprehension;
- Modifying question sequencing to improve the logic of the instruments; and
- Ensuring respondents understood how to use the “digit grabber” technology<sup>1</sup> by offering a practice question and adding interviewer instructions to let respondents know they can change their answer.

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<sup>1</sup> “Digit grabber” technology allows respondents and parents to key in responses to sensitive questions using their telephone key-pad.

After each cognitive interview, parent and adolescent respondents were asked for their general reactions to the survey, including whether they felt the survey allowed them to give their opinions accurately, what questions were particularly easy or difficult, and whether the gender of the interviewer would matter to them. Parent and adolescent comments also helped us identify training issues for interviewers, such as what to do if an adolescent did not seem to be taking the survey seriously or was giving what seemed likely to be inaccurate or insincere responses.

## **Pretesting**

Following the cognitive interviewing, we pretested the revised Household Screener and the Parent and Adolescent Interview instruments by phone for nine households with adolescent residents. The purpose of pretesting is primarily to evaluate survey instrument in terms of length and flow, and to identify any possible problems with skip patterns or other issues in administering the survey.

We pretested the adult and adolescent instruments in our Hadley, Massachusetts Telephone Center. Two interviewers were trained to administer the interviews in early April 2007. Abt Associates recruited volunteers who were parents with children between the ages of 12 and 18. Between April 12 and April 24, interviewers administered telephone interviews<sup>2</sup> to nine adult-adolescent pairs. Respondents lived in Idaho, Illinois, Maryland, and Massachusetts.

Overall, the pretested adult interviews lasted about 18 minutes. As expected, the adolescent interviews were shorter, averaging less than 14 minutes. Both were within the time limits we targeted for the surveys.

## **Spanish-Language Instruments**

Interviews were conducted only in English and Spanish. We utilized the services of the translation firm LanguageWorks to create Spanish-language instruments from the post-pretest versions of the Household Screener, Parent, and Adolescent Interviews.

LanguageWorks translators who are native Spanish speakers first translated the instruments from English into Spanish. An independent linguist then translated the instruments back into English. This “back-translation” process allowed us to identify idiomatic expressions that did not translate appropriately.

### **2.1.2. Survey Instruments**

In this section, we briefly describe the content of the Household Screening Interview, the Parent Interview, and the Adolescent Interview.

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<sup>2</sup> These interviews were administered over the telephone using paper versions of the survey instruments, since the computer-assisted telephone interview (CATI) versions could not be programmed until the instruments had been finalized.



## **Household Screening Interview**

The Household Screening Interview was a short, computer-assisted telephone interview (CATI)-administered instrument. Its purpose was to identify households, screen households for eligible respondents, randomly select an adolescent respondent for the interview, identify the parent who knows the most about the adolescent respondent (a.k.a. the “most knowledgeable parent,” or “MKP”), and produce estimates used in the calculation of sample weights. The interview was designed to be short and as non-threatening as possible. It did not contain substantive questions relating to sex or abstinence.

## **Parent Interview**

The Parent Interview was designed as a 20-minute CATI survey. The interviewer began by securing informed consent from the parent by explaining the purpose of the interview, confidentiality, and the voluntary nature of participation. If the parent refused informed consent, the call was terminated. If the parent wasn’t sure if he or she wished to participate, an opportunity to answer questions and/or take more time to think was provided. If and when informed consent was obtained, the interviewer proceeded with the remainder of the survey.

The Parent Interview began with a series of questions about the target adolescent respondent and his or her relationship to the MKP. The MKP was then asked questions related to sex and abstinence (such as attitudes and views on abstinence and abstinence messages, communication about abstinence, sex, and sexual values, sources of information about sexual behavior, and values related to sexual activity before marriage). For more sensitive questions, we employed “digit grabber” technology, which allowed the MKP to key in his or her responses using the touch-tone keypad, in order to maximize respondent comfort level in the event that his or her answers might be overheard by another household member.

In the last substantive part of the Parent Interview, the MKP was then asked to provide demographic information about him- or herself, and information on socioeconomic status (income, educational attainment) for the entire household.

To conclude the Parent Interview, the interviewer asked about other telephone numbers in the household, as well as interruptions in landline telephone service. The demographic and telephone coverage information was used to create sample weights for nonresponse and noncoverage of non-telephone households. Finally, the interviewer sought the parent’s permission to contact the targeted sample adolescent for the Adolescent Interview. If the adolescent was not at home at the time of the interview, the interviewer asked for the best times and telephone number to reach the adolescent, and called back at a later time.

## **Adolescent Interview**

The Adolescent Interview was also a 20-minute CATI interview, designed to be easily understood by the youngest sampled adolescents, 12-year-olds.

The first part of the interview was structured to confirm the adolescent's basic demographics as initially reported by the MKP, and to secure informed assent before continuing to the core questions on attitudes about sex and abstinence.

To the extent possible, questions in the Adolescent Interview were structured to parallel questions in the Parent Interview, so that paired parent-adolescent responses could easily be compared. No questions were asked about sexual behaviors; rather, the focus was on communication, attitudes, and beliefs about abstinence and related topics. Where necessary, interviewers provided definitions or idiomatic expressions in order to ensure question intent was clear to younger respondents. Adolescents were also asked to assess the attitudes of their parents and peers. As with the Parent Interview, adolescents responded to more sensitive survey items by keying in their responses on their touch-tone keypads using "digit grabber" technology, allowing them to respond without being overheard by another household member.

## **2.2. Sampling**

In this section, we provide a brief overview of the sampling design and procedures for this public opinion survey of parents and adolescents. Please see Appendix B-1 for a more detailed description of sampling procedures and construction of analytic sampling weights.

The sample was designed to yield a national probability sample of eligible adolescents between 12 and 18 years of age. We employed list-assisted random-digit-dialing (RDD) sampling to obtain a probability sample of households with landline telephones. Households without telephone service and households with only cellular telephone service were necessarily excluded from the study.

In each household contacted, we first identified a resident aged 18 years or older to answer a short series of screening questions to determine household eligibility. Based on this adult respondent's reports, we eliminated households without one or more eligible adolescents aged 12 to 18 years in current residence. In each eligible sample household identified, one adolescent between 12 and 18 years of age was then randomly selected. The adult respondent was then asked to identify a parent or guardian living in the household who knew the most about that adolescent's attitudes and beliefs about sexual activity, abstinence from sex, and abstinence education. This "most knowledgeable parent" for that adolescent was then asked to participate in the survey interview. Informed consent was obtained from both parents and adolescents before proceeding with the interview. The final sample of paired interviews (adolescent/parent) consisted of exactly 1,000 completed cases.

All analyses in this report incorporate analytic weights to account for the random sampling design. These weights adjust for overall probability of selection into the sample as well as survey nonresponse, and additionally bring the weighted distribution of the 1,000 paired interviews into agreement with population control totals obtained from the 2006 American Community Survey (ACS).

The final constructed weights sum to 29,137,703 adolescents in the United States. The sample can thus be used to draw inferences about adolescents in the United States. However, because the parent respondent was not randomly selected, but self-identified as the "most knowledgeable parent," it is

important to note the sample *cannot* be used to draw inferences about parents of adolescents in the United States.

## **2.3. Analytic Approach**

Our analysis of the survey data proceeded in three broad phases. First, we examined individual variables to identify the most appropriate measures for use in our later analyses. As noted in Section 2.1, in designing our survey instruments we intentionally included multiple questions related to each construct of interest in order to improve overall survey reliability. In order to identify the most reliable measure (or group of measures) for each construct, we therefore examined means and distributions for each variable, and applied basic principal component analysis techniques to identify appropriate item groupings. Details of this process for explanatory and outcome variables are provided in Section 2.3.1 below.

Our next step was to perform a series of basic descriptive analyses in order to provide a broad overview of parent, adolescent, and peer attitudes about sex, abstinence, and abstinence messages based on the outcomes and relevant covariates identified in the first phase. All descriptive analyses incorporated the sampling weights and strata developed as described in Appendix A-1, using built-in survey routines available in standard statistical software packages (PROC SURVEY in SAS and “svy:” commands in Stata). The resulting estimates are thus representative of the United States population of adolescents aged 12-18. As noted above, since parents were chosen through self-identification as the “most knowledgeable parent” for each randomly-selected adolescent, these results should *not* be considered as representative of parents of adolescents in the United States.

These descriptive results provide context for the final analytic phase, a series of multivariate analyses based on the conceptual model presented in Section 1.3. Nested logistic regressions were used to sequentially build up the final empirical model for analysis. In cases where we retained multiple outcome measures representing a single construct, we used seemingly-unrelated regression (SUR) estimation to perform joint hypothesis testing across the full set of measures. Appendix A-2 provides additional details on the analytic approach used in our multivariate analyses.

As discussed above, it is important to note that because our survey data were not collected as part of an evaluation, statistical associations identified in these analyses must be considered correlational, not causative. Results may provide context and suggest directions for future research, but the reader is cautioned to avoid making causal inferences about relationships between our attitudinal measures and other factors considered here in the absence of an experimental design.

### **2.3.1. Defining Key Analytic Variables**

We collected extensive survey data from adolescents and parents on attitudes and communication about sex and abstinence. In order to inform and provide context for these intermediate and final outcomes, we additionally collected information about demographics and socioeconomic status, religious service attendance, and overall relationship quality. Since, when possible, we asked multiple questions for each construct of interest in order to improve overall survey reliability, it was necessary to perform a series of exploratory analyses in order to identify the most valid and reliable measures for the purposes of our study.

In this section, we describe in greater detail our approach to identifying and constructing the variables used in our final analyses.

## **Outcome Variables**

Our first step was to identify individual variables (or groups of variables) to be used as final and intermediate outcome variables based on the constructs identified in the conceptual model. Although the sampling strategy was designed to produce results representative of the United States population of adolescents aged 12-18, in building our model we also examined intermediate outcomes for the sampled adolescent's closest friends and the self-identified "most knowledgeable parent" of the sampled adolescent.

***Parent attitudes.*** Parent attitudes about sex and abstinence were assessed via reported level of agreement with a series of ten statements about sexual intercourse, marriage, and appropriate sexual behavior for their adolescent.<sup>3</sup>

We performed principal components analysis with orthogonal varimax rotation on this group of parent attitude variables in order to explore the underlying data structure. Based on this analysis, we identified two underlying factors. One item, ("At your (teenager's/child's) age right now, there is little you can do to keep (your teenager/child) from engaging in sexual intercourse."), did not load on either of the two factors identified, and thus was considered separately in our analyses.<sup>4</sup>

The ten individual attitudinal measures were thus grouped into three broad outcome categories: 1) general attitudes about sex and abstinence; 2) attitudes about permissible adolescent sexual behavior; and 3) perceived degree of parental control over adolescent sexual behavior. Table 2-1 lists included items and reliability coefficients for each category.

For many of these attitudinal measures, very few parents fell into the more extreme response categories. (For instance, only 8 parents in our sample strongly agreed that "having sexual intercourse is a good thing to do at your [teenager's/child's] age."<sup>5</sup>) For the multivariate analyses presented in Section 3.2, the four original response categories for these outcome variables ("strongly agree," "somewhat agree," "somewhat disagree," and "strongly disagree") were therefore collapsed into binary response categories of "agree" or "disagree." Where necessary, original responses were reverse-coded so that "agreement" reflected more restrictive or conservative views, and "disagreement" more permissive or liberal views.

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<sup>3</sup> This section of the parent survey instrument also included one item asking parents to report on their perceptions of their adolescents' views; since this item is conceptually distinct from those related to parents' own attitudes, we did not consider it in our analysis of parent attitudes here.

<sup>4</sup> Note that principal components analysis was used only to identify groups of related outcomes; the resulting factor scores are not otherwise employed in our analyses.

<sup>5</sup> Statistical techniques commonly used to analyze categorical dependent variables following a natural ordering, such as the ordered logistic regressions we employ elsewhere, do not generally perform well when the data are skewed in this way.

**Table 2-1.****Outcome Categories: Attitudes about Sex and Abstinence**

<b><i>Outcome category</i></b>	<b><i>Included survey items</i></b>	<b>Cronbach's Alpha</b>	
		<b><i>Parent attitudes</i></b>	<b><i>Adolescent attitudes</i></b>
General parent attitudes about sex and abstinence	It is against your values for your (teenager/child) to have sexual intercourse before marriage.	0.8013	0.7693
	Having sexual intercourse is something only married people should do.		
Parent attitudes about permissible adolescent sexual behavior	Having sexual intercourse is a good thing to do at your (teenager's/child's) age.	0.8503	0.9191
	At your (teenager's/child's) age right now, it would be okay for your (teenager/child) to have sexual intercourse if (he/she) has been dating the same person for at least one year.		
	At your (teenager's/child's) age right now, it would be okay for your (teenager/child) to have sexual intercourse before marriage <b>if</b> he/she plans to marry the person.		
	At your (teenager's/child's) age right now, it would be okay for your (teenager/child) to have sexual intercourse as long as he/she and his/her partner think that it is okay.		
	At your (teenager's/child's) age right now, having sexual intercourse would create problems or would make life difficult.		
	It would be okay for your (teenager/child) to have sexual intercourse before he/she leaves high school.		
	At your (teenager's/child's) age right now, it would be okay for your (teenager/child) to have sexual intercourse if (he/she) uses birth control.		
Perceived degree of parental control over adolescent sexual behavior	At your (teenager's/child's) age right now, there is little you can do to keep your (teenager/child) from engaging in sexual intercourse.	N/A	N/A

Parental attitudes about potential sources of abstinence messages were assessed via a series of survey questions about whether parents favored or opposed their adolescent being told by each source that he or she should not have sexual intercourse until marriage. Their responses were used to generate a dichotomous outcome measure for each source, with binary response categories for “agree” and “disagree.”

**Peer attitudes.** Although we were able to assess parent attitudes directly via their self-reported survey data, we were forced to rely on adolescent reports about their closest friends in order to assess peer attitudes. We asked adolescents to report how many of their closest friends of their own age think someone should wait until marriage before having sexual intercourse, and how many think it is okay for young people of their age to have sexual intercourse, with possible response categories of “none,” “some of them,” “most of them,” or “all of them.”

We used responses to these survey questions to create two separate four-level peer attitude variables. Responses to the second question were reverse-coded, so that higher values represented more conservative or restrictive attitudes for each measure.

**Parent-adolescent communication.** In order to assess the frequency and content of parent-adolescent communication, we collected extensive survey data from parents and adolescents on their frequency of general communication about sex and sexual values and of conversations about specific sex and abstinence-related topics. The parent-reported communication measures used as intermediate and final outcomes in our analyses were as follows:

- *Comfort level talking to each other about sex*, parent and adolescent reports. (Response categories: very comfortable, somewhat comfortable, somewhat uncomfortable, very uncomfortable.)
- *Ever had conversations with adolescent about sex or sexual issues*, parent report. (Binary response variable.)
- *Frequency of conversations with adolescent about sexual values in past year*, parent report. (Response categories: never, one or two times, more than two times.)
- *Frequency of communication about specific topics*, parent report. (Response categories: never, once or twice, more than twice but less than 10 times, 10 or more times.)
  - the basics of how babies are made, pregnancy, or birth
  - sexually transmitted diseases or HIV/AIDS
  - how to have good romantic relationships
  - how to behave on dates
  - how to resist pressures to have sexual intercourse
  - waiting to have sexual intercourse until marriage
  - how religious values relate to sexual intercourse
- *Specific statements to adolescents*, parent report. (Binary response variables.)
  - Young people should not engage in sexual intercourse until they are married.
  - Young people should not engage in sexual intercourse until they are in a relationship with someone they feel they would like to marry.

- Young people should not engage in sexual intercourse until they have, at least, finished high school.
- It's okay for young people to engage in sexual intercourse as long as condoms are used to protect against sexually transmitted diseases and pregnancy.

For the questions about parent-adolescent comfort levels communicating about sex, we coded measures so that higher values indicated greater levels of comfort. For the other communication measures, we coded responses so that higher values indicated higher levels or frequency of parent-adolescent communication.

***Peer-adolescent communication.*** In order to gauge levels of peer-adolescent communication, adolescents were asked how frequently they talked to their closest friends of their own age about sexual values, or what is right and wrong about sex, with possible response categories of “never,” “sometimes,” or “often.” Responses to this question were used to create our three-level peer communication frequency measure, with higher values indicating more frequent levels of communication.

***Adolescent perceptions of parent-adolescent communication.*** These measures are simply adolescent responses to questions exactly paralleling the survey questions previously posed to their parents, allowing for direct comparison of the two reports. Note that adolescents reported specifically on their conversations with the self-designated “most knowledgeable parent,” not communication with their parents in general; we collected no data on levels of communication about sex and abstinence with any other parent or family member.

- *Ever had conversations with your parent about sex or sexual issues*, adolescent report. (Binary response variable.)
- *Frequency of parent's conversations with you about sexual values in past year*, adolescent report. (Response categories: never, one or two times, more than two times.)
- *Frequency of communication from parents about specific topics*, adolescent report. (Response categories: never, once or twice, more than twice but less than 10 times, 10 or more times.)
  - the basics of how babies are made, pregnancy, or birth
  - sexually transmitted diseases or HIV/AIDS
  - how to have good romantic relationships
  - how to behave on dates
  - how to resist pressures to have sexual intercourse
  - waiting to have sexual intercourse until marriage
  - how religious values relate to sexual intercourse
- *Specific statements from parents to adolescents*, adolescent report. (Binary response variables.)
  - Young people should not engage in sexual intercourse until they are married.
  - Young people should not engage in sexual intercourse until they are in a relationship with someone they feel they would like to marry.

- Young people should not engage in sexual intercourse until they have, at least, finished high school.
- It's okay for young people to engage in sexual intercourse as long as condoms are used to protect against sexually transmitted diseases and pregnancy.

As with the parent-reported measures discussed previously, we coded responses to each of these questions such that higher values represented higher reported levels of parent-adolescent communication.

**Adolescent attitudes.** Adolescent views about sex and abstinence were assessed via level of agreement with a series of statements exactly parallel to those used to assess parent views. We again performed a principal components analysis using orthogonal varimax rotation to assess the underlying data structure for these attitudinal measures. However, for adolescents, nine of the measures loaded on a single factor, instead of the two factors we found for parents. (Again, the adolescent-reported parental control measure did not load with the other measures.)

To preserve comparability of the adolescent and parent attitude analyses, we nevertheless organized the adolescent attitude measures into the same three broad groupings for analysis: 1) general attitudes about sex and abstinence; 2) attitudes about permissible sexual behavior; and 3) perceived degree of parental control. Individual items and reliability coefficients for each grouping are reported above in Table 2-1. Although the internal reliability of the general attitudes grouping is somewhat lower than for parents, as one might expect given the young age of some adolescent respondents in our sample, both adolescent measures meet minimal consensus standards for internal reliability.

In general, adolescent responses were more evenly dispersed across the four original response categories for the attitudinal outcome variables (“strongly agree,” “somewhat agree,” “somewhat disagree,” and “strongly disagree”) than the responses of their parents. However, in order to maximize comparability of the results from the parent and adolescent regressions, we again collapsed responses into binary response categories of “agree” or “disagree.” Original responses were reverse-coded as appropriate so that “agreement” reflected more restrictive or conservative views, and “disagreement” more permissive or liberal views.

### **Explanatory Variables**

In addition to the attitude and communication variables used as outcomes in our analysis, we collected information on parent and adolescent demographics, socioeconomic status, parent-adolescent relationship quality, religious service attendance, and adolescent receipt of information about sex, abstinence, and sexual values in classes or programs to be used as explanatory variables in our model. In this section, we describe these key covariates; Tables 2-2 and 2-3 provide weighted descriptive statistics for these variables our sample. Note again that, because the interviewed parent was not randomly selected, but rather the “most knowledgeable parent” for the randomly-selected adolescent, the parent sample should not be considered nationally representative. This explains, for example, the high proportion (77±4 percent) of female parent respondents.



**Table 2-2.**  
**Demographic Characteristics of Sampled Parents and Adolescents**  
**(Results weighted to reflect proportions in US population of adolescents)**

Characteristic	Parents				Adolescents			
	N	Percent	95% Confidence Interval	Standard Error	N	Percent	95% Confidence Interval	Standard Error
<b>Sex</b>	1000				1000			
Male		22.8%	18.8-26.7	2.0		51.2%	46.7-55.7	2.3
Female		77.2%	73.3-81.2	2.0		48.8%	44.3-53.3	2.3
<b>Age*</b>	994	44.8 years	23-84	1515.0	1000	15.0 years	12-18	336.3
<b>Race/Ethnicity</b>	997				996			
Hispanic		16.3%	12.4-20.2	2.0		18.0%	14.0-22.0	2.0
Non-Hispanic White		62.2%	57.5-66.9	2.4		59.5%	54.8-64.2	2.4
Non-Hispanic Black		14.8%	11.0-18.8	2.0		15.2%	11.3-19.2	2.0
Other		6.7%	4.4-8.9	1.1		7.3%	5.2-9.4	1.1
<b>Religiosity</b>	995				998			
Attends Religious Services Weekly		45.3%	40.7-49.8	2.3		41.1%	37.0-45.8	2.2
Attends Religious Services Less than Once a Week		36.0%	31.8-40.2	2.2		38.1%	33.6-42.6	2.3
Never Attends Religious Services		18.7%	15.4-22.1	1.7		20.5%	16.7-24.2	1.9
<b>Marital Status</b>	999							
Married		75.0%	70.5-79.4	2.3		--	--	--
Widowed		3.0%	0.9-5.1	1.1		--	--	--
Divorced or Separated		14.4%	10.9-17.9	1.8		--	--	--
Never married		7.6%	4.7-10.6	1.5		--	--	--
<b>Educational Attainment</b>	999							
Less than High School Degree		14.5%	10.1-18.9	2.2		--	--	--
High School Degree		26.2%	22.2-30.1	2.0		--	--	--
Some College/Less than 4-yr College Degree		34.6%	30.3-38.8	2.2		--	--	--
4-yr College Degree		14.8%	12.4-17.2	1.2		--	--	--
Postgraduate Degree		10.0%	7.9-12.0	1.0		--	--	--

\*The values reported for age represent the mean, range, and standard deviation.

**Table 2-3.**  
**Demographic Characteristics of Sampled Households**  
**(Results weighted to reflect proportions in US population of adolescents)**

Characteristic	Household		
	N	Percent	95% Confidence Interval Standard Error
<b>Primary Language in Home</b>	998		
English		95.2%	3.1-97.3 1.1
Non-English		4.8%	2.7-6.9 1.1
<b>Parenting Status</b>	1000		
Single Parent		18.0%	13.8-22.2 2.1
<b>Income</b>	963		
\$10,000 or less		7.6%	3.9-11.3 1.9
\$10,001-\$20,000		7.0%	4.5-9.6 1.3
\$20,001-\$30,000		12.4%	9.3-15.6 1.6
\$30,001-\$40,000		11.3%	8.1-14.4 1.6
\$40,001-\$50,000		8.2%	5.6-10.7 1.3
\$50,001-\$60,000		8.7%	6.3-11.1 1.2
\$60,001-\$70,000		7.2%	5.0-9.3 1.1
Over \$70,000		37.6%	33.5-41.8 2.1
<b>Highest Education in Household</b>	999		
Less than High School Degree		8.1%	4.2-12.1 2.0
High School Degree		21.1%	17.3-25.0 2.0
Some College/Less than 4-yr College Degree		38.7%	34.3-43.1 2.2
4-yr College Degree		16.3%	13.8-18.8 1.3
Postgraduate Degree		15.8%	13.3-18.3 1.3
<b>Geographic Location</b>	1000		
Rural		16.8%	13.8-19.8 1.5
Urban		83.2%	80.2-86.2 1.2
Region – NE		17.6%	14.2-21.0 1.7
Region – MW		22.4%	18.9-25.8 1.8
Region – S		36.1%	31.6-40.6 2.3
Region – W		23.9%	20.1-27.7 1.9

**Parent demographics.** We collected data on parent age, gender, race/ethnicity, language status, educational attainment, marital status, and single parent status.

**Age.** Our age variable was based on simple parent self-reports. Parents were first asked for their birthdate; if they refused to provide it or did not know, they were asked instead to provide their age in years. From these responses, we coded a variable based on self-reported parent age in years for use in our analyses.

**Gender.** Parents specified their gender as either male or female.

*Race/ethnicity.* Coding parent race and ethnicity variables was somewhat more complex. Following current US Census standards, parents were asked to self-report whether or not they were of Hispanic or Latino ethnicity, and, in a separate survey question, to identify their race, with the option of an “Other” racial category, for which they were asked to provide a statement of their racial identity. Using this option, many parents self-identified their race as Hispanic or Latino.

Although current practice is to treat self-reported Hispanic or Latino origin as a statement of ethnicity rather than race, since we had no additional data available on respondent race, to do so here would have resulted in a substantial number of missing responses for race. Instead, we elected to use self-reported Hispanic or Latino status, whether originally specified as a race or an ethnicity, as a single composite race/ethnicity category. Individuals who did not self-identify as Hispanic or Latino were then separately categorized into the remaining specified race categories.

In cases where the number of parents in an individual race category was too small to perform adequate inference, we combined responses into a single composite “other” race category. This category also included individuals who reported more than one race. The final four composite race/ethnicity categories were thus: non-Hispanic white, non-Hispanic black, Hispanic, and other race.

*Language status.* Parents were asked to report whether they primarily spoke English, Spanish, or some other language at home. Since very few respondents fell into the “other” language category, we used these responses to code a single English/non-English primary language status variable. This variable is included in our specifications primarily as a likely proxy for recent immigrant status.

*Educational attainment.* We asked parents to report their last grade or year of school completed, with possible responses coded into ten individual outcome categories. Based on the distribution of responses, we collapsed these into five composite educational attainment categories for use in our analyses: 1) high school diploma or less, 2) high school diploma but no further formal schooling, 3) some schooling after high school but no 4-year degree (including individuals who attended some college but did not graduate, individuals who graduated from a 2-year institution, and individuals who attended trade, vocational, or technical program), 4) 4-year college diploma, and 5) any formal post-graduate schooling.

*Marital status.* Parents were asked to report whether they were married or in a marriage-like relationship, divorced, legally separated, widowed, or never married. In order to simplify interpretation of results, we combined divorced and legally separated parents into a single category.

Because very few individuals in our sample were widows, we could not perform adequate statistical inference on this category; we therefore included them for the purpose of our analyses in the same category with individuals who reported that they were married or in a marriage-like relationship. Our reasoning for this was as follows. Legally separated, divorced, or never married parents are assumed to have voluntarily chosen their single state. Widowed parents, in contrast, are single because their marriages ended involuntarily with the death of their spouse. For the purposes of this study, which specifically focuses on beliefs about sex as it relates to marriage, this is a key distinction, since parents who are unmarried by choice may have very different attitudes about sex outside of marriage

than do parents who are married or involuntarily single. Our implicit assumption is therefore that widowed parents are more likely to be similar in attitudes about sex and abstinence to married individuals than they are to other unmarried parents.

*Single parent status.* Adolescents in single-parent households are at higher risk for negative social and behavioral outcomes (America's Federal Interagency Forum on Child & Family Statistics, 2008; McLanahan & Sandefur, 1994). We therefore explicitly asked parents to report how many adult individuals were currently residing in their household. Parents living in a household with no other adults were classified as single parents for the purposes of our analysis.

*Household socioeconomic status.* In addition to the parent-specific demographic information discussed above, we collected data from parents on variables applying to the entire household, which were also used in adolescent-specific analyses.

*Income.* Household income was reported as a scale measure, with each one-point increase in the scale representing a \$10,000 increase in income bracket, e.g. \$10,001-\$20,000 to \$20,001-\$30,000 per year. Income was top-coded at \$70,000 or more, in order to maximize parent response to this sensitive question.

*Maximum Household Educational Attainment.* In addition to their own educational attainment, parents were asked to report on the maximum level of education obtained by any individual in the entire household. Since in many households, one parent may have significantly higher completed education than another, and since this may differ by parent gender or other characteristics, this maximum household educational attainment measure may more accurately reflect household socioeconomic status as a whole than parent educational attainment alone. However, since a parent's own educational status may also be separately associated with his or her own attitudes about sex and abstinence, we retain both measures as potential explanatory covariates in the model.

*Urban residence.* Adolescents living in cities are exposed to a very different set of risk factors than adolescents living in more rural locations. We therefore wished to ascertain whether attitudes differed by urban residence. Households were classified as "urban" if they were located in a Metropolitan Statistical Area (MSA).

*Geographic region of residence.* The United States is characterized by significant cultural differences across regions. Numerous ongoing and past survey studies have found differences in access to health and other services, attitudes and perceptions about health issues, as well as adolescent and family health outcomes by geographic region. Our analyses thus examined whether region of residence was associated with differences in overall parent and adolescent attitudes about sex and abstinence. Households were classified by Census region: Northeast, Midwest, West, and South.

*Adolescent demographics.* Adolescent attitudes, communication, and sexual behavior have been shown to vary substantially by age, race, and gender. We therefore collected survey data on these demographic characteristics for all adolescents in our sample.

*Age.* We used adolescent self-reported grade level as a proxy for adolescent age, since grade level is thought to be a more important determinant of exposure to peer influences and other related factors

than is biological age. This approach is common in studies of the adolescent population (Huebner & Howell, 2003). Adolescents reported grade levels from 5 to 12, with a small number of adolescents reporting that they were freshmen in college. If the adolescent was not currently enrolled in school, their grade level was based on their last completed grade (although this applied to only 5.3% of the sample).

*Gender.* Adolescent gender was coded based on parents' reports. We assumed that parents were unlikely to misreport this basic information about their child, and by eliminating this question from the adolescent instrument we were able to decrease the total duration of the adolescent survey in hopes of encouraging interview completion.

*Race/ethnicity.* As with gender, we relied on parents' reports to identify adolescents' race/ethnicity. Given the age of the youngest adolescent respondents in our sample, we assumed that this approach was more likely to yield accurate responses. Our composite adolescent race/ethnicity was coded into four distinct categories (non-Hispanic white, non-Hispanic black, Hispanic, and other race/ethnicity) in an analogous process to that used for the parent race/ethnicity variable.

*Religiosity.* We collected data on both parent and adolescent frequency of religious service attendance as a proxy for overall household religiosity. Parents and adolescents were separately asked to report how often they attended religious services, with possible response categories of once a week or more often, 2-3 times a month, once a month, less than once a month, and never. Based on the distribution of the data, we collapsed these into three distinct categories: once a week or more often, less than once a week, and never. As discussed in greater detail below, we argue that considering both parent and adolescent religious service attendance in our analyses provides a more complete picture of overall household religiosity than considering either alone.

*Relationship Quality.* We asked parents and adolescents to report on the overall closeness and quality of their relationship in order to determine whether this factor had any relationship to frequency of communication, or, indirectly, to adolescent attitudes about sex and abstinence. Relationship quality was assessed via responses to three questions asked of both adolescents and their parents:

- In general, how often do you and [your parent/teenager/child] do things together that you personally enjoy? (Response categories: Once a week or more often, 2-3 times a month, once a month, less than once a month, never.)
- In general, how close do you feel you are to [your parent/teenager/child]? (Response categories: Not close at all, a little close, close, very close)
- Would you say your relationship with [your parent/teenager/child] is very good, fairly good, fairly poor, or poor?

Responses to each of these variables were coded into ordered scale measures, with higher values indicating more positive assessments of relationship quality.

Parent responses to these questions were quite skewed, with extremely few parents reporting that they enjoyed activities with their adolescent any less than once a week, that they were not close or only a little close to their adolescent, or that their relationship with their adolescent was very poor or poor.

Adolescent responses, while still mostly positive, were more moderate, with adolescents slightly less likely than their parents to report that they had enjoyed activities with their parent once a week or more often, that they were close or very close, or that their relationship was good or very good.

While parent and adolescent responses were positively correlated, there were still some cases in which parents and adolescents reported relatively disparate views on their relationships. Table 2-4 below compares parent and adolescent reports of relationship closeness; although the majority of cases fall on the diagonal, indicating concordance between parent and adolescent responses, there was at least one case in most cells off of the diagonal as well, indicating cases where parent and adolescent assessments disagreed. The distribution across parents and adolescents of the other two relationship quality measures was similar.

**Table 2-4.**  
**Survey-weighted Distribution of Adolescent- and Parent-reported Closeness of Relationship (N=996)**

Parent-Assessed Relationship Closeness	Adolescent-Assessed Relationship Closeness					Total
	How close?	Not close at all	A little close	Close	Very close	
	Not close at all	0.1%	0.2%	0.1%	--	0.4%
	A little close	0.1%	1.5%	1.1%	0.9%	3.7%
	Close	0.1%	4.9%	6.3%	8.0%	19.2%
	Very close	0.9%	5.2%	18.5%	52.2%	76.7%
	Total	1.2%	11.8%	26.0%	61.0%	100.0%

We hypothesized that both parent and adolescent assessments of relationship quality could potentially be associated with frequency of parent-adolescent communication; as discussed in the literature review, adolescent and parent reports of relationship closeness may have differential effects on outcomes. In the analyses presented below, we therefore simultaneously examined both parent- and adolescent-reported relationship quality as intermediate outcomes and drivers of parent-adolescent communication about sex, abstinence, and sexual values.

***Adolescent exposure to information about sex, abstinence, and sexual values in classes or programs.*** We collected data from parents and adolescents on adolescent exposure to information about sex, abstinence, and sexual values in a class or program in order to determine whether participation in such programs was associated with differences in views or communication levels among adolescents. The specific measures used in our analyses were as follows:

- *Adolescent participation in class, program, or event that talked about waiting to have sexual intercourse until marriage in past year*, parent report. (Binary response variable.)
- *Specific topics covered in a class or program*, adolescent report (Binary response variables.):
  - the basics of how babies are made, pregnancy, or birth
  - how to have good romantic relationships

- how to behave on dates
- how to resist pressures to have sexual intercourse
- waiting to have sexual intercourse until marriage
- how religious values relate to sexual intercourse
- *Location of class or program in which these topics were covered*, adolescent report (Binary response variables.):
  - school
  - doctor’s office, health center, or health clinic
  - place of worship
  - community organization
  - some other place.

Note that these survey questions were not specifically designed to determine whether adolescents had participated in a Title V or other abstinence education program. A positive response could indicate that the adolescent had received this information in the context of an abstinence education class or program, a comprehensive sex education class or program, a community or church event, or any other class, program, or event in which the adolescent participated. Readers should therefore carefully consider the wording of each question when interpreting results based on these measures.

### **2.3.2. Multivariate Analysis**

The relationship between parent, peer, and adolescent characteristics, communication levels, and attitudes about sex and abstinence as depicted in the conceptual model in Section 1.3 is extremely complex. In testing the posited relationships therein, we faced two major analytic challenges: effectively accounting for both direct and indirect associations, and incorporating multiple outcome measures representing a single conceptual construct of interest. We addressed the first challenge using nested multiple regression models to sequentially build our empirical model, and the second using seemingly-unrelated regression, or “SUR,” techniques, in order to perform joint hypothesis testing. These methodological techniques are described in greater detail in Appendix B for the interested reader; however, we present a brief overview in this section to assist with interpretation of results.

In nested multiple regression models, groups of explanatory variables are added to the model in sequence in order to determine to what extent each group contributes directly and indirectly to the outcome of interest. As groups of explanatory variables are added, results from each step in the sequence are then compared, in order to determine whether each explanatory variable is independently associated with the outcome of interest, or whether the observed relationship is partially or entirely mediated by its association with other intermediate outcomes.

The order in which we added groups of variables to the model was determined by the assumed causal relationships described in the conceptual model in Exhibit 1-1. For example, as shown in Exhibit 1-1, parent attitudes are assumed to influence adolescent attitudes about sex and abstinence directly, as well as indirectly through their influence on levels of parent-adolescent communication. In building our model, we first therefore used logistic regressions to test two sets of direct associations: the

association between parent attitudes and parent-adolescent communication, and the association between parent-adolescent communication and adolescent attitudes.

Once we had confirmed that these associations were statistically significant, we then performed a third logistic regression with adolescent attitudes as the dependent variable, and including both parent-adolescent communication and parent attitude measures as explanatory factors. To the extent that the association between parent attitudes and adolescent attitudes was reduced in this specification as compared to the specification not adjusting for parent-adolescent communication levels, we would conclude based on the posited causal relationships in the conceptual model that the association between parent attitudes and adolescent attitudes was indeed partially or wholly mediated through the association between parent attitudes and communication levels.

We used this approach to build up a complete empirical model of factors associated with differences in adolescent attitudes. In testing the many relationships present in the conceptual model, we thus necessarily performed a series of intermediate analyses to test all assumed direct and indirect associations. While for the sake of brevity we present only results for the final model of factors associated with adolescent perceptions of communication levels and attitudes about sex and abstinence in the main text, we include results of intermediate analyses of factors associated with differences in parent and peer attitudes and communication levels in Appendix C, and refer to these results throughout the results section in the main text where relevant.

Finally, in many cases we wished to jointly test hypotheses about groups of outcome measures representing a single construct considered as a whole. In our results section, we therefore refer to findings both for individual outcome measures and for average effects across related outcome groupings. As described in greater detail in Appendix B, SUR techniques are used to generate appropriate standard errors for testing hypotheses about these average effects.



### 3. Results

In this section, we present an overview of findings from our descriptive and multivariate analyses on parent and adolescent attitudes about sex and abstinence. The original sample includes 1,000 adolescent and parent matches that have been weighted to represent the entire United States adolescent population.<sup>6</sup> Sample sizes accounting for individual item non-response are provided in each table and chart.

#### 3.1. Parent and Adolescent Attitudes

We begin with findings from our descriptive analyses of parent and adolescent attitudes. As discussed in Section 1.3, these results are intended to address the following two major research questions:

- What are adolescent and parent attitudes concerning sex and abstinence? How do they vary by basic sociodemographic characteristics?
- How are the attitudes of parents and their adolescents similar to or different from each other? How do these patterns vary by basic sociodemographic characteristics?

When reporting descriptive results, we include both point estimates and the associated 95 percent confidence intervals. These confidence intervals represent the range in which, based on the distribution of responses in our data, we are 95 percent confident that the true underlying population value lies. For example, we report below that 54(±4) percent of adolescents in our sample somewhat or strongly agreed that it was against their values to have sexual intercourse before marriage. We can conclude with 95% confidence based on this result that between 50 and 58 percent of adolescents in the United States would somewhat or strongly agree with this statement.

Readers may use reported confidence intervals to make inferences about differences across related outcome measures or between different subgroups. For example, we report below that 85±3 percent of parents in our sample favored delivery of abstinence messages to their adolescents in a place of worship, as compared 83±3 percent who favored delivery of those messages in a school, and 71±4 percent in a community organization. We would conclude based on these findings that, with 95 percent certainty, parents differed in their support for abstinence messages delivered in a place of worship versus those delivered in a community organization, and, separately, in their support for messages delivered in a school versus those delivered in a community organization, since the associated confidence intervals for those two sets of measures do not overlap. In contrast, although the 85 percent point estimate for parents favoring adolescent receipt of abstinence messages in a place of worship is higher than the 83 percent point estimate for parents favoring adolescent receipt of abstinence messages in a school, we cannot conclude that parent support for abstinence messages differed across these two settings, because the lower bound of the confidence interval for the place of worship measure ( $85 - 3 = 82$  percent) is less than the upper bound of the confidence interval for the school measure ( $83 + 3 = 86$  percent).

---

<sup>6</sup> Summary demographic characteristics of sampled adolescents and their parents were previously provided in Tables 2-2 and 2-3.

In our discussion of results, we employ the following language conventions. For measures of general attitudes about sex and abstinence, greater degrees of opposition to pre-marital sex are termed more “conservative,” and lesser degrees of opposition more “liberal.” For measures of attitudes about adolescent sexual behavior, higher levels of opposition to adolescent sexual behavior are deemed more “restrictive,” and lower levels more “permissive.” It is important to note that these terms are applied in a relative sense; given the high levels of opposition to pre-marital sex and adolescent sexual behavior among parents in general, a parent deemed less conservative might, for example, only somewhat agree rather than strongly agree that sexual intercourse is something only married people should do.

To test differences in overall restrictiveness or conservativeness of views across subgroups and outcome measures, we performed Pearson’s chi-square tests to compare distributions of responses. This test is the standard statistical approach used to compare differences for categorical outcome measures. Unless otherwise noted in the text, when we make explicit comparisons between outcomes across subgroups (e.g., conservativeness in general attitudes about sex and abstinence in male vs. female respondents); between adolescents and MKP responses for parallel outcome measures (e.g., responses to “It would be okay for you/your adolescent to have sex before leaving high school” for adolescents vs. MKPs); or between related outcome measures within a particular group of respondents (e.g., adolescent conservativeness based on responses to “It is against your values for you to have sexual intercourse before marriage” vs. responses to “Having sexual intercourse is something only married people should do”), all reported differences were statistically significant with a p-value of less than 0.0001 based on the Pearson’s chi-square test statistic.

### **3.1.1. Parent Attitudes about Sex, Abstinence, and Abstinence Messages**

In this section, we present selected descriptive information on parent attitudes about sexual intercourse and abstinence, including a discussion of differences in attitudes by subgroups defined by parent and adolescent age, gender, race/ethnicity, income, and attendance of religious services. Full summary data appear in Appendix Table C-1. As stated previously, since our sample of parents was comprised of adults who were identified as the “most knowledgeable parent” (MKP) for a randomly-selected adolescent, it is important to note that these results are *not representative of the United States general population of parents of adolescents*. However, these results provide necessary context for understanding adolescent views as reported in subsequent sections. In order to emphasize this distinction, we use the term “MKP” rather than the term “parent” throughout the report when discussing findings based on responses to the Parent Interview.

We found evidence of broad support for abstinence messages, with the majority of MKPs in our sample opposing pre-marital sexual intercourse for their adolescents under any circumstances. These findings are generally consistent with those from previous opinion polls (Rector et al., 2004).

### **General Parent Attitudes on Sex and Abstinence**

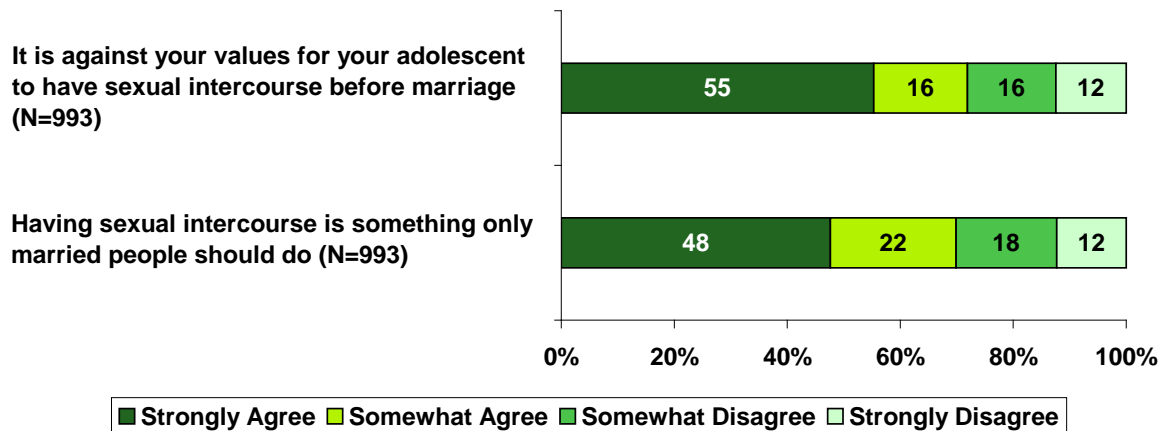
We assessed general parent views about sex and abstinence based on reported level of MKP agreement with two separate statements: “It is against your values for your [child/teenager] to have sexual intercourse before marriage,” and “Having sexual intercourse is something only married people should do.”

***MKPs opposed pre-marital sexual intercourse both in general and for their own adolescents.***

We found that MKPs opposed pre-marital sexual intercourse both in general and for their own adolescents. Approximately 70(±4) percent of MKPs in our sample agreed that having sexual intercourse is something only married people should do, with 48(±5) percent strongly agreeing and 22(±4) percent somewhat agreeing. Views were somewhat more restrictive when MKPs were asked about their own adolescents, with 71(±4) percent of MKPs strongly agreeing (55±4 percent) or somewhat agreeing (16±3 percent) that it is against their values for their child/teenager to have sexual intercourse before marriage. (Exhibit 3-1.)

**Exhibit 3-1.**

**General Parent Attitudes about Sex and Abstinence: Percent Agreement with Specific Views**



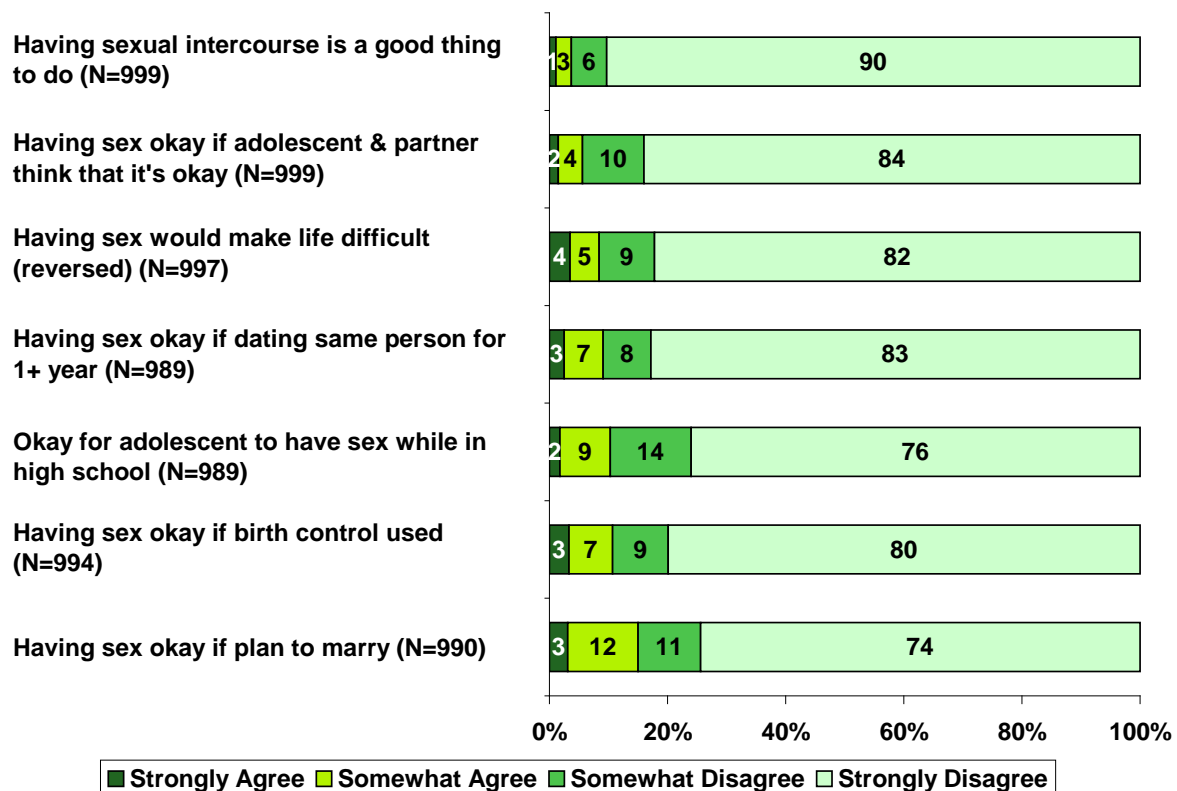
## Parent Attitudes about Permissible Sexual Behavior for Their Adolescents

***The majority of MKPs opposed sexual activity for their adolescents under any circumstances, but there exists a minority of MKPs for whom the specific context of hypothetical adolescent sexual activity influences the overall restrictiveness of views.***

We additionally measured MKPs' level of agreement with a series of seven statements about permissible sexual behavior for their own adolescents; Exhibit 3-2 summarizes MKP responses, ordered sequentially by overall percent agreement with each statement.

### Exhibit 3-2.

#### Parent Attitudes about Permissible Sexual Behavior for Their Adolescents: Percent Agreement with Specific Views



A strong majority of MKPs surveyed strongly or somewhat disagreed that it would be okay for their adolescents to engage in sexual intercourse under any of the six specific scenarios detailed in these statements, and strongly or somewhat agreed that having sexual intercourse would cause problems or make life difficult for their adolescents. Over half of MKPs surveyed ( $51 \pm 5$  percent) strongly disagreed (or strongly agreed, in the case of the “cause problems” measure, for which responses have been reversed in the chart above) with all seven of these statements, and the figure rises to  $69 (\pm 6)$  percent when MKPs who only somewhat disagreed with one or more statement are included.

However, there was some variation in levels of agreement across measures. While less than 4( $\pm$ 1) percent of MKPs agreed that having sexual intercourse is a good thing to do at their adolescent's age, 10( $\pm$ 3) percent agreed that it would be okay for their adolescent to have sex if he or she uses birth control, and 15( $\pm$ 3) percent agreed that it would be okay for their adolescent to have sexual intercourse at his or her age right now if he or she plans to marry the person. These results imply that, while most MKPs are opposed to their adolescent engaging in sexual intercourse under any circumstances, there exists a minority of MKPs for whom the context in which the sexual activity takes place influences overall restrictiveness of views.

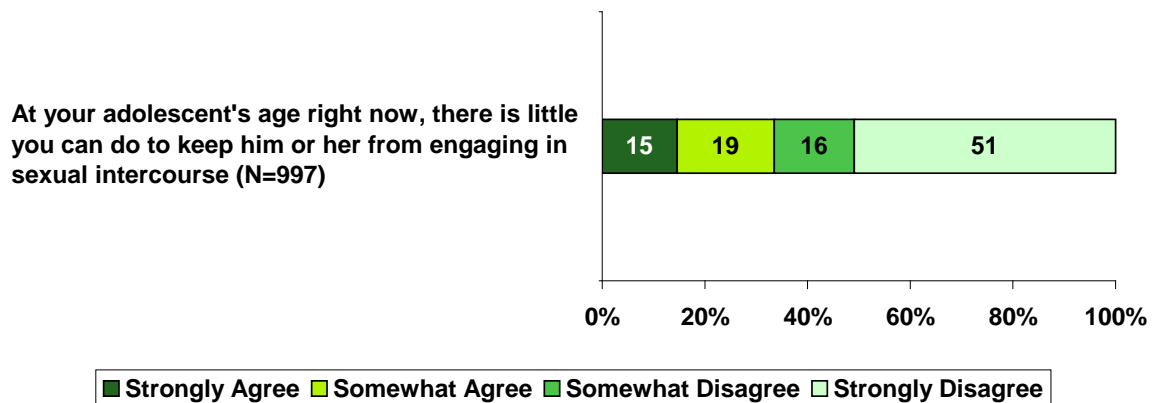
### Parent Self-Perceived Control over Adolescent Sexual Behavior

***Most MKPs expressed confidence that they could influence their adolescents' sexual behavior, with greater degrees of self-perceived parent control correlated with more conservative general attitudes about sex and abstinence.***

Finally, we assessed MKPs' self-perceived control over their adolescents' sexual behavior by asking them to report their level of agreement that, "At your adolescent's age right now, there is little you can do to keep them from engaging in sexual intercourse." (Exhibit 3-3.)

#### Exhibit 3-3.

#### Parent Self-Perceived Control over Adolescent Sexual Behavior: Percent Agreement with Specific Views



While most MKPs expressed confidence that they could influence their adolescents' sexual behavior, about a third of MKPs sampled either somewhat (19 $\pm$ 4 percent) or strongly (15 $\pm$ 3 percent) agreed that there was little they could do to prevent their adolescent from engaging in sexual intercourse.

Interestingly, greater degrees of self-perceived parent control were significantly correlated with more conservative general attitudes about sex and abstinence and more restrictive attitudes about adolescent sexual behavior (Table 3-1). This implies that MKPs more strongly opposed to their adolescents engaging in sexual intercourse were simultaneously more likely to feel they could do something to prevent this outcome.

**Table 3-1.****Correlation between Parent Self-Perceived Control over Adolescent Sexual Behavior and Other Parent Attitude Measures**

(all correlations statistically significant at 95% confidence level)

Parent Attitude	Correlation
<b>General Attitudes about Sex and Abstinence</b>	
It is against your values for your adolescent to have sexual intercourse before marriage (N=990)	0.14
Having sexual intercourse is something only married people should do (N=990)	0.17
<b>Attitudes about Permissible Adolescent Sexual Behavior</b>	
Having sexual intercourse is a good thing to do at your adolescent's age (N=996)	0.28
At your adolescent's age right now, it would be okay for him or her to have sexual intercourse as long as he/she and his/her partner think that it is okay (N=996)	0.37
At your adolescent's age right now, having sexual intercourse would create problems or would make life difficult - reversed (N=994)	0.26
At your adolescent's age right now, it would be okay for him or her to have sexual intercourse if he/she has been dating the same person for at least one year (N=986)	0.39
It would be okay for your adolescent to have sexual intercourse before he/she leaves high school (N=986)	0.20
At your adolescent's age right now, it would be okay for your adolescent to have sexual intercourse if he/she uses birth control (N=991)	0.39
At your adolescent's age right now, it would be okay for him or her to have sexual intercourse if he/she plans to marry the person (N=987)	0.36

**Parent Attitudes about Sources of Abstinence Messages**

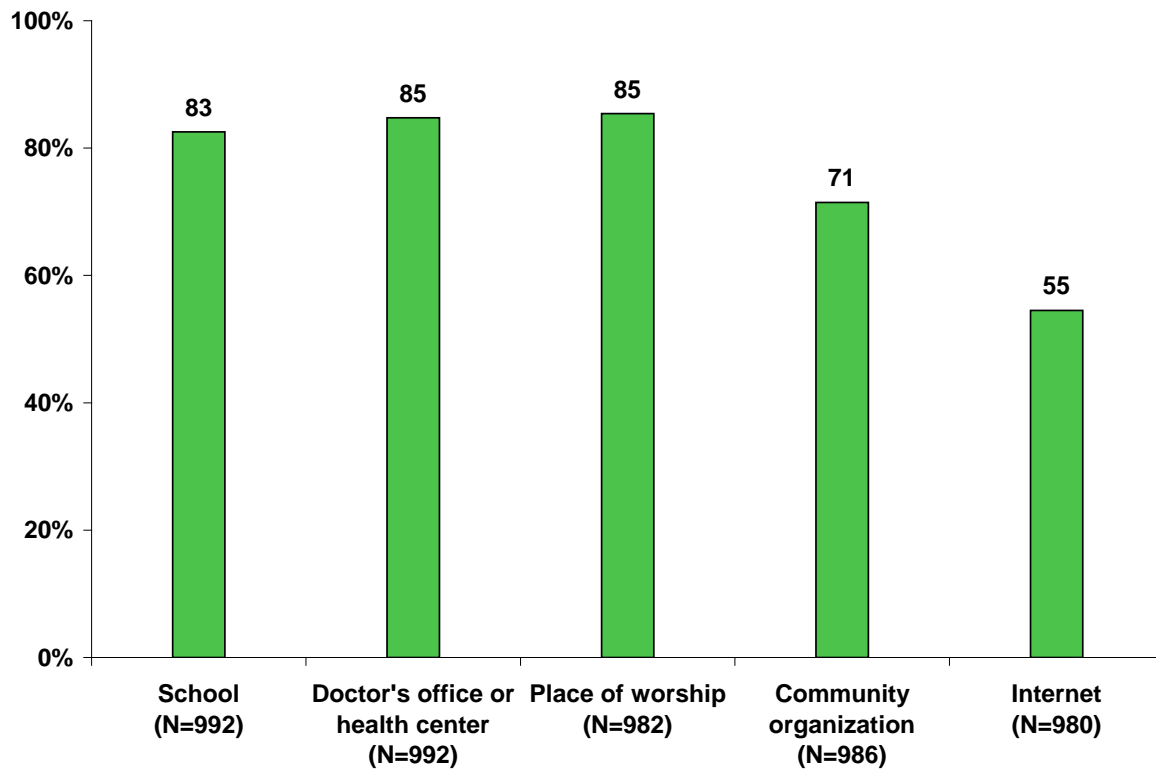
Adolescents may be exposed to abstinence messages in a variety of venues. We asked MKPs whether they favored or opposed their adolescent being told that he or she should not have sexual intercourse before marriage by each of the following potential sources: schools, doctor's offices or health centers, places of worship, community organizations, and the Internet.

***MKPs reported broad general support for abstinence messages delivered to adolescents in a variety of venues.***

In order of preference, MKPs favored abstinence messages delivered at a place of worship (85±3 percent), a doctor's office or health center (85±3 percent), school (83±3 percent), a community organization (71±4 percent), and the internet (55±4 percent). (Exhibit 3-4.) Interestingly, nearly half (47±5 percent) of MKPs surveyed favored their adolescent receiving abstinence messages from all five of these sources, indicating broad general support for abstinence messages delivered regardless of specific source. Only 7(±5) percent of MKPs opposed their adolescent receiving abstinence messages from any of these five sources.

**Exhibit 3-4.**

**Parent Attitudes about Abstinence Messages: Percent Favoring Adolescent Receipt of Abstinence Messages, by Source**



Despite this general support for abstinence messages delivered in multiple contexts, we additionally found evidence that MKPs favor adolescent receipt of information about sex within the home over receipt of that information from other potential sources. When asked to choose just one person they would prefer their adolescent to speak to about sex and sexual issues, 92( $\pm$ 3) percent designated a family member, with 77( $\pm$ 4) percent designating either the adolescent's mother or father, and 49( $\pm$ 5) percent specifically designating themselves. (Table 3-2).

There was some evidence that MKPs somewhat preferred that adolescents speak to someone of the same gender; 74( $\pm$ 8) percent of MKPs who designated the adolescent's father as the preferred information source were parents of male children, while 57( $\pm$ 6) percent of MKPs who designated the adolescent's mother were parents of female children.

**Table 3-2.**

**Parent Attitudes – Preferred Source of Information about Sex and Sexual Issues for Adolescents (N=990)**

	Percent	95% Confidence Interval	Standard Error
<b>Respondent or someone else?</b>			
Self	49.4%	44.9-54.0	2.3
Someone else	50.6%	46.0-55.1	2.3
<b>Relationship type</b>			
Family member	92.3%	89.8-94.8	1.3
Mother	47.6%	43.1-52.1	2.3
Father	29.4%	25.2-33.7	2.2
Grandparent	7.2%	4.3-10.0	1.5
Other adult relative	6.0%	3.7-8.4	1.2
Brother or sister	2.0%	1.2-2.8	0.4
Non-family member	7.5%	5.0-10.1	1.3
Doctor or nurse	2.4%	1.0-3.8	0.7
Minister, Priest, Rabbi	2.1%	0.9-3.4	0.6
Adult Friends	1.6%	0.1-3.2	0.8
Teacher	0.8%	0.2-1.4	0.3
Friends his/her own age	0.6%	0.0-1.4	0.4
Other	0.2%	0.0-0.4	0.1



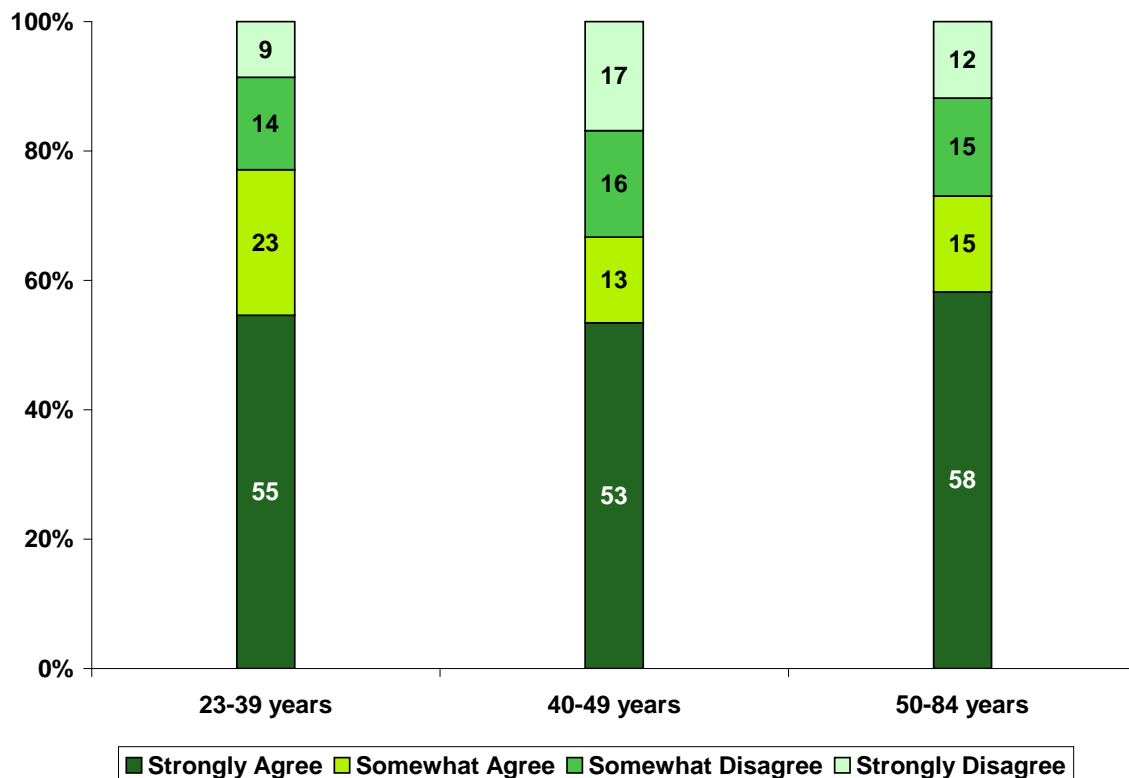
## Differences in Parent Attitudes by Parent and Adolescent Characteristics

We showed above that MKPs were largely in favor of abstinence for their adolescents, and opposed to pre-marital sex in general. However, there was significant variation in the degree of support for these views across subgroups of MKPs defined by gender, race/ethnicity, age, and other parent and adolescent characteristics. In this section, we provide a brief overview of key differences in parent attitudes about sex and abstinence across subgroups.

**Parent and Adolescent Age.** There was no clear trend in MKP attitudes about sex and abstinence by parent age. MKPs aged 40 to 49 years were the least likely to agree that it is against their values for their adolescent to have sexual intercourse before marriage ( $66\pm 6$  percent) and that having sexual intercourse is something only married people should do ( $69\pm 5$  percent). Both younger MKPs aged 23-39 and older MKPs aged 50-84 expressed more conservative views, with  $78(\pm 6)$  percent and  $73(\pm 7)$  percent, respectively, agreeing that it is against their values for their adolescent to have sexual intercourse before marriage (Exhibit 3-5), and  $73(\pm 8)$  percent and  $69(\pm 8)$  percent, respectively, agreeing that having sexual intercourse is something only married people should do.

### Exhibit 3-5.

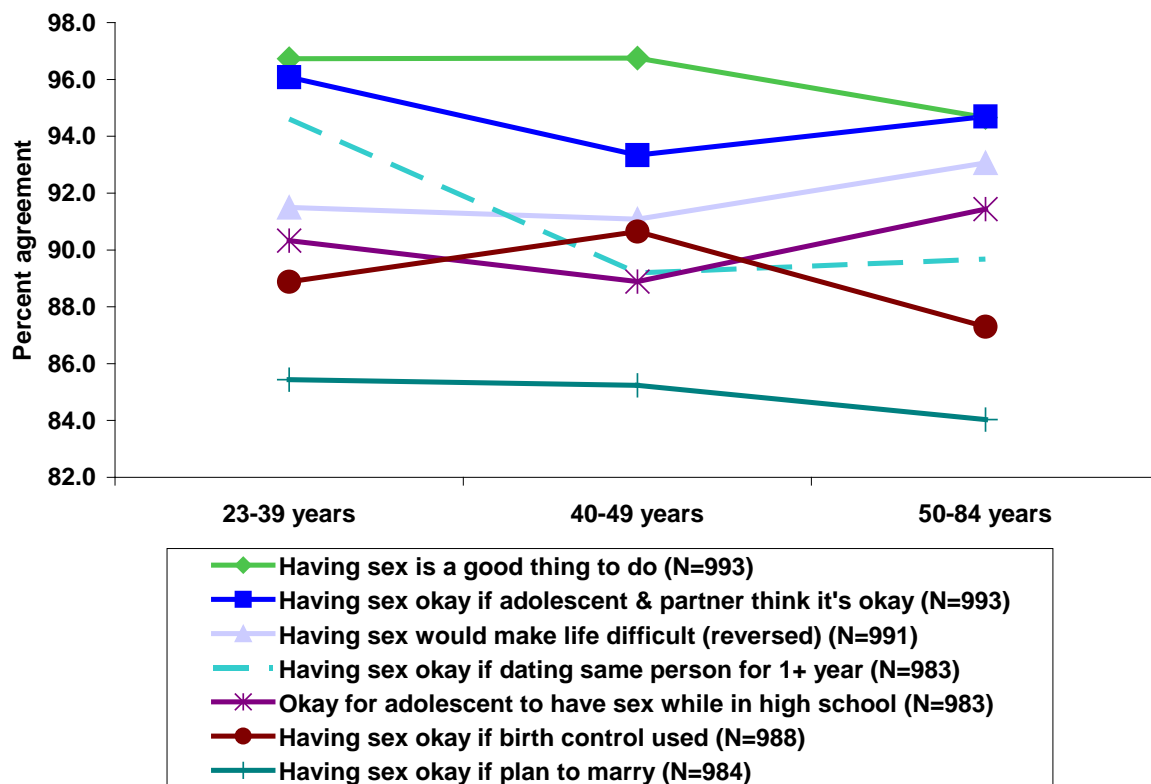
**Parental Views by Parent Age Group: Percent Parent Agreement That it is Against Their Values for Their Adolescent to Have Sexual Intercourse before Marriage (N=993)**



Trends by parent age in measures of parent attitudes about permissible sexual behavior for their adolescents were similarly mixed, as seen in Exhibit 3-6 and Table 3-3, as were trends in self-perceived parent control over adolescent behavior. For some measures, the percentage of MKPs agreeing with each statement rose and then fell by parent age group; for others, the percentage dropped and then rose. None of the ten parent attitude measures consistently rose or fell with parent age.

**Exhibit 3-6.**

**Parental Views by Parent Age Group: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**



**Table 3-3.**

**Parental Views by Parent Age Group: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**

	<b>23-39 Years</b>	<b>40-49 Years</b>	<b>50-84 Years</b>
Having sex is a good thing to do (N=993)	96.7% (93.9-99.6) SE=1.4	96.8% (94.9-98.6) SE=0.9	94.7% (90.5-98.8) SE=2.1
Having sex okay if adolescent & partner think it's okay (N=993)	96.1% (93.2-98.9) SE=1.4	93.3% (90.2-96.5) SE=1.6	94.8% (91.5-98.0) SE=1.7
Having sex would make life difficult (reversed) (N=991)	91.5% (87.3-95.7) SE=2.1	91.1% (87.7-94.5) SE=1.7	93.1% (89.2-96.9) SE=1.9
Having sex okay if dating same person for 1+ year (N=983)	94.6% (91.7-97.6) SE=1.5	89.2% (84.7-93.7) SE=2.3	89.7% (83.0-96.3) SE=3.4
Okay for adolescent to have sex while in high school (N=983)	90.3% (86.0-94.7) SE=2.2	88.9% (85.8-92.0) SE=1.6	91.4% (87.0-95.9) SE=2.3
Having sex okay if birth control used (N=988)	88.9% (83.9-93.9) SE=2.5	90.7% (87.3-94.0) SE=1.7	91.4% (80.6-94.1) SE=3.4
Having sex okay if plan to marry (N=984)	85.4% (80.0-90.9) SE=2.8	85.2% (80.7-89.8) SE=2.3	84.0% (76.7-91.4) SE=3.7

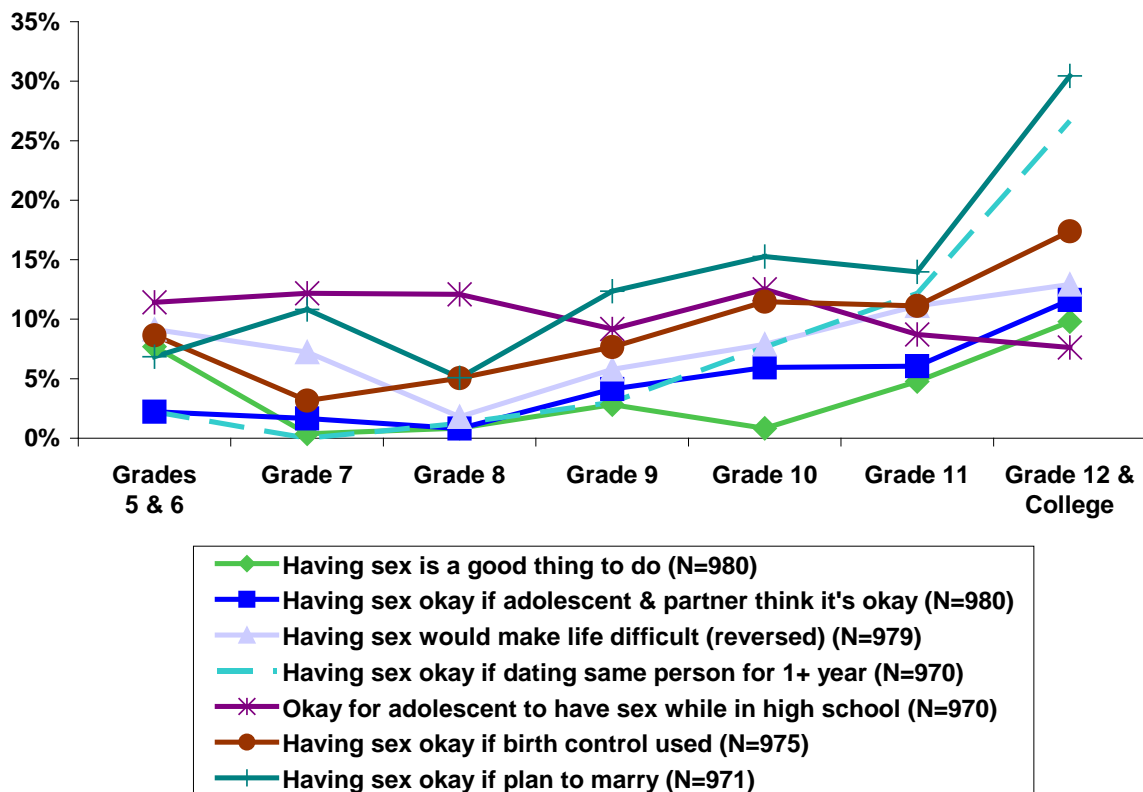
Notes: The values in parentheses represent the 95 percent confident interval. SE = Standard Error of Percent.

**Increasing permissiveness of MKP views about sex and abstinence for older adolescents obscures underlying trends by parent age.**

It is difficult to interpret these results by parent age because of the intrinsic relationship between the age of the MKP and the age of the adolescent. We would *a priori* expect views to be more restrictive for older MKPs, but more permissive for MKPs with older children. As Exhibit 3-7 and Table 3-4 indicates, there does indeed appear to be a general upward trend in permissiveness with adolescent grade. Since parent and adolescent age are positively correlated, this upward trend by adolescent age serves to obscure the underlying trend in attitudes by parent age.

**Exhibit 3-7.**

**Parental Views by Adolescent Grade: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**



**Table 3-4.****Parental Views by Adolescent Grade: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**

	<b>Grades 5 &amp; 6</b>	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12 &amp; College</b>
Having sex is a good thing to do (N=980)	7.7% (0.0-15.6) SE=4.0	0.4% (0.0-1.1) SE=0.4	0.8% (0.0-2.1) SE=0.6	2.8% (0.0-6.3) SE=1.7	0.8% (0.0-2.1) SE=0.7	4.8% (0.4-9.1) SE=2.2	9.8% (2.9-16.7) SE=3.5
Having sex okay if adolescent & partner think it's okay (N=980)	2.2% (0.0-6.6) SE=2.2	1.7% (0.0-4.9) SE=1.6	0.8% (0.0-2.4) SE=0.8	4.1% (0.0-8.7) SE=2.3	5.9% (1.7-10.2) SE=2.1	6.0% (1.6-10.5) SE=2.2	11.6% (5.3-17.9) SE=3.2
Having sex would make life difficult (reversed) (N=979)	9.1% (0.1-18.2) SE=4.5	7.2% (1.6-12.9) SE=2.9	1.8% (0.0-3.9) SE=1.1	5.8% (1.4-10.2) SE=2.2	7.9% (2.9-12.9) SE=2.5	11.1% (5.0-17.3) SE=3.1	12.9% (5.1-20.8) SE=4.0
Having sex okay if dating same person for 1+ year (N=970)	2.2% (0.0-6.6) SE=2.2	0.0% (0.0-0.0) SE=0.0	1.3% (0.0-3.1) SE=0.9	3.0% (0.0-6.6) SE=1.8	7.6% (2.2-13.1) SE=2.8	12.2% (6.4-18.0) SE=2.9	26.7% (13.8-39.6) SE=6.5
Okay for adolescent to have sex while in high school (N=970)	11.4% (2.4-20.4) SE=4.5	12.2% (5.8-18.5) SE=3.2	12.1% (6.2-17.9) SE=3.0	9.2% (3.7-14.7) SE=2.8	12.5% (5.3-19.8) SE=3.7	8.7% (3.9-13.5) SE=2.4	7.6% (3.1-12.1) SE=2.3
Having sex okay if birth control used (N=975)	8.7% (0.0-19.2) SE=5.3	3.2% (0.0-6.9) SE=1.9	5.0% (1.2-8.9) SE=1.9	7.7% (2.4-12.9) SE=2.7	11.5% (5.4-17.6) SE=3.1	11.1% (5.6-16.6) SE=2.8	17.4% (9.6-25.1) SE=3.9
Having sex okay if plan to marry (N=971)	6.8% (0.0-14.9) SE=4.0	10.8% (3.7-17.9) SE=3.6	5.1% (1.6-8.6) SE=1.8	12.4% (5.3-19.4) SE=3.6	15.3% (7.7-22.8) SE=3.8	14.0% (8.0-19.9) SE=3.0	30.4% (18.0-42.9) SE=6.3

Notes: The values in parentheses represent the 95 percent confident interval. SE = Standard Error of Percent.

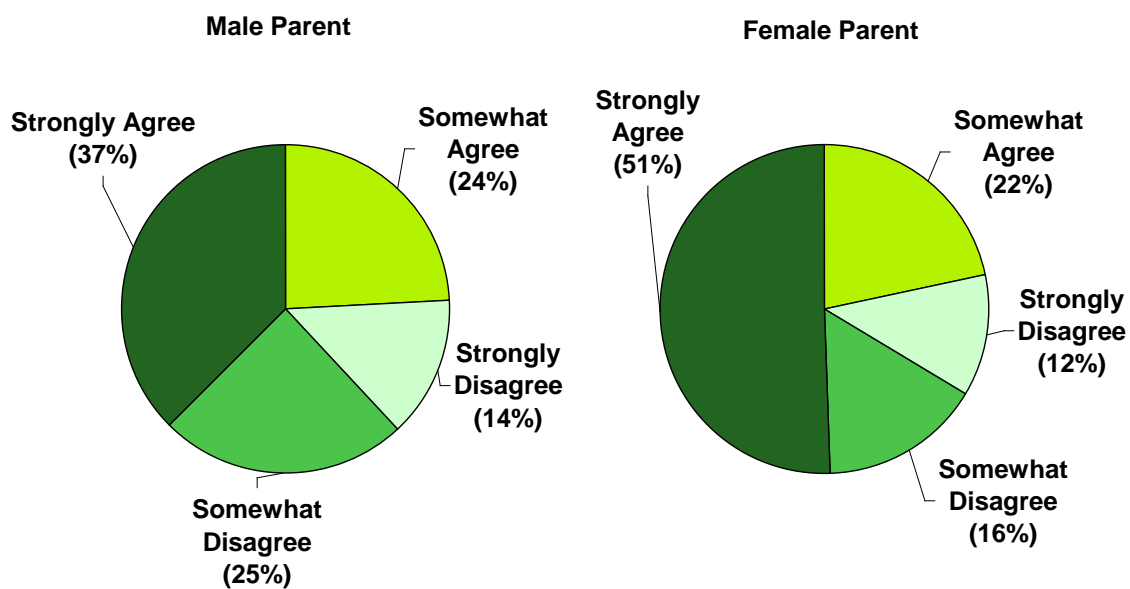
As will be seen in the multivariate analyses presented in the section to follow, the associations between parent age, adolescent age, and attitudes about sex and abstinence are clearer when both parent and adolescent age are included in our regression specifications, allowing us to determine their independent relationships.

**Male MKPs expressed more permissive views than female MKPs, and both male and female MKPs expressed more permissive views about male adolescents.**

**Parent and Adolescent Gender.** Female MKPs expressed relatively more conservative general views about sex and abstinence than males. For example, 73(±4) percent of female MKPs agreed that sexual intercourse is something that only married people should do, whereas only 61(±10) percent of male MKPs agreed with that statement (Exhibit 3-8). Gender differences were less apparent when MKPs were asked whether it was against their values for their own adolescents to have sexual intercourse before marriage; although female MKPs were more likely to strongly agree with this statement than male MKPs (56±5 percent versus 52(±10) percent), the majority of both male and female MKPs either strongly or somewhat agreed (71±9 percent and 71±5 percent).

**Exhibit 3-8.**

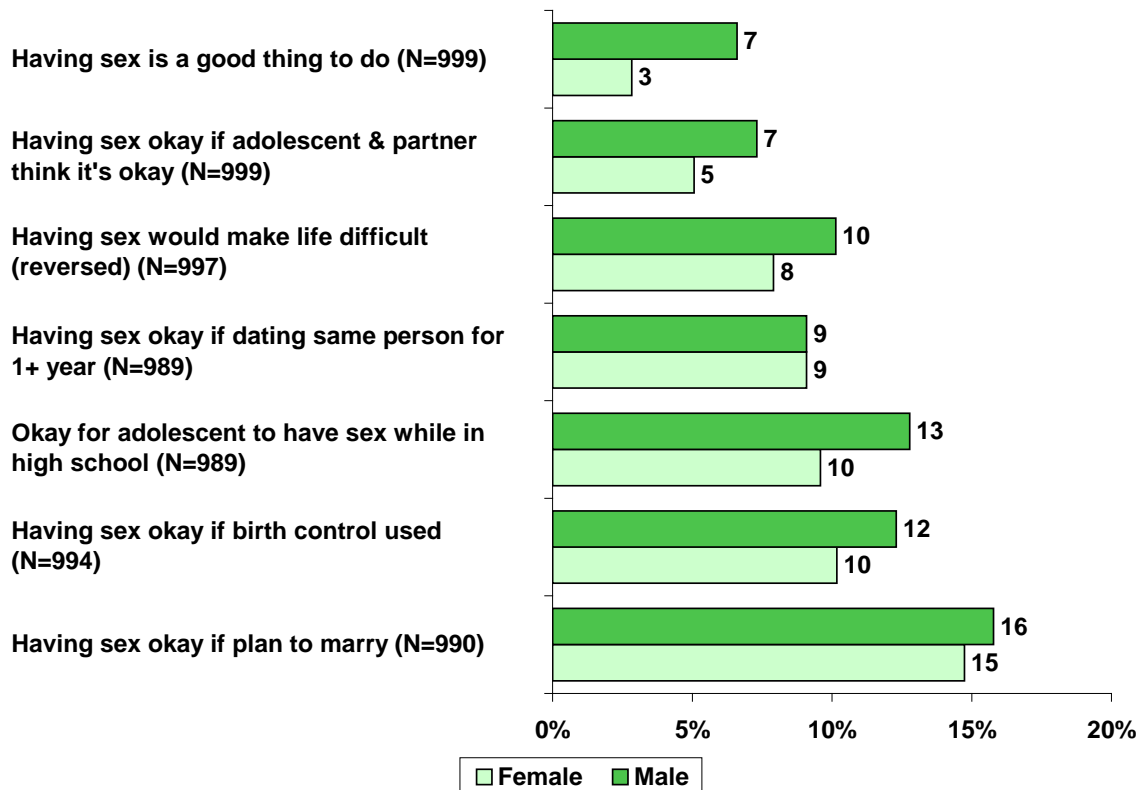
**Parental Views by Parent Gender: Percent Parent Agreement That Sexual Intercourse is Something That Only Married People Should Do (N=993)**



There were similar gender differences in restrictiveness of parent attitudes about permissible sexual behavior for their adolescents. Female MKPs were less likely than male MKPs to agree that, at their adolescent's age right now ( $3\pm1$  percent vs.  $7\pm4$  percent), it would be okay for him or her to have sexual intercourse if he or she plans to marry the person ( $15\pm1$  percent vs.  $16\pm6$  percent), if the adolescent and his or her partner think it's okay ( $5\pm2$  percent vs.  $7\pm4$  percent), if he or she uses birth control ( $10\pm3$  percent vs.  $12\pm6$  percent), or if he or she has been dating a prospective partner for a year or longer ( $9\pm3$  percent vs.  $9\pm5$  percent); more likely to agree that sex at their adolescent's current age would cause problems or make life difficult ( $8\pm3$  percent vs.  $10\pm6$  percent); and less likely to agree that it would be okay for their adolescent to have sexual intercourse before finishing high school ( $10\pm2$  percent vs.  $13\pm5$  percent) (Exhibit 3-9).

#### Exhibit 3-9.

#### Parental Views by Parent Gender: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents

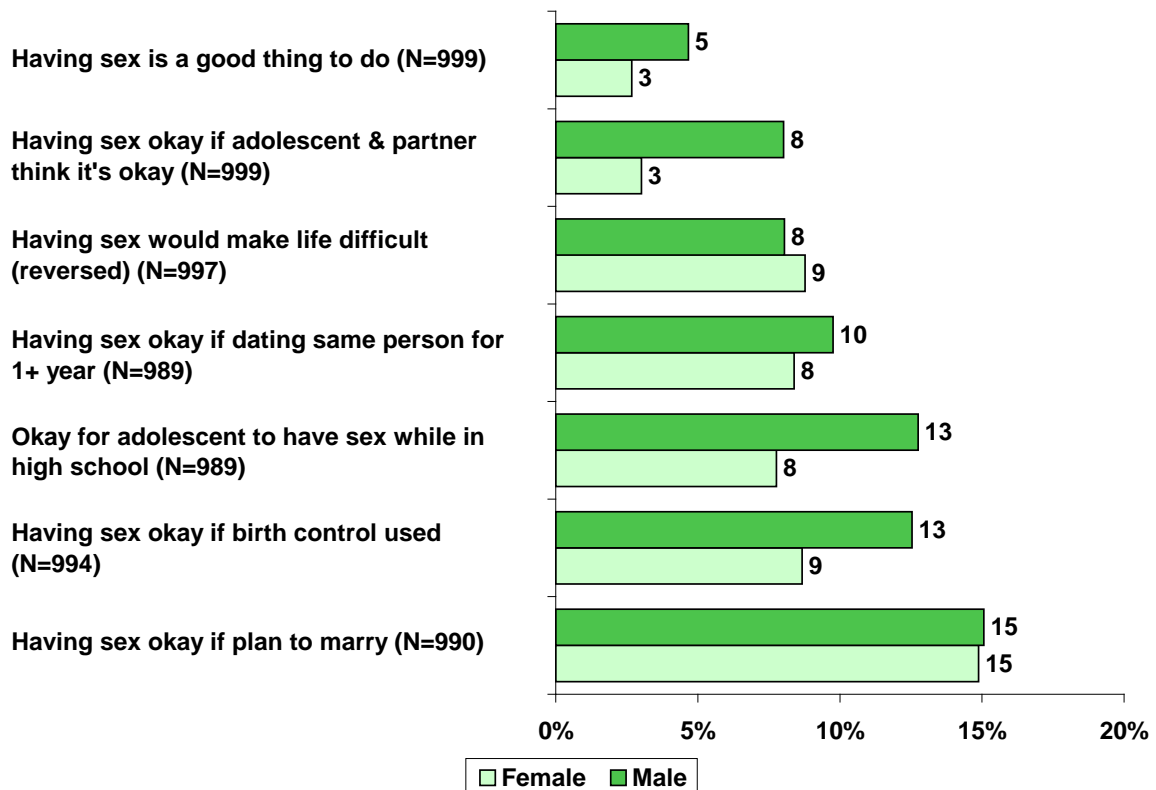


Female MKPs also expressed somewhat higher self-perceived levels of control over their adolescents' sexual behavior, with 68( $\pm$ 5) percent of female MKPs strongly or somewhat agreeing that there is little they can do to control their adolescents' sexual behavior, as compared to 63( $\pm$ 10) percent of male MKPs.

We additionally found evidence that parent attitudes were more permissive for male adolescents than for females (Exhibit 3-10), paralleling the observed patterns by MKP gender. In general, our results by both parent and adolescent gender appear to reflect less restrictive norms regarding sexual behavior among males than among females.

**Exhibit 3-10.**

**Parental Views by Adolescent Gender: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**



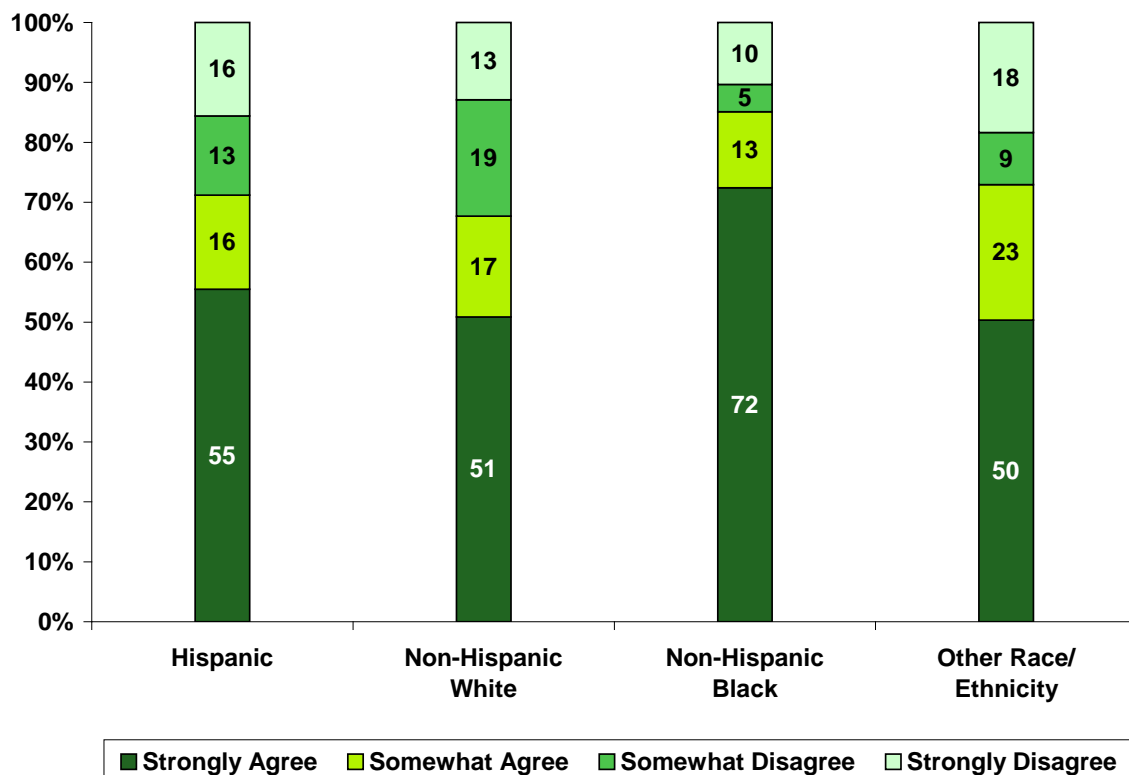


**Hispanic and non-Hispanic black MKPs expressed more conservative views about sex and abstinence in general, but relative permissiveness with regard to adolescent sexual behavior varied across racial and ethnic groups by specific context.**

**Parent Race/Ethnicity.** Support for general messages related to sex and abstinence additionally differed by MKP race/ethnicity (Exhibit 3-11). For example, 72(±12) percent of non-Hispanic blacks reported strongly agreeing that it is against their values for their child/teenager to have sexual intercourse before marriage, as compared to 50(±18) percent or less among other racial/ethnic groups; in fact, the percentage of non-Hispanic black MKPs strongly agreeing with this statement was higher than the combined percentage of MKPs somewhat *or* strongly agreeing with this statement among both Hispanics (71±5 percent) and non-Hispanic whites (68±3 percent). Non-Hispanic whites were least likely to agree with this statement, with just under a third of the sample somewhat disagreeing (19±3 percent) or strongly disagreeing (13±3 percent). Similarly, 62(±14) percent of non-Hispanic blacks strongly agreed that sexual intercourse is something only married people should do, as compared to 57(±14) percent of Hispanics, 42(±5) percent of non-Hispanic whites, and 46(±17) percent of MKPs of other race/ethnicities.

**Exhibit 3-11.**

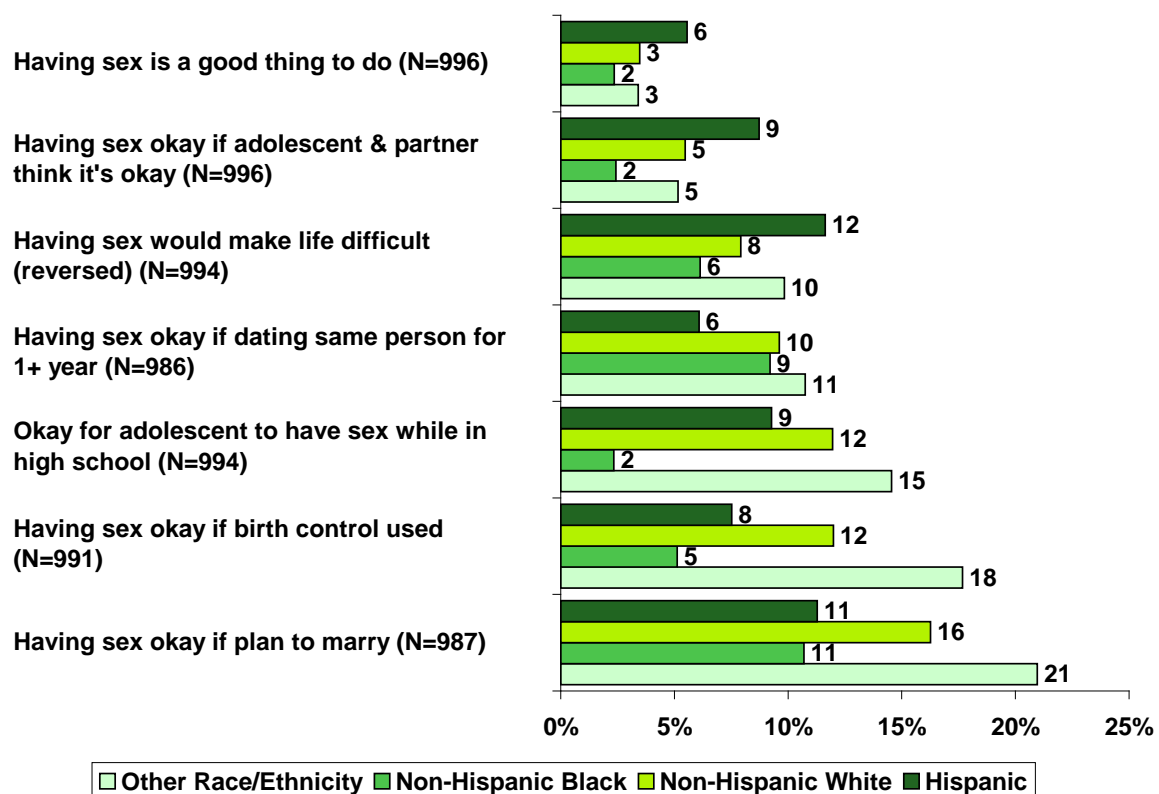
**Parent Views by Race/Ethnicity: Percent Parent Agreement That it is Against Values for Their Adolescent to Have Sexual Intercourse Before Marriage (N=990)**



We additionally found evidence that parent views on specific types of permissible sexual behavior for adolescents varied substantially among minority groups. Non-Hispanic black MKPs consistently expressed more restrictive views than MKPs of other race/ethnicities for each of the seven outcome measures in this category. However, as evident in Exhibit 3-12, there were two outcomes in particular for which non-Hispanic black MKP views were especially restrictive relative to views among other race/ethnicities: whether or not it would be okay for their adolescent to have sexual intercourse before finishing high school ( $2\pm 2$  percent), and whether or not it would be okay for their adolescent to have sexual intercourse if he or she uses birth control ( $5\pm 4$  percent).

**Exhibit 3-12.**

**Parental Views by Race/Ethnicity: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**



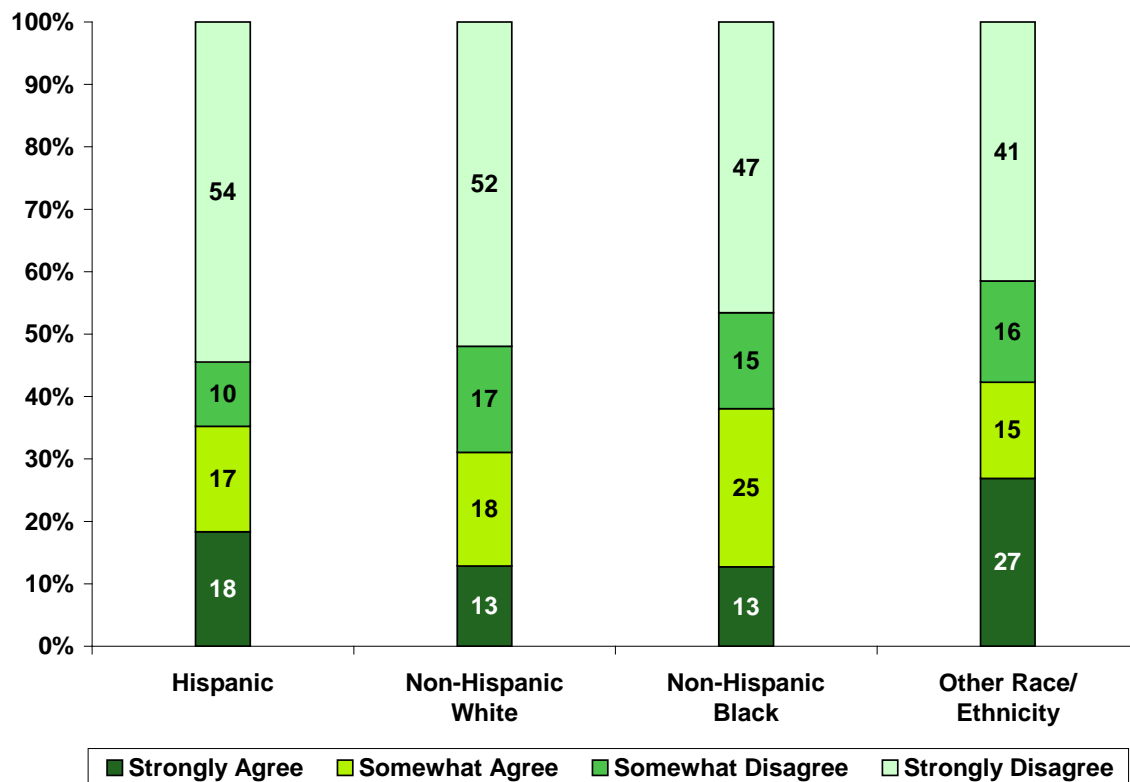
The relative permissiveness of Hispanic MKP views varied similarly across outcome measures. For the three statements with which MKPs as a whole were least likely to agree, views among Hispanic MKPs were less restrictive than those among MKPs of other race/ethnicities. In contrast, for the remaining four statements, views among Hispanic MKPs were *less* restrictive on average than among MKPs of other race/ethnicities (though still not quite as restrictive as views among non-Hispanic blacks, on average).

Taken as a whole, these results imply that there are considerable differences across racial and ethnic groups with regard to specific contexts in which sexual intercourse is considered relatively permissible for adolescents. From a policy perspective, this would seem to imply that targeted messages may resonate differently across these parent groups.

Finally, we consider self-perceived parent control over adolescent sexual behavior across racial/ethnic groups. Minority racial/ethnic groups were more likely than non-Hispanic whites to agree that there was little they could do to prevent their adolescent from having sexual intercourse ( $42 \pm 17$  percent and  $31 \pm 5$  percent, respectively) (Exhibit 3-13).

**Exhibit 3-13.**

**Parental Views by Race/Ethnicity: Percent Parent Agreement That There Is Little They Can Do to Keep Adolescent from Engaging in Sexual Intercourse**

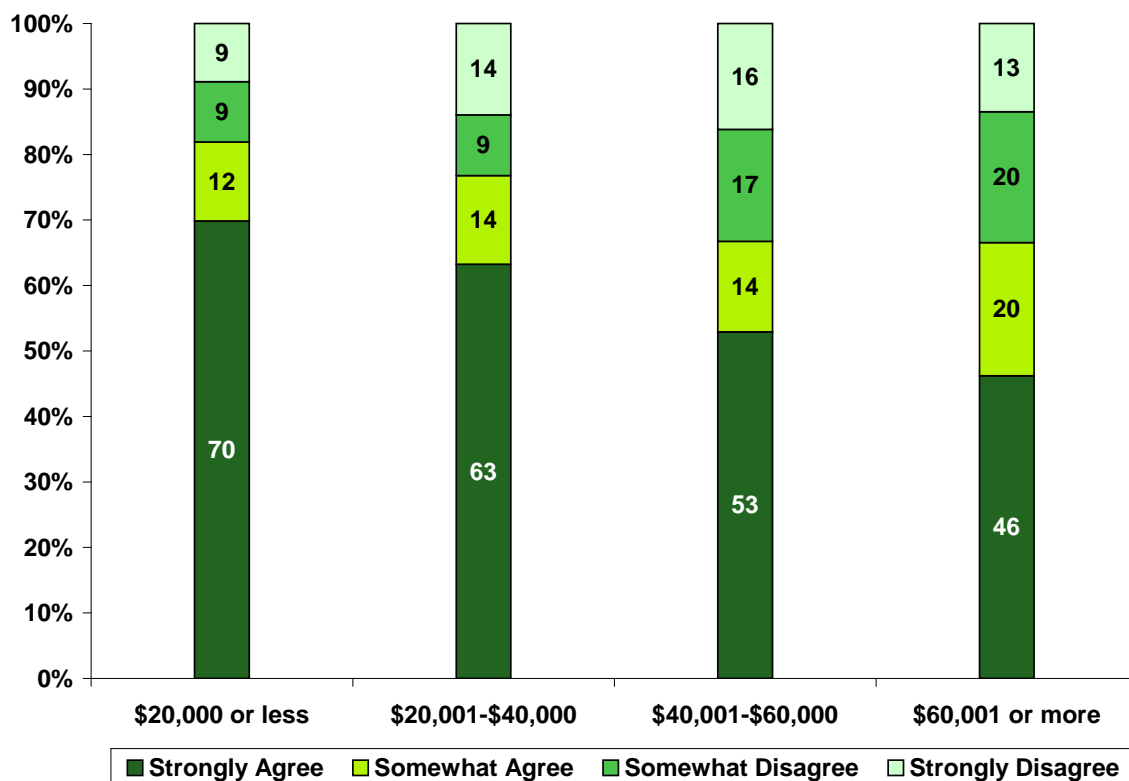


***MKPs from lower-income households expressed more conservative general views about sex and abstinence.***

**Household Income.** We found differences in parent attitudes by household income bracket (Exhibit 3-14), with MKPs in lower-income households reporting more conservative views. MKPs in households earning \$20,000 or less per year were most likely to strongly agree (70±13 percent) or somewhat agree (12±8 percent) that it is against their values for their adolescent to have sex before marriage. Percent agreement declined in each consecutively higher income bracket; among MKPs in households earning \$60,001 or more per year, only 46(±6) percent strongly agreed with this statement, with 20(±5) percent somewhat agreeing. Similarly, percent agreement that sexual intercourse is something only married people should do declined from 86(±7) percent in households earning \$20,000 or less to 60(±6) percent in households earning \$60,001 or more.

**Exhibit 3-14.**

**Parent Views by Household Income Bracket: Percent Parent Agreement That it is Against Their Values for Their Child/Teenager to Have Sexual Intercourse Before Marriage (N=957)**

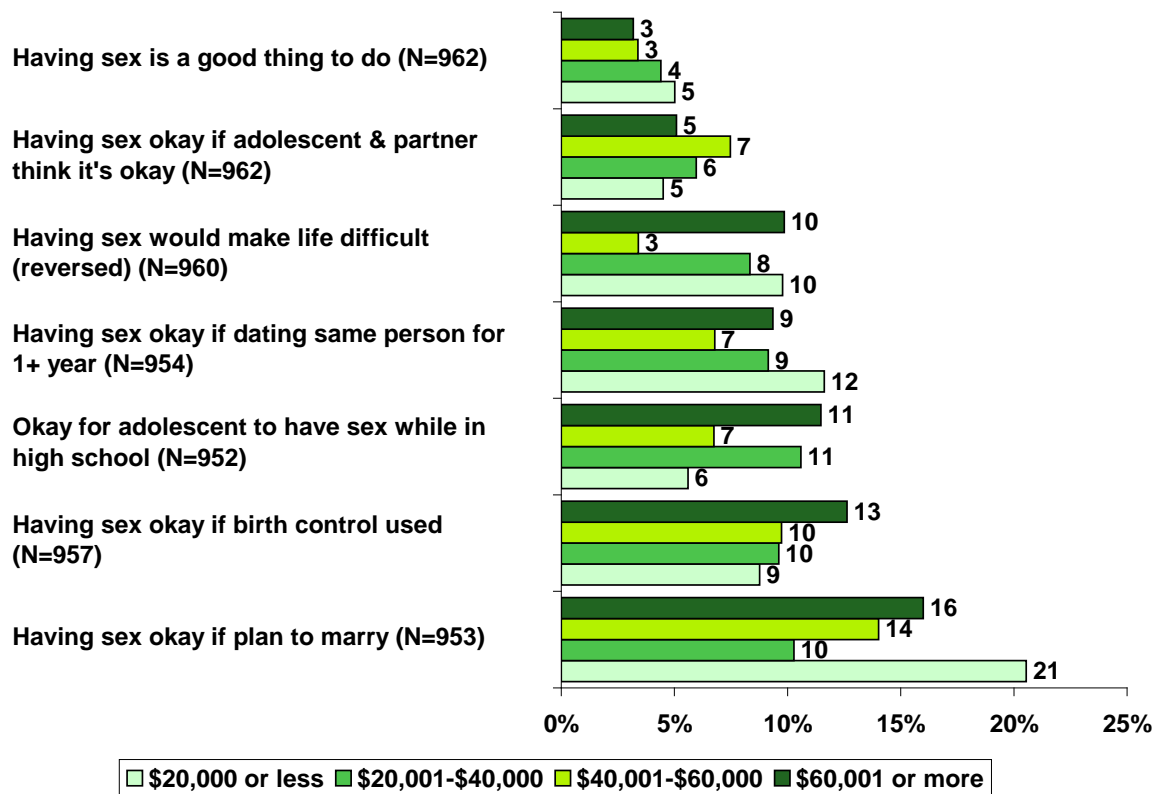


Patterns in parent views about permissible sexual behavior for their adolescent by income were less clear; as in the case of the racial/ethnic differences in attitudes discussed above, relative restrictiveness across income brackets appeared to vary significantly by the context of the specific measure (Exhibit 3-15). For example, MKPs from households earning \$20,000 or less per year were

most likely to agree that it would be okay for their adolescents to have sexual intercourse at their current age if they planned to marry their perspective partner (21±13 percent), as compared to 14(±7) percent of MKPs in higher income brackets. However, MKPs in this income bracket were simultaneously the least likely to agree that it would be okay for their adolescent to have sexual intercourse before finishing high school (6±5 percent, versus 10±5 percent agreement among MKPs in higher income brackets), if he or she uses birth control (9±5 percent versus 11±4 percent), or if he or she and his or her prospective partner think it is okay (5±5 percent versus 7±3 percent).

**Exhibit 3-15.**

**Parent Views by Household Income Bracket: Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**



These findings once again underscore the notion that it is difficult to make generalizations about overall restrictiveness or permissiveness of parent attitudes about sex and abstinence across groups. Differences in parent approval or disapproval of adolescent sexual behavior may rely intrinsically on the specific context of that sexual activity.

Furthermore, in the case of income, it is difficult in these descriptive analyses by subgroup to disentangle the effects of income status from the influence of other associated markers of socioeconomic status. Lower-income households in our sample are disproportionately made up of racial/ethnic minorities, individuals without college degrees, and single parent families; each of these factors may be independently associated with differences in parent views about sex and abstinence.

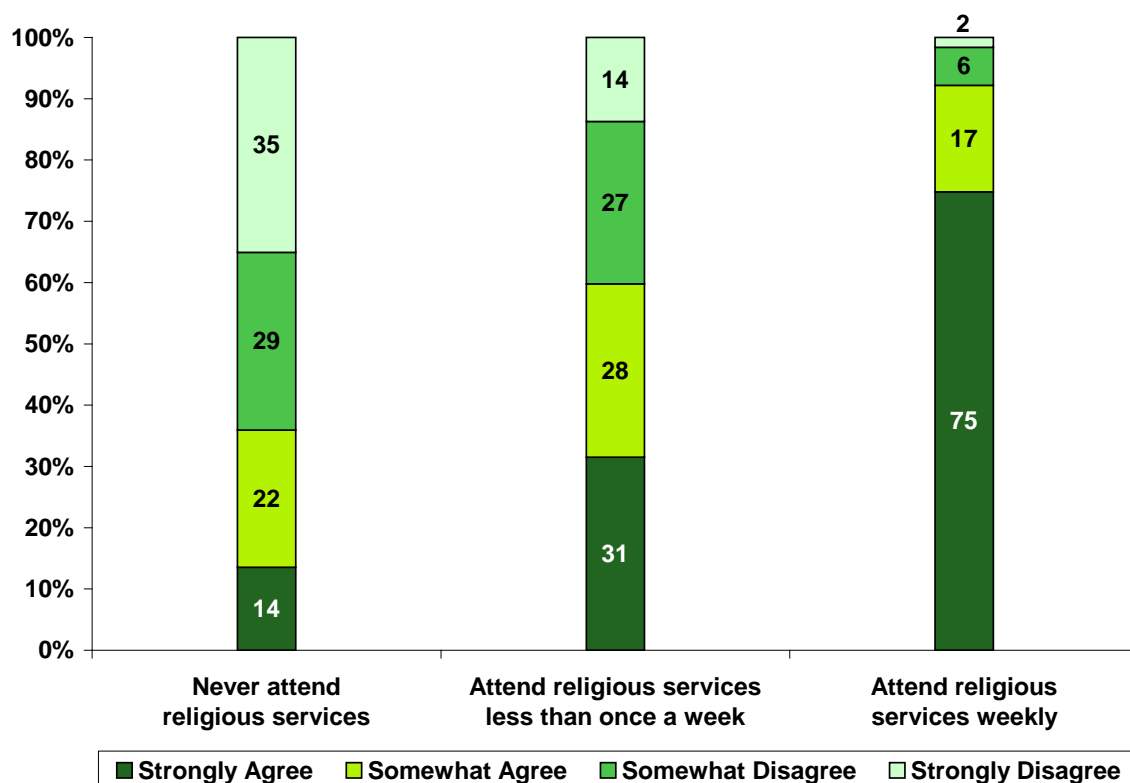
The multivariate analyses presented in the next section allow us to more explicitly examine the influence of income on parent attitudes, adjusting for the effects of these other factors.

***MKPs who attended religious services more regularly expressed strongly more conservative general views about sex and abstinence, more restrictive views about adolescent sexual behavior, and greater self-perceived control over adolescent sexual activity.***

**Religious Service Attendance.** We found prominent differences in parent views associated with frequency of religious service attendance. Three quarters of MKPs who attend religious services weekly strongly agreed that sexual intercourse is something that only married people should do (75±6 percent), as compared to only 14(±7) percent of MKPs who never attend religious services. At the other end of the scale, while less than 2(±1) percent of MKPs who attend religious services weekly strongly *disagreed* with this statement, over 35(±8) percent of MKPs who never attend religious services strongly disagreed (Exhibit 3-16). Patterns were similar by religious service attendance for MKP levels of agreement that it is against their values for their adolescent to have sexual intercourse before marriage.

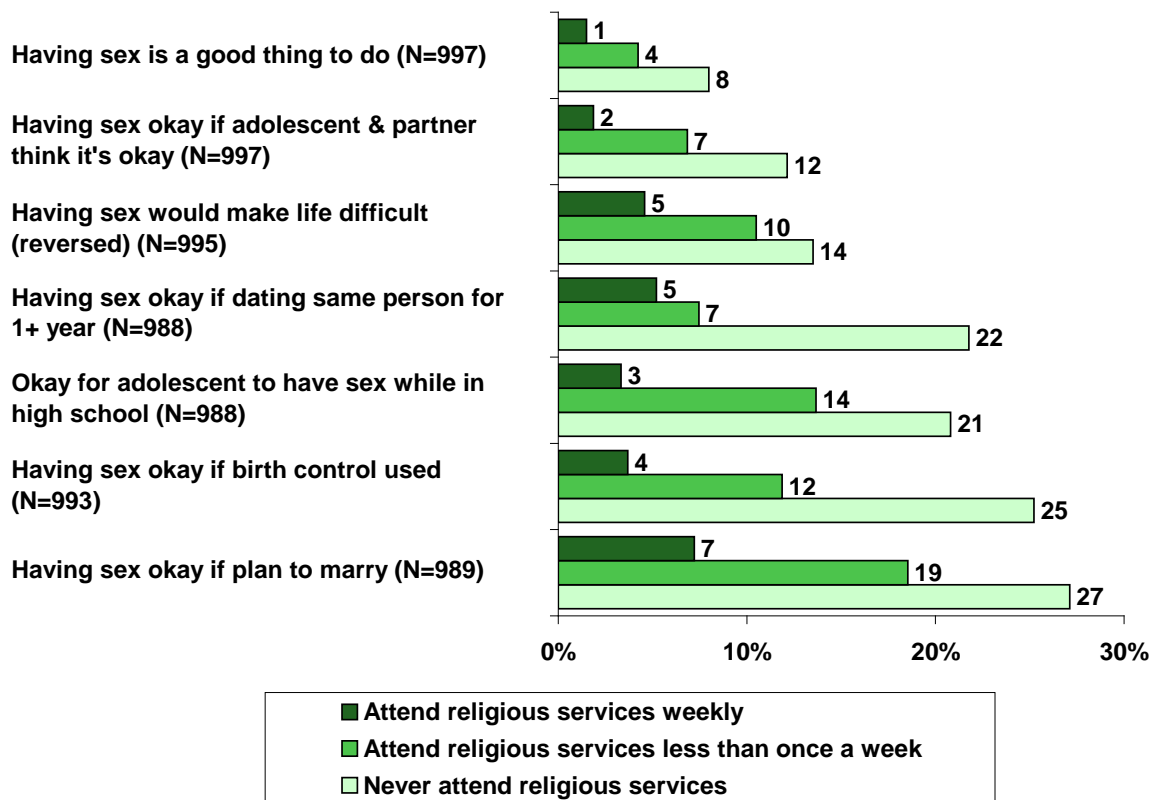
**Exhibit 3-16.**

**Parental Views by Parent Religious Service Attendance: Percent Parent Agreement That Sexual Intercourse is Something That Only Married People Should Do (N=991)**



Views among MKPs who more regularly attend religious services were also consistently more restrictive with regard to permissible sexual behavior for adolescents (Exhibit 3-17). Unlike views by parent race/ethnicity or household income bracket, there was very little evidence that differences in attitudes about sex and abstinence varied across subgroups of MKPs defined by frequency of religious service attendance by the specific context of adolescent sexual activities. MKP disapproval of adolescent sexual activity was greater across the board among those regularly attending religious services.

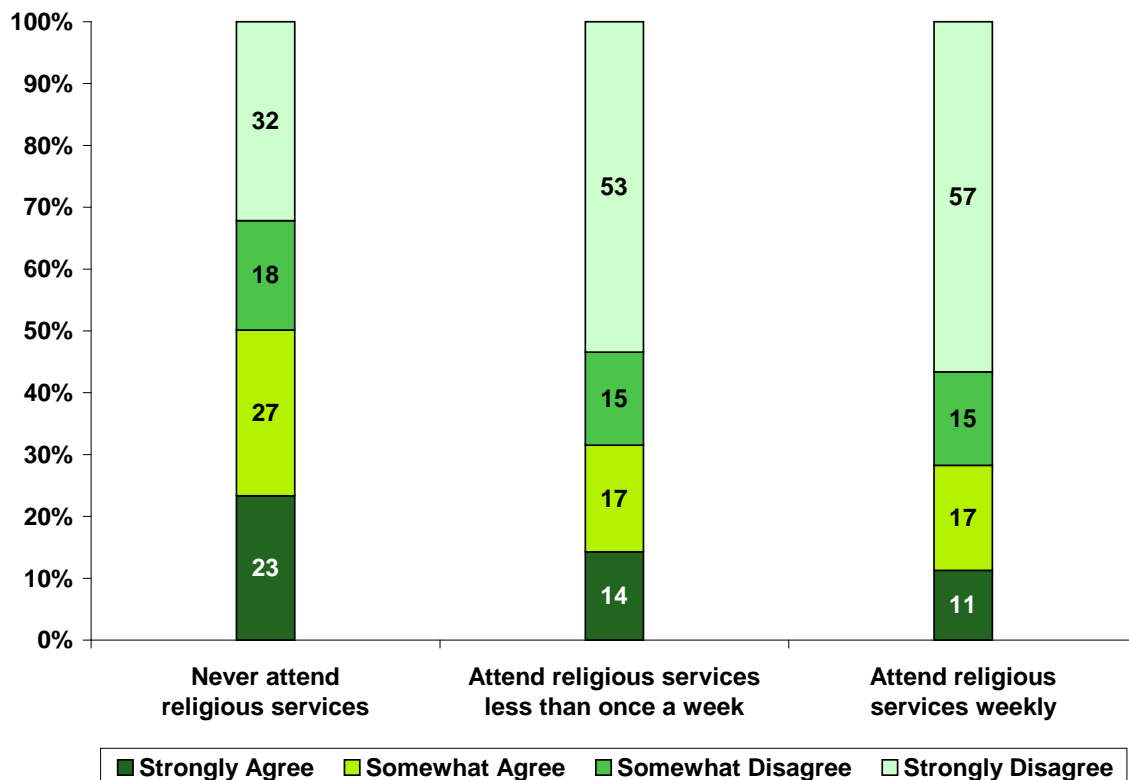
**Exhibit 3-17.**  
**Percent of Parents Agreeing with Specific Views about Permissible Sexual Behavior for Their Adolescents**



Finally, MKPs regularly attending religious services reported higher self-perceived control over adolescent sexual behavior (Exhibit 3-18). Seventy-two( $\pm 7$ ) percent of MKPs who attended religious services at least weekly somewhat or strongly disagreed that there was little they could do to keep their adolescent from engaging in sexual intercourse, as compared to 50( $\pm 10$ ) percent of MKPs who never attended religious services.

**Exhibit 3-18.**

**Parental Views by Race/Ethnicity: Percent Parent Agreement That There Is Little They Can Do to Keep Adolescent from Engaging in Sexual Intercourse**



**3.1.2. Adolescent Attitudes about Sex and Abstinence**

In this section, we present basic descriptive analyses of adolescent attitudes about sex and abstinence, including a discussion of differences in attitudes by subgroups defined by adolescent age, gender, race/ethnicity, income, and attendance of religious services, and a comparison to MKP views as described in the previous section. Appendix Table C-2 provides summary descriptive information on adolescent attitudes about sexual intercourse and abstinence. These results are representative of the United States population of adolescents aged 12 to 18.



## General Adolescent Attitudes on Sex and Abstinence

We assessed general adolescent views about sex and abstinence based on reported level of agreement with two separate statements: “It is against your values for you to have sexual intercourse before marriage,” and “Having sexual intercourse is something only married people should do.”

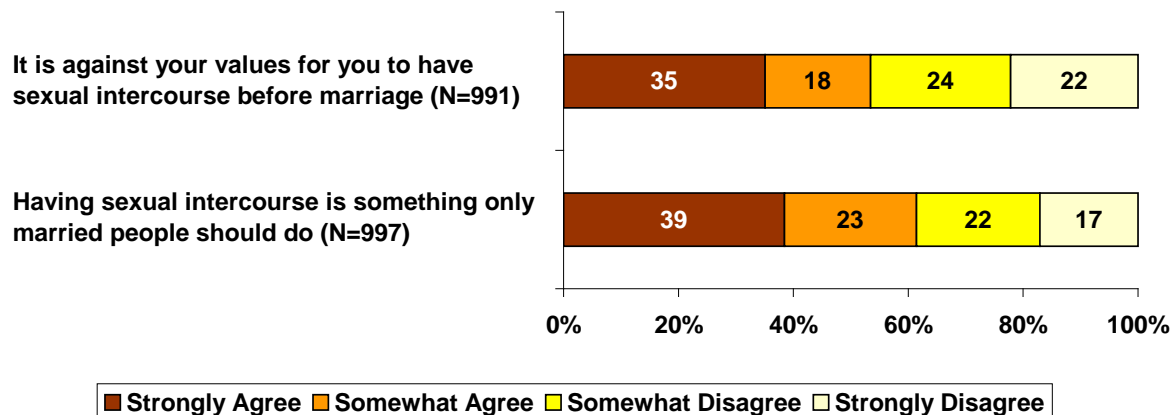
***Adolescents opposed pre-marital sexual intercourse both in general and for themselves, but not to the same extent as their MKPs.***

Since by design, these measures are parallel in structure those reported above for general parent attitudes, it is straightforward to directly compare MKP and adolescent responses. While the majority of adolescents surveyed oppose pre-marital sex in general and for themselves, on average adolescents expressed less conservative general views about sex and abstinence than their MKPs. Sixty-two(±4) percent of adolescents somewhat or strongly agreed that engaging in sexual intercourse is something only married people should do, as compared to 70(±4) percent of MKPs.

Differences between MKP and adolescent responses were somewhat larger when the question was framed in terms of the adolescent’s own sexual behavior: only 53(±4) percent of adolescents somewhat or strongly agreed that it was against their values to have sexual intercourse before marriage, as compared to 71(±4) percent of MKPs who somewhat or strongly agreed that it was against their values for their adolescents to have sexual intercourse before marriage (Exhibit 3-19).

### Exhibit 3-19.

#### General Adolescent Attitudes about Sex and Abstinence: Percent Agreement with Specific Views

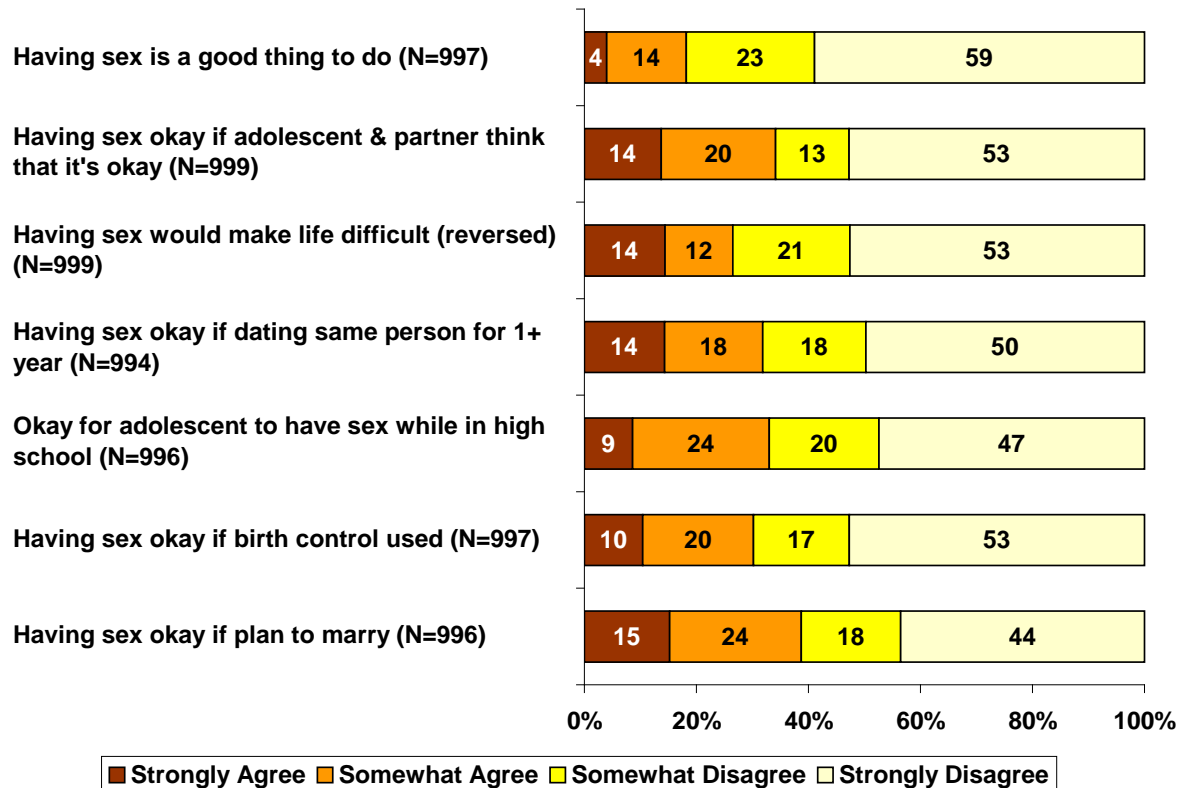


## Adolescent Attitudes about Permissible Sexual Behavior

We additionally asked adolescents to provide their views on what types of sexual behavior, if any, they considered to be permissible for themselves. Exhibit 3-20 summarizes adolescent responses to these questions.

**Exhibit 3-20.**

### Adolescent Attitudes about Permissible Sexual Behavior: Percent Agreement with Specific Views



Across these seven measures, adolescents were least likely to agree that having sexual intercourse is a good thing to do at their age (18±4 percent). The second-most restrictive set of adolescent responses was for the reversed “create problems” measure; 26(±4) percent of adolescents disagreed that having sexual intercourse would create problems or make life difficult at their current age. Adolescents expressed relatively more permissive views when asked about specific contexts in which engaging in sexual intercourse would be permissible, with approximately a third of adolescents agreeing that it would be okay for them to engage in sexual intercourse if they use birth control (30±4 percent), if they have been dating the same person for over a year (32±4 percent), before finishing high school (33±4 percent), or if their partner and themselves feel it would be okay (34±4 percent), and almost 40 percent agreeing that it would be okay to have sexual intercourse before marriage if you have plans to marry your prospective partner (39±4 percent).

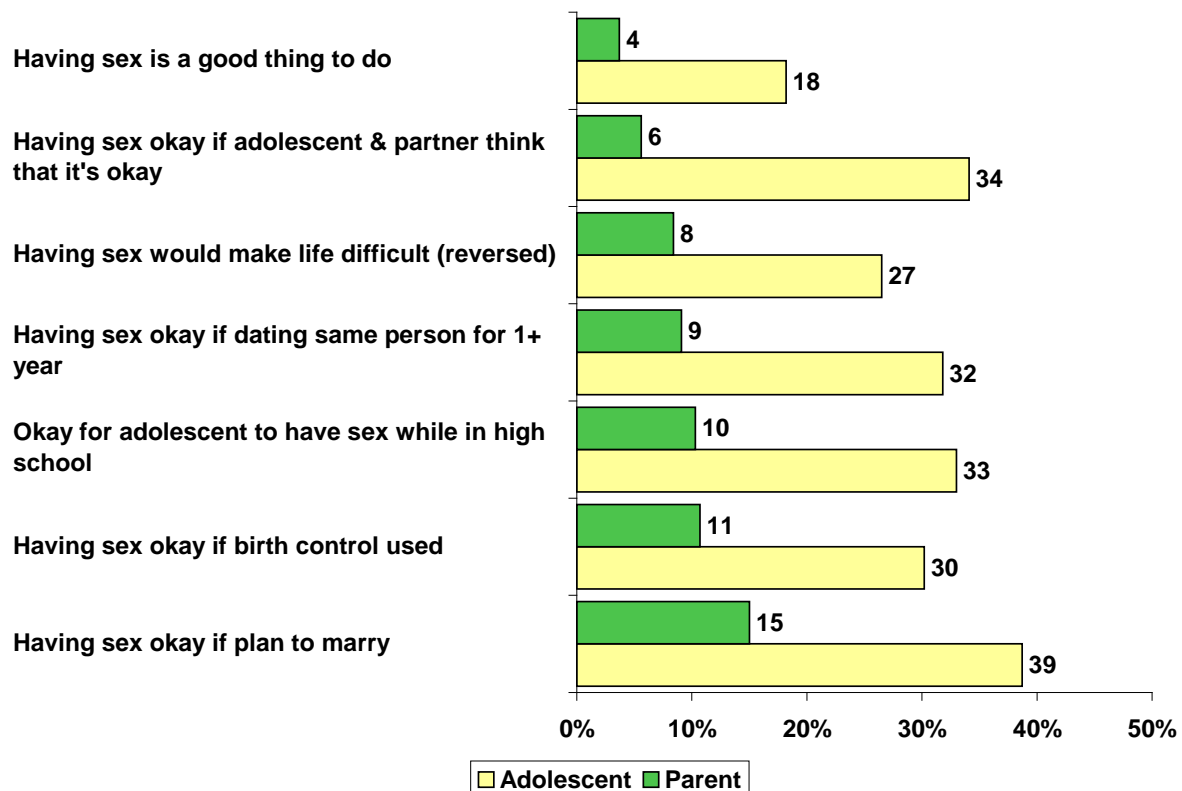
**Adolescents expressed relatively more permissive attitudes about their own sexual behavior than about adolescent sexual activity in general.**

This pattern of responses was similar to those measuring general attitudes about sex and abstinence discussed above: adolescents report relatively more permissive attitudes for measures asking specifically about their own sexual behavior than they do for measures stating the questions in more general terms.

Exhibit 3-21 displays a comparison of MKP and adolescent views on permissible adolescent sexual behavior. It is clear based on these results that adolescents and their MKPs differ not only in the overall permissiveness of their views, but in their implicit “ranking” of the permissibility of specific sexual behaviors. For example, while both MKPs and adolescents were most likely to agree that it would be okay for the adolescent to engage in sexual intercourse if he or she plans to marry his or her partner, ( $15\pm 2$  percent and  $39\pm 4$  percent, for MKPs and adolescents, respectively), the statement with which adolescents were next most likely to agree (“It would be okay for the adolescent to have sexual intercourse as long as adolescent and his or her partner think that it is okay”) was actually the statement agreed with second *least* by MKPs ( $6\pm 2$  percent and  $34\pm 4$  percent, for MKPs and adolescents, respectively).

**Exhibit 3-21.**

**Comparison of Parent and Adolescent Attitudes about Permissible Sexual Behavior: Percent Agreeing with Specific Views**



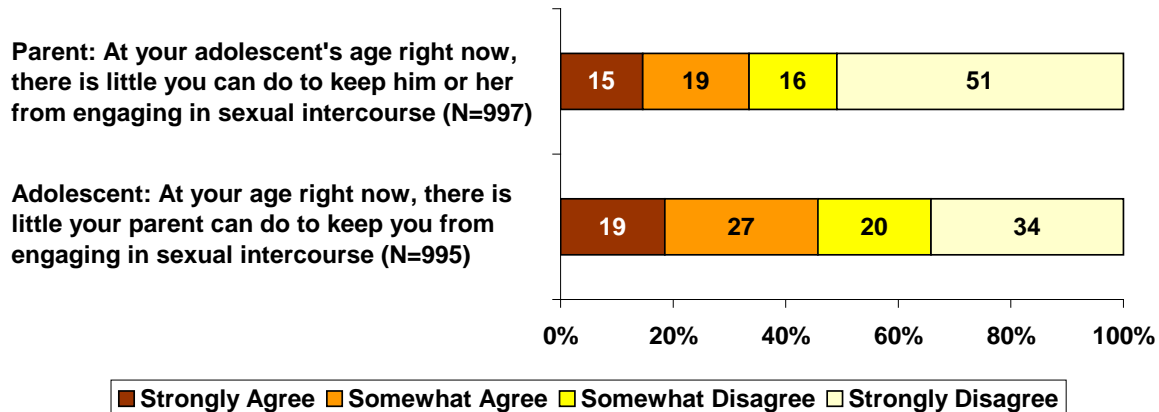
Adolescent N varies from 994 to 999; Parent N varies from 989 to 999

## Adolescent Perceptions of Parental Control over Their Sexual Behavior

Adolescents were more likely than MKPs to agree that there was little that parents could do to prevent them from engaging in sexual intercourse. Forty-six( $\pm 5$ ) percent of adolescents somewhat or strongly agreed with this statement, as compared to just over a third of MKPs ( $34\pm 4$  percent) (Exhibit 3-22).

### Exhibit 3-22.

#### Comparison of Parent and Adolescent Perceptions of Parental Control over Adolescent Sexual Behavior: Percent Agreement with Specific Views



## Adolescent Exposure to Information about Sex and Abstinence in a Class or Program

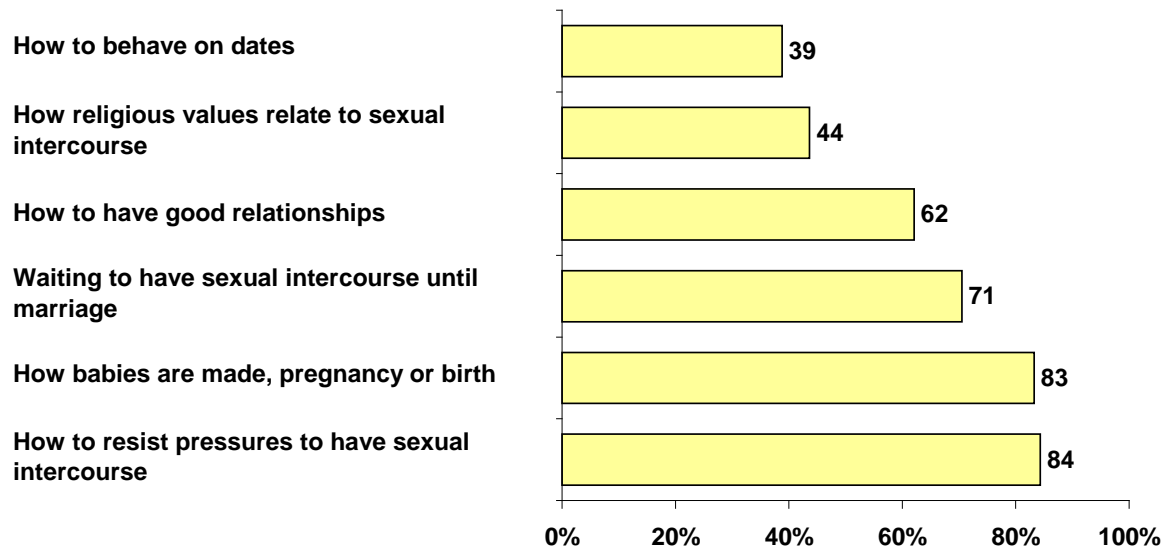
Fifty-nine percent ( $\pm 4$ ) of MKPs reported that their adolescent had participated in a class, program, or event in the past year that taught about waiting to have sexual intercourse until marriage. Note that since we did not ask MKPs to tell us whether this was the primary or exclusive focus, we cannot ascertain the context in which these programs delivered this message. A positive response could indicate that the adolescent had received this information in the context of an abstinence education class or program, a comprehensive sex education class or program, a community or church event, or any other class, program, or event in which the adolescent participated. Readers should therefore carefully consider the wording of each question when interpreting results based on these measures.

***Nearly all adolescents in our sample reported learning about at least one specific topic related to sex and abstinence in a class or program.***

In order to get a better sense of the types of specific topics and messages about sex, abstinence, and relationships to which adolescents were being exposed, we asked them to report on whether or not a series of particular topics had been covered in a class or program in which they had participated, and, if so, where that formal class or program took place. In all,  $94(\pm 2)$  percent of adolescents reported that they had previously learned about at least one of the following topics in a class or program: how to resist pressures to have sexual intercourse ( $84\pm 4$  percent); the basics of how babies are made, pregnancy, or birth ( $83\pm 3$  percent); waiting to have sexual intercourse until marriage ( $71\pm 4$  percent); how to have good relationships ( $62\pm 4$  percent); how religious values relate to sexual intercourse ( $44\pm 4$  percent); and how to behave on dates ( $39\pm 5$  percent). (Exhibit 3-23)

**Exhibit 3-23.**

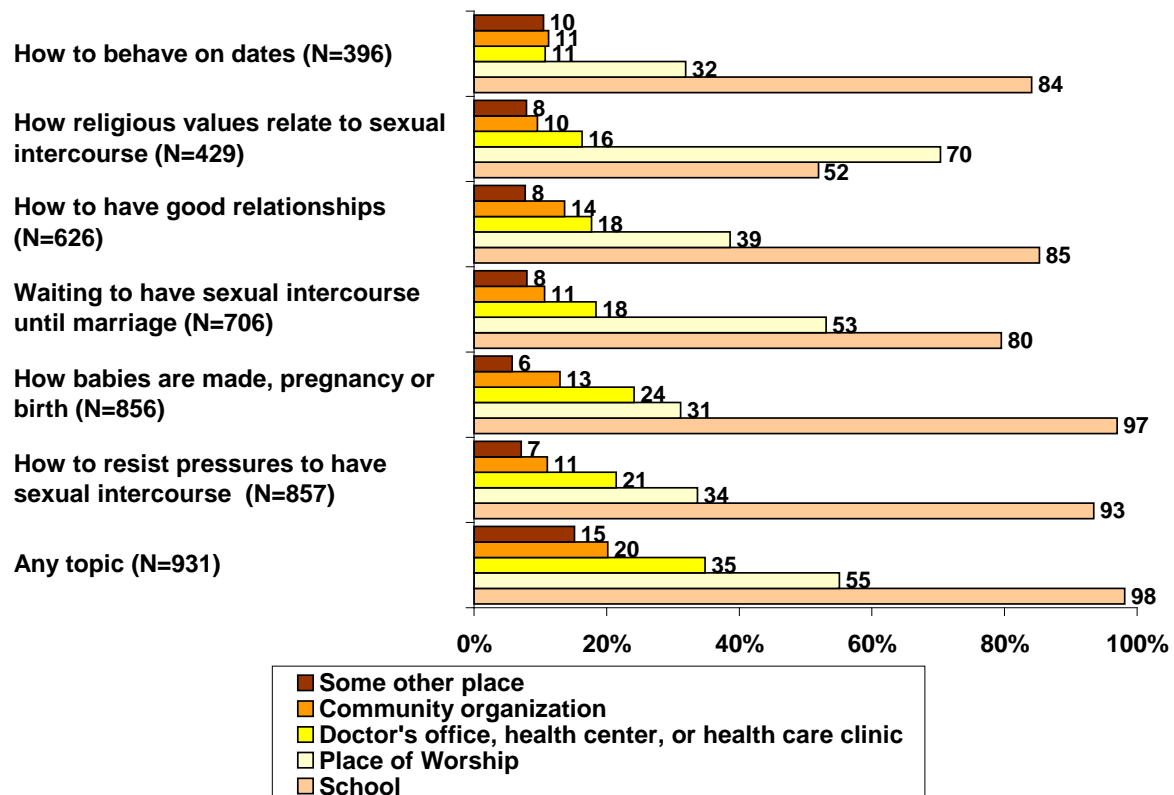
**Adolescent Exposure to Information about Sex and Abstinence: Percent Reporting that They Had Learned about Specific Topics in a Class or Program (N=990)**



Of the 94(±2) percent of adolescents who reported that they had learned about at least one of these topics in a class or program, over 98(±1) percent reported that this class or program had taken place at school. Fifty-five(±5) percent reported they had learned about one of these topics in church, 35(±4) percent at a doctor's office or health clinic, 20(±4) percent at a community organization, and 15(±3) percent from some other source. (Note that these categories are not mutually exclusive, since an adolescent may have participated in a class or program in more than one venue.) However, the venue of exposure appears to have varied somewhat by specific message communicated; for example, 70(±6) percent of adolescents who said they had learned about how religious values relate to sexual intercourse in a class or program reported that this class or program had been held at a place of worship (Exhibit 3-24). These results indicate that the emphasis and content of information about sex and abstinence delivered generally differ by the location in which these programs take place.

**Exhibit 3-24.**

**Adolescent Exposure to Information about Sex and Abstinence: Venues in Which Specific Messages Were Related to Adolescents in a Class or Program**



These results are also of interest when viewed in conjunction with MKP preferences as to where they favor their adolescent receiving abstinence messages. Although MKPs were about equally likely to favor their adolescents receiving information about waiting to have sexual intercourse until marriage from a place of worship (85 $\pm$ 3 percent), doctor's office (85 $\pm$ 3 percent), or school (83 $\pm$ 3 percent), it is clear that the actual sources from which adolescents receive this message are more variable. 80( $\pm$ 4) percent of adolescents who reported that they had learned about waiting to have sexual intercourse until marriage said that they had done so in school, as compared to 53( $\pm$ 5) percent in places of worship and 18( $\pm$ 5) percent from a doctor's office or health care clinic.

***Although most adolescents identified a family member as their most preferred source of information about sex or sexual issues, a substantial proportion also identified friends their own age as their most preferred source, in contrast to their MKPs' preferences.***

We additionally asked adolescents who they would most prefer to talk to about sex and sexual issues if they could only choose one person. Although, like their MKPs, the majority of adolescents identified a preferred information source within the family (68 $\pm$ 5 percent), a substantial proportion (17 $\pm$ 3 percent) of adolescents reported that they would prefer to talk to friends their own age or to

their boyfriend/girlfriend. In contrast, less than 1 percent of MKPs most preferred that their adolescent talk to friends of their own age about sex and sexual issues (0.6±0.8 percent) (Table 3-5).

**Table 3-5.**  
**Adolescent Attitudes – Preferred Source of Information about Sex and Sexual Issues**  
**(N=963)**

Relationship	Percent	95% Confidence Interval	Standard Error
Family member	68.3%	64.1-72.6	2.2
Mother	43.9%	39.3-48.4	2.3
Father	13.7%	10.5-16.9	1.6
Grandparent	1.5%	0.6-2.4	0.5
Other adult relative	2.2%	0.5-4.0	0.9
Brother or Sister	7.0%	4.6-9.4	1.2
Non-family member	31.3%	27.1-35.6	2.2
Doctor or Nurse	1.1%	0.0-2.1	0.5
Minister, Priest, Rabbi	0.2%	0.0-0.5	0.1
Adult Friends	3.9%	2.2-5.5	0.8
Teacher	8.7%	5.6-11.8	1.6
Friends My Own Age, Boyfriend, Girlfriend	17.4%	14.2-20.6	1.6
Other	0.4%	0.1-0.6	0.1

### Adolescent and Parent Perceptions of Each Other's Views

For several outcome measures, we collected information not only on MKPs' and adolescents' own views, but on their perceptions of each other's views. For example, we asked each MKP to report how comfortable he or she is talking to his or her adolescent about sex, and additionally asked each adolescent to report how comfortable he or she felt that his or her MKP is talking about sex. Here, we compare self-reported views for MKPs and adolescents with their perceptions of each other for the following two sets of measures:

- *Comfort level talking to each other about sex*, parent and adolescent reports. (Response categories: very comfortable, somewhat comfortable, somewhat uncomfortable, very uncomfortable.)
- *Level of agreement with statement, "It is against your values for [your adolescent/you] to have sexual intercourse before marriage."* (Response categories: strongly agree, somewhat agree, somewhat disagree, strongly disagree.)

Responses were coded so that higher values indicated higher comfort levels and higher levels of agreement.

Table 3-6 compares mean self-reported comfort levels and views about abstinence for MKPs and adolescents with MKP and adolescent perceptions of each other's views. MKPs reported that they were more comfortable talking about sex with their adolescents than adolescents perceived that they were. Similarly, adolescents reported greater comfort levels than their MKPs anticipated, although the magnitude of the difference was not as large as for parent comfort levels.

**Table 3-6.**  
**Comparison of Parent and Adolescent Self-Reports and Perceptions of Each Other's Views**

	<b>Adolescent Report</b>	<b>Parent Report</b>
<b><i>Comfort level talking to each other about sex (n=984)</i></b>		
Parent comfort level	3.11 (3.03-3.20) SE=0.04	3.54 (3.48-3.60) SE=0.03
Adolescent comfort level	2.79 (2.70-2.87) SE=0.04	2.72 (2.63-2.82) SE=0.05
<b><i>Against values for adolescent to have sex before marriage (n=940)</i></b>		
Parent views about abstinence	3.08 (2.98-3.18) SE=0.05	3.13 (3.02-3.23) SE=0.05
Adolescent views about abstinence	2.66 (2.55-2.77) SE=0.06	3.08 (2.98-3.18) SE=0.05

Notes: The values in parentheses represent the 95 percent confident interval. SE = Standard Error of Percent. (Chi-squared tests indicated statistically significant differences at 95% confidence level for all measures.)

Adolescents were more successful in predicting their MKPs' views on sex before marriage; they reported just slightly more conservative perceived views among MKPs than MKPs reported for themselves. On the other hand, adolescents reported substantially less conservative views about abstinence than their MKPs expected them to.

### **Differences in Adolescent Attitudes by Parent and Adolescent Characteristics**

Like the attitudes of their MKPs, adolescent opinions about sex and abstinence differed by age, gender, race/ethnicity, income status, and attendance of religious services. In this section, we briefly describe overall patterns in adolescent attitudes by subgroup.

#### ***Older adolescents expressed significantly more permissive views about sex and abstinence than their younger counterparts.***

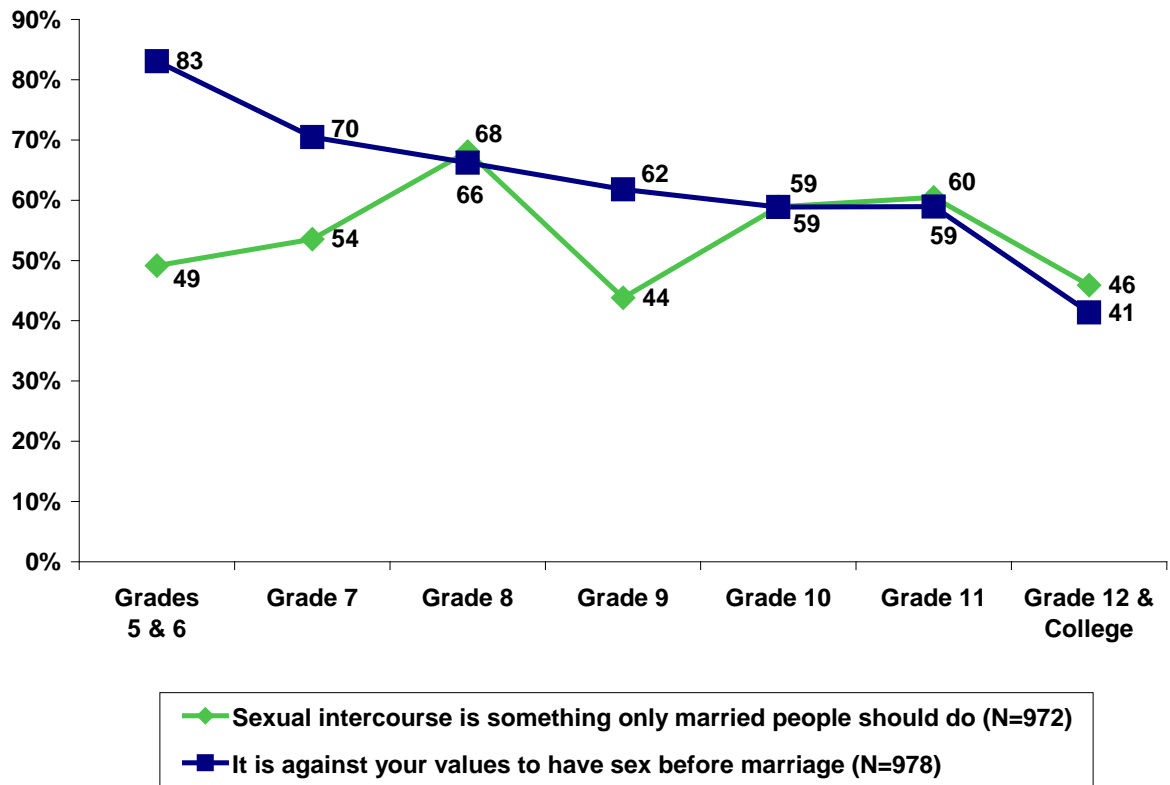
**Adolescent Age.** Older adolescents expressed more permissive views about sex and abstinence than their younger counterparts. Although there was no clear trend by adolescent age in percent agreement that sexual intercourse is something only married people should do, older adolescents were less likely to agree that it is against their values for themselves to have sexual intercourse before marriage, with the percent strongly or somewhat agreeing with this statement falling sharply from 83(±11) percent



among adolescents in grades 5 or 6 to only 41(±15) percent among adolescents in their senior year of high school or older (Exhibit 3-25).

**Exhibit 3-25.**

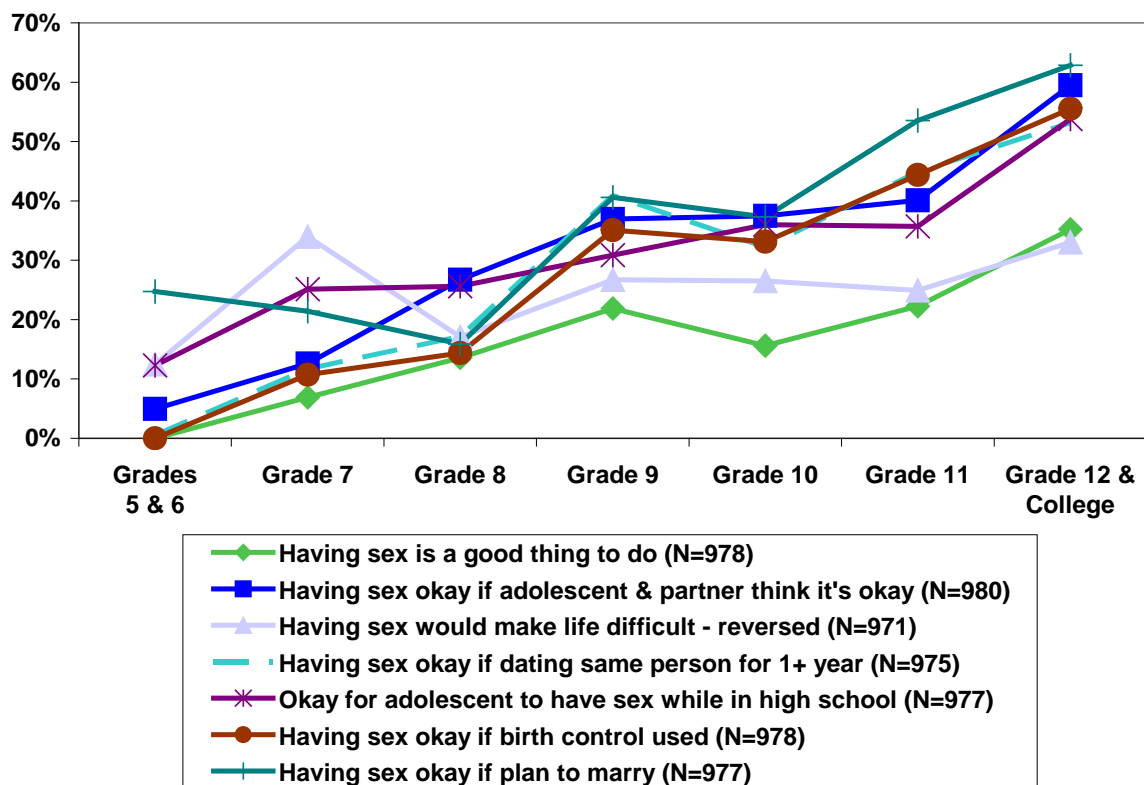
**Adolescent Views by Grade Level: Percent of Adolescents Agreeing with General Statements about Sex and Abstinence**



Trends by adolescent age were similar when adolescents reported their views about specific types of permissible sexual behavior for themselves, with the percent agreement rising steadily for each of the seven outcome measures in this category (Exhibit 3-26 and Table 3-7). As discussed above, MKPs of older adolescents similarly expressed more permissive views about their adolescents' sexual behavior than did MKPs of younger adolescents, although this trend may have been partially mitigated by more restrictive views among older parents in general. In the multivariate analysis presented in the next section, we explicitly examine the independent influences of parent and adolescent age on attitudes in order to address this issue.

**Exhibit 3-26.**

**Adolescent Views by Grade Level: Percent of Adolescents Agreeing with Specific Views about Permissible Sexual Behavior**



**Table 3-7.****Adolescent Views by Grade Level: Percent of Adolescents Agreeing with Specific Views about Permissible Sexual Behavior**

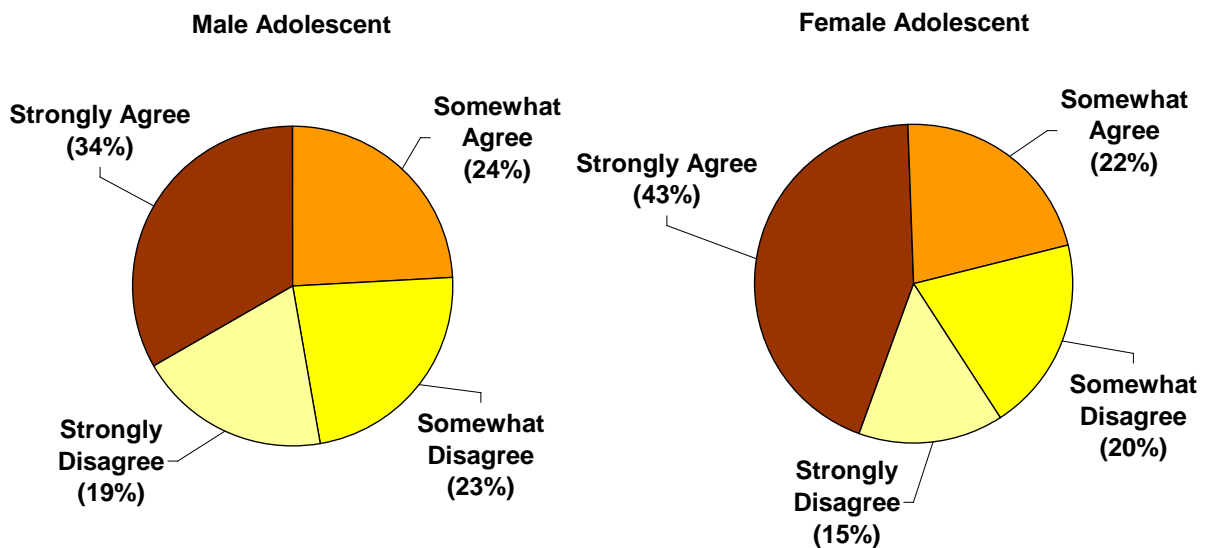
	<b>Grades 5 &amp; 6</b>	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12 &amp; College</b>
Having sex is a good thing to do (N=978)	0.0% (0.0-0.0) SE=0.0	6.9% (0.4-13.3) SE=3.3	13.5% (94.8-22.2) SE=4.4	21.9% (11.3-32.4) SE=5.4	15.6% (8.6-22.6) SE=3.6	22.3% (13.4-31.2) SE=4.5	35.2% (21.5-48.9) SE=6.9
Having sex okay if adolescent & partner think it's okay (N=980)	5.0% (0.0-12.6) SE=3.8	12.6% (5.1-20.1) SE=3.8	26.7% (15.4-38.0) SE=5.7	36.9% (24.8-49.1) SE=6.1	37.5% (27.3-47.6) SE=5.1	40.1% (29.2-51.1) SE=5.6	59.5% (45.9-73.0) SE=6.8
Having sex would make life difficult - reversed (N=971)	12.5% (3.1-21.9) SE=4.7	34.0% (22.6-45.4) SE=5.8	17.1% (7.7-26.5) SE=4.7	26.7% (14.3-39.2) SE=6.3	26.5% (16.6-36.4) SE=5.0	24.9% (16.0-33.9) SE=4.5	33.0% (19.5-46.5) SE=6.8
Having sex okay if dating same person for 1+ year (N=975)	0.5% (0.0-1.6) SE=0.5	11.7% (4.2-19.2) SE=3.8	17.2% (8.1-26.3) SE=4.6	40.9% (28.5-53.3) SE=6.3	32.2% (23.0-41.4) SE=4.6	44.9% (33.6-56.2) SE=5.7	53.2% (39.2-67.2) SE=7.1
Okay for adolescent to have sex while in high school (N=977)	12.3% (1.7-22.8) SE=5.3	25.1% (14.7-35.5) SE=5.2	25.6% (15.8-35.4) SE=5.0	30.9% (20.6-41.1) SE=5.2	36.0% (26.7-45.3) SE=4.7	35.7% (26.0-45.4) SE=4.9	53.8% (39.9-67.6) SE=7.0
Having sex okay if birth control used (N=978)	0.0% (0.0-0.0) SE=0.0	10.7% (4.2-17.3) SE=3.3	14.4% (7.7-21.1) SE=3.4	35.1% (23.4-46.8) SE=5.9	33.1% (24.0-42.2) SE=4.6	44.4% (33.1-55.7) SE=5.7	55.5% (44.1-69.3) SE=7.0
Having sex okay if plan to marry (N=977)	24.8% (8.7-40.8) SE=8.0	21.4% (11.6-31.2) SE=5.0	15.9% (7.0-24.8) SE=4.5	40.6% (28.5-52.7) SE=6.1	37.3% (27.8-46.8) SE=4.8	53.6% (41.9-65.2) SE=5.9	62.8% (49.8-75.9) SE=6.6
Notes: The values in parentheses represent the 95 percent confident interval. SE = Standard Error of Percent.							

**General attitudes about sex and abstinence and views about permissible sexual behavior were more permissive among male adolescents than among females.**

**Adolescent Gender.** Differences in adolescent attitudes about sex and abstinence by adolescent gender also mirrored differences in attitudes among MKPs. Like male MKPs, male adolescents were less likely than females to somewhat or strongly agree that sexual intercourse is something only married people should do ( $50\pm 7$  percent versus  $57\pm 6$  percent) and that it is against their values to have sexual intercourse before marriage ( $58\pm 6$  percent versus  $65\pm 6$  percent) (Exhibit 3-27).

**Exhibit 3-27.**

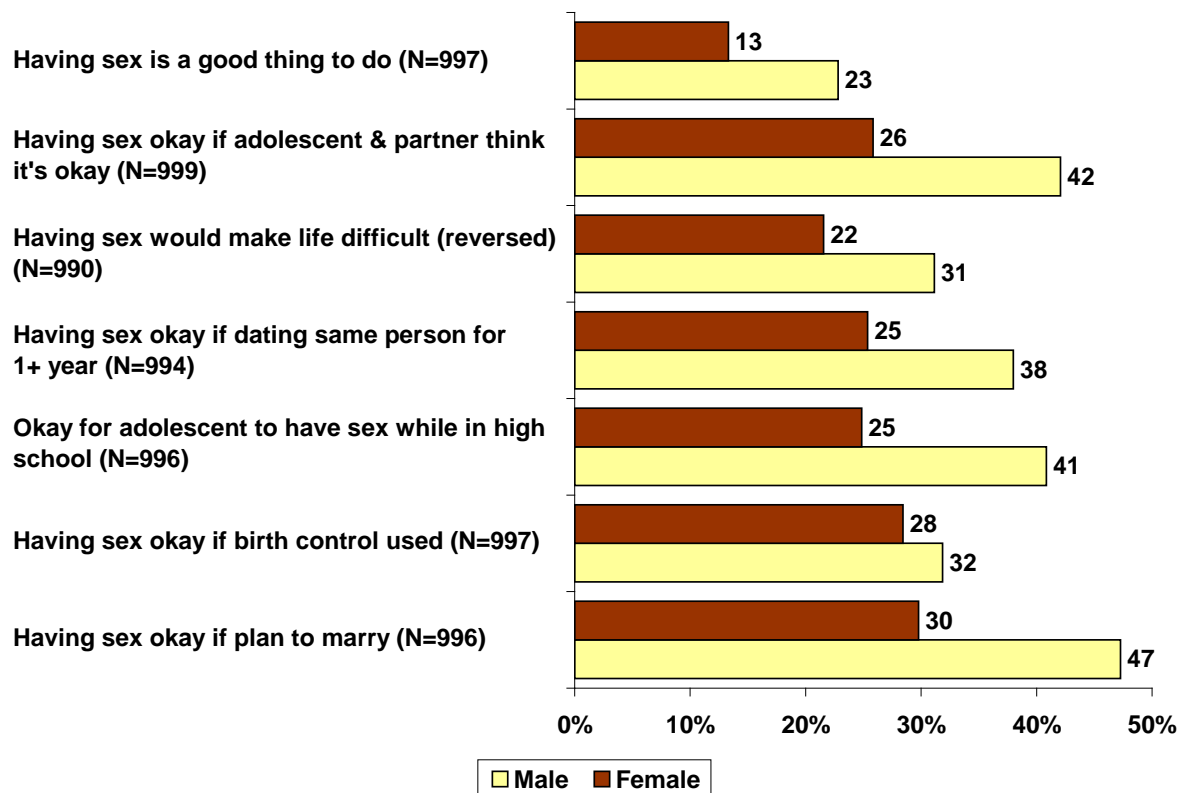
**Adolescent Views by Gender: Percent Adolescent Agreement That It Is Against Their Values to Have Sexual Intercourse Before Marriage (N=997)**



Similarly, male adolescents expressed consistently more permissive views about their own sexual behavior than did females (Exhibit 3-28), although the magnitude of this difference varied somewhat across the seven outcome measures in this grouping. For example, 32(±6) percent of males somewhat or strongly agreed that it would be okay for them to have sexual intercourse at their current age if birth control is used, as compared to 28(±6) percent of females. More substantial gender differences were found in different contexts, with 23(±5) percent of males as compared to just 13(±5) percent of females somewhat or strongly agreeing that having sex is a good thing to do at their current age, 41(±6) percent of males and 25(±5) percent of females somewhat or strongly agreeing that it would be okay to have sexual intercourse before finishing high school, and 42(±6) percent of males and 26(±5) percent of females agreeing that it would be okay to have sexual intercourse if both themselves and their partner felt it was okay.

**Exhibit 3-28.**

**Adolescent Views by Gender: Percent of Adolescents Agreeing with Specific Views about Permissible Sexual Behavior**



In general, these results by adolescent gender seem to indicate that the greater tolerance among MKPs for pre-marital sexual behavior among male adolescents is reflected in their adolescents' own views. It seems likely that both parent and adolescent views more broadly reflect existing social and cultural gender norms.

***Adolescent Race/Ethnicity.*** We showed above that MKP views about sex and abstinence varied across racial/ethnic groups. Adolescent views also differed by race/ethnicity; however, patterns differed somewhat from those observed among MKPs.

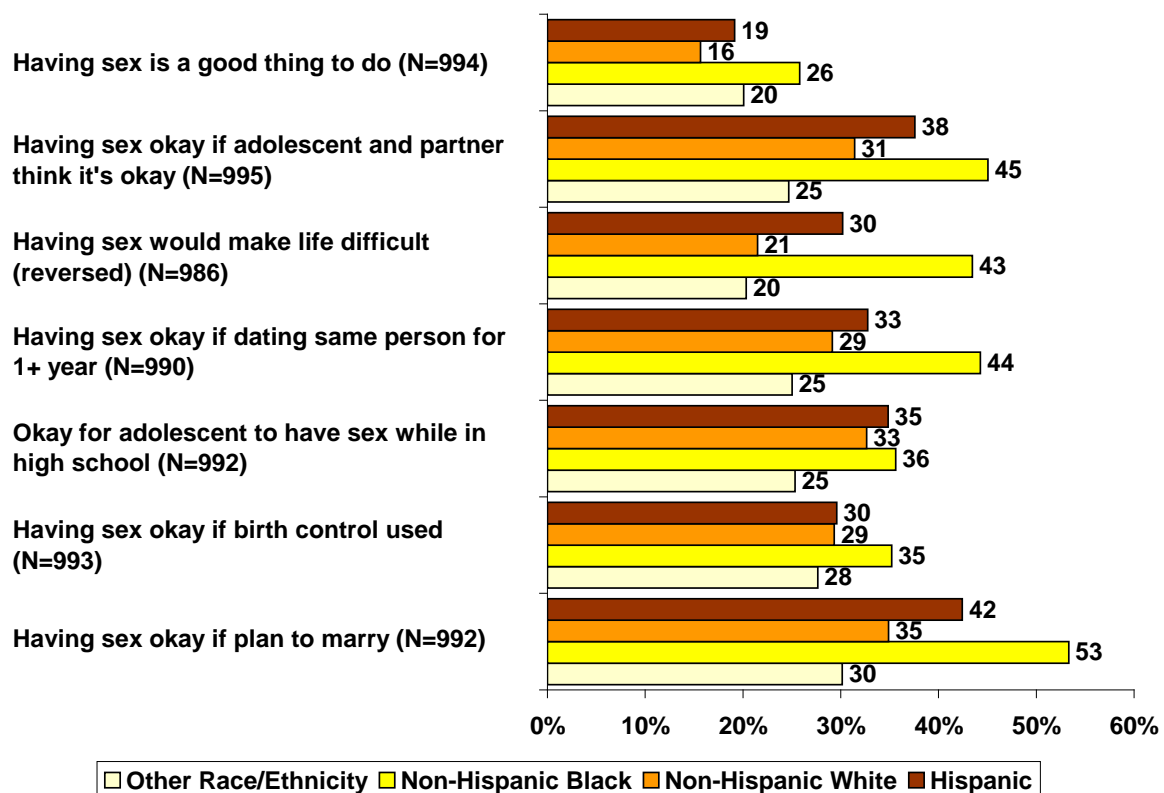
For example, non-Hispanic black MKPs expressed the most conservative general attitudes about sex and abstinence across racial/ethnic categories, with non-Hispanic white parents expressing the least conservative views, and Hispanic parents and parents of other race/ethnicities somewhere in between. In contrast, adolescents from Hispanic, non-Hispanic black, and non-Hispanic white backgrounds all expressed relatively similar views, with adolescents from other racial/ethnic backgrounds expressing somewhat more conservative attitudes. Fifty-three( $\pm 16$ ) percent of non-Hispanic black adolescents somewhat or strongly agreed that it is against their values to have sexual intercourse before marriage, as compared to 52( $\pm 13$ ) percent of Hispanics, 54( $\pm 5$ ) percent of whites, and 56( $\pm 14$ ) percent of adolescents of other race/ethnicities. Similarly, 61( $\pm 14$ ) percent of non-Hispanic black adolescents somewhat or strongly agreed that sex is something only married people should do, as compared to 59( $\pm 12$ ) percent of Hispanics, 62( $\pm 5$ ) percent of non-Hispanic whites, and 67( $\pm 13$ ) percent of adolescents from other racial/ethnic groups.

***In contrast to their MKPs, non-Hispanic black adolescents expressed more permissive views about permissible sexual behavior than adolescents from other racial/ethnic groups.***

Patterns among adolescents and MKPs diverged even further for measures of views about permissible adolescent sexual behavior. Hispanic adolescents reported relatively permissive views as compared to non-Hispanic whites and adolescents of other race/ethnicities. However, non-Hispanic black adolescents expressed the most permissive views across all seven of these outcome measures, in contrast to the restrictive views reported by their MKPs (Exhibit 3-29).

**Exhibit 3-29.**

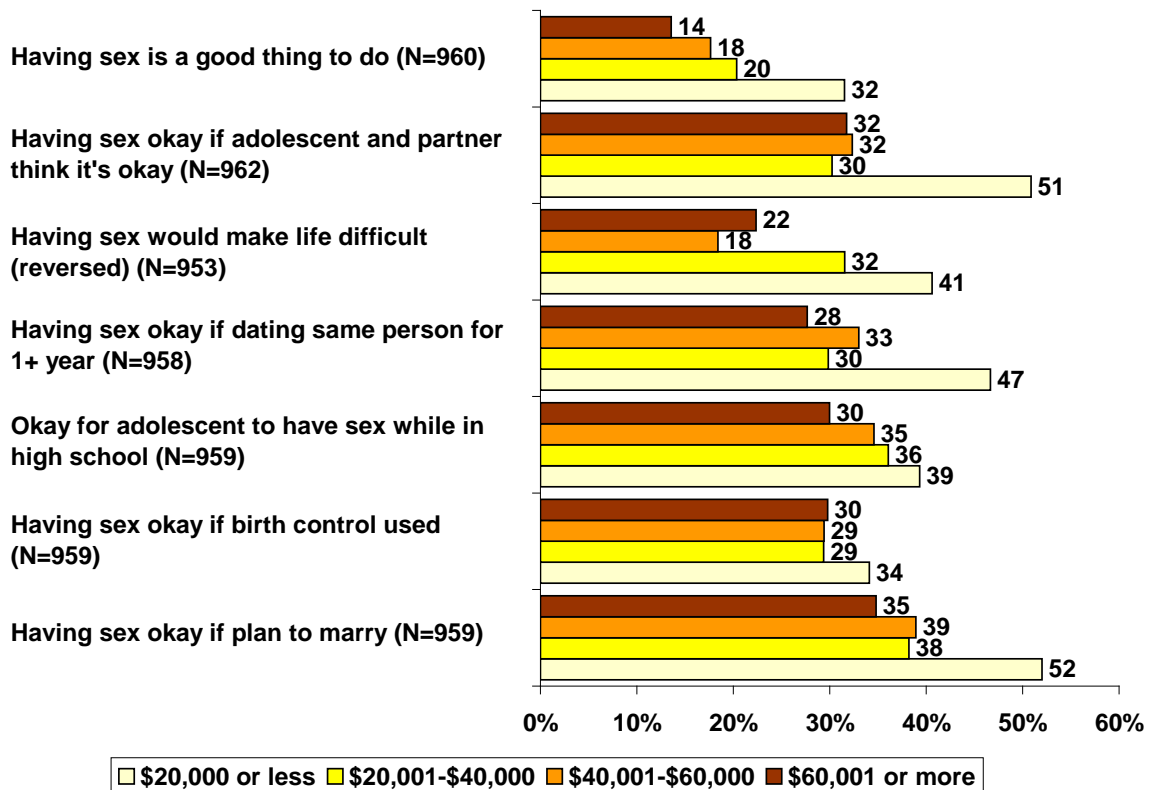
**Adolescent Views by Race/Ethnicity: Percent of Adolescents Agreeing with Specific Views about Permissible Sexual Behavior**



**Household Income.** While MKPs from low-income households expressed more conservative general views about sex and abstinence, adolescents from low-income households reported less restrictive attitudes about their own sexual behavior (Exhibit 3-30). For example, 52(±16) percent of adolescents from households earning \$20,000 or less per annum somewhat or strongly agreed that it would be okay to have sex and their current age if they had plans to marry their prospective partner, while only 35(±6) percent of adolescents from households earning \$60,000 or more agreed with this statement. While only 14(±5) percent of adolescents from households earning over \$60,000 a year agreed that having sex is a good thing to do at their age, more than twice as many (32±4 percent) from households in the lowest income bracket agreed, the largest observed difference across income brackets for this set of measures.

**Exhibit 3-30.**

**Adolescent Views by Household Income Bracket: Percent of Adolescents Agreeing with Specific Views about Permissible Sexual Behavior**



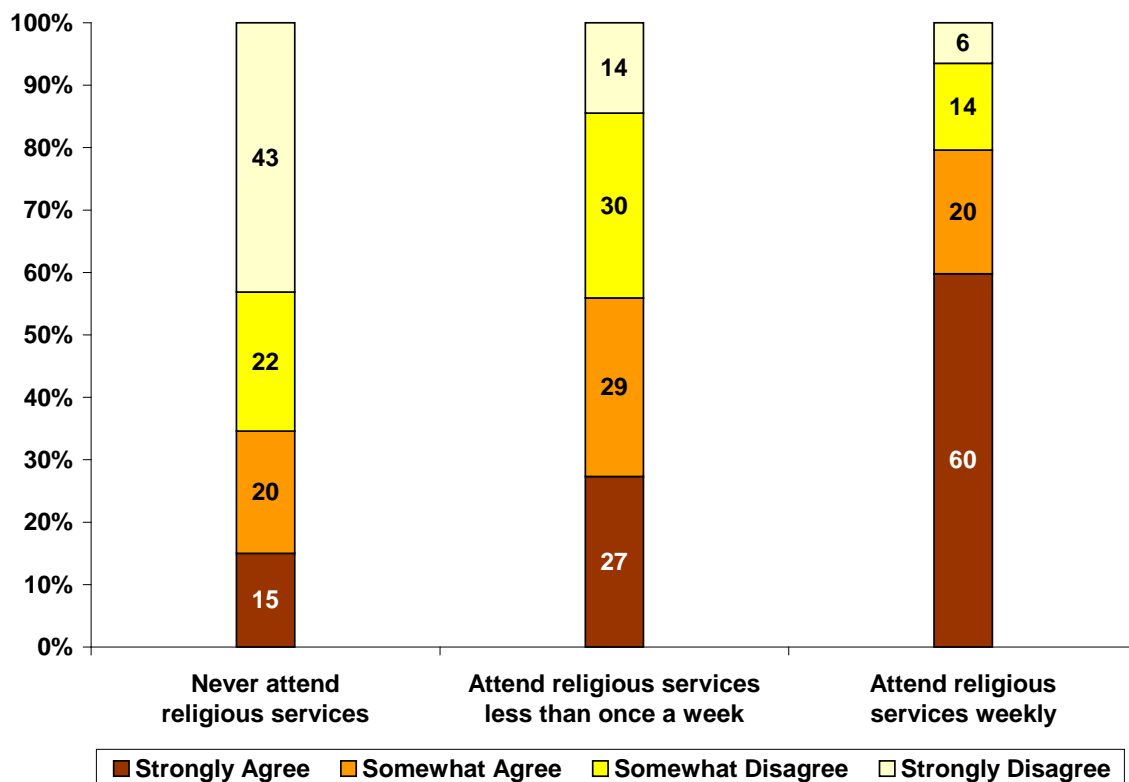


***Regular attendance of religious services was associated among adolescents with more conservative general attitudes about sex and abstinence, more restrictive attitudes about permissible sexual behaviors, and greater perceived levels of parental control.***

**Religious Service Attendance.** Adolescents who attended religious services more regularly expressed more conservative general views about sex and abstinence. Eighty percent( $\pm 6$ ) of adolescents who attended religious services weekly or more often agreed that sexual intercourse is something only married people should do, as compared to 56( $\pm 7$ ) percent of adolescents who attend religious services less than once a week, and 35( $\pm 10$ ) percent of adolescents who never attend religious services (Exhibit 3-31). Similarly, 70( $\pm 6$ ) percent of adolescents who attended religious services weekly or more often agreed that it is against their values to have sexual intercourse before marriage, while only 51( $\pm 9$ ) percent of adolescents who attend religious services once a week agreed, and 24( $\pm 8$ ) percent of adolescents who never attend religious services agreed. This finding very closely parallels findings for general attitudes about sex and abstinence among MKPs reported above.

**Exhibit 3-31.**

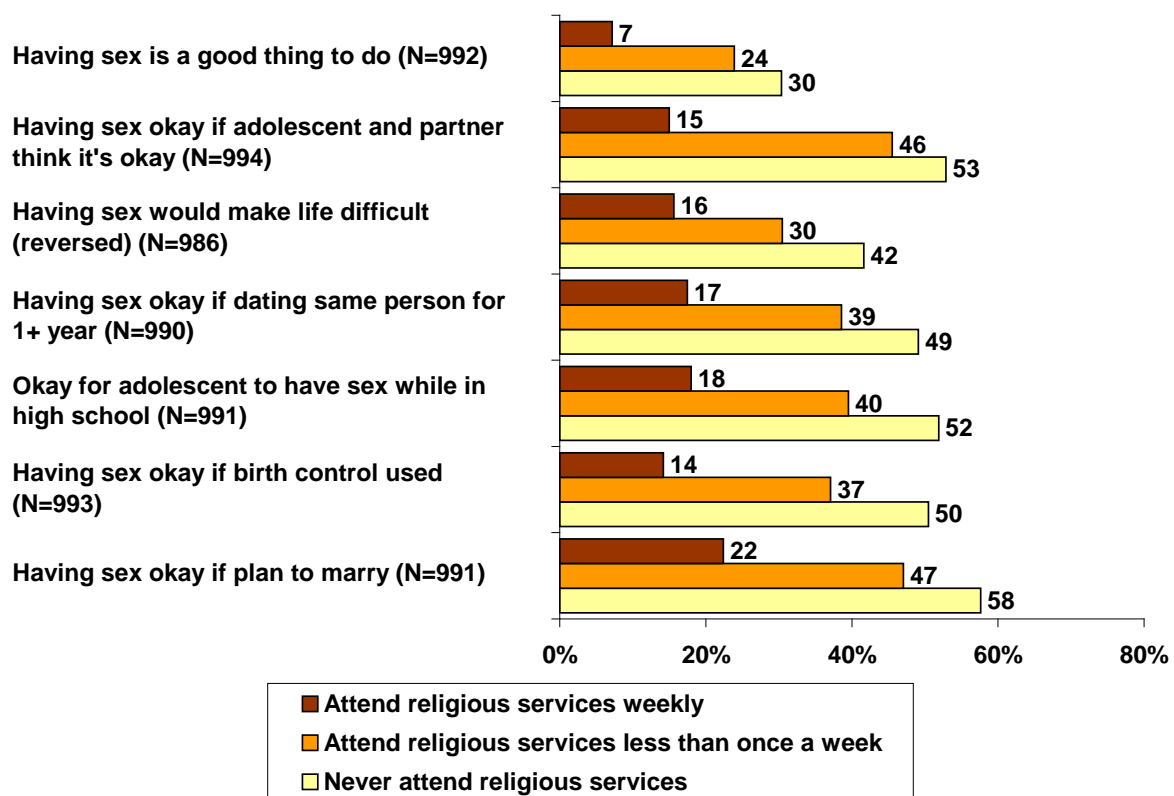
**Adolescent Views by Religious Service Attendance: Percent Adolescent Agreement that Sexual Intercourse is Something Only Married People Should Do**



Religious service attendance was similarly associated with more restrictive adolescent views about permissible sexual behavior. For all seven outcome measures in this grouping, adolescents who attended religious services weekly or more were more than two and a half times less likely to somewhat or strongly agree than adolescents who never attended religious services (Exhibit 3-32). For some specific measures, the discrepancy was even more pronounced: for example, adolescents who attended religious services regularly were more than four and a half times less likely to agree that sexual intercourse is a good thing to do at their age ( $7\pm3$  percent) than adolescents who did not attend religious services ( $30\pm10$  percent).

**Exhibit 3-32.**

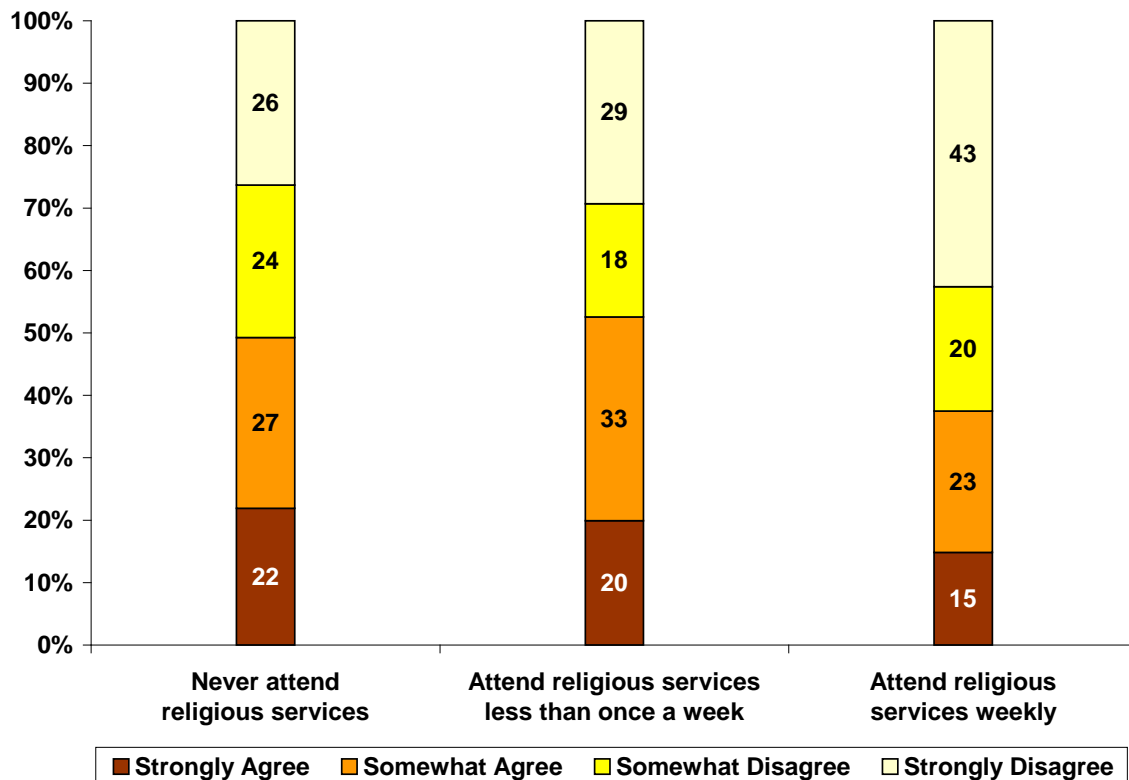
**Adolescent Views by Religious Service Attendance: Percent of Adolescents Agreeing with Specific Views about Permissible Sexual Behavior**



Finally, religious service attendance was associated with greater adolescent-perceived levels of parental control (Exhibit 3-33). Although the pattern in this outcome was not quite as striking as for the other two outcome groupings, adolescents who attended religious services at least weekly were more likely to disagree that there is little their parents can do at their age to prevent them from having sexual intercourse ( $38\pm6$  percent) than adolescents who attended religious services less frequently ( $53\pm7$  percent) or never ( $49\pm10$  percent).

**Exhibit 3-33.**

**Adolescent Views by Religious Service Attendance: Percent Adolescent Agreement that There Is Little Parents Can Do to Prevent Them from Having Sexual Intercourse at Their Age**



## 3.2. Multivariate Analysis

In the previous section, we provided a basic descriptive analysis of parent and adolescent attitudes about sex and abstinence. Although this information represents a useful starting point for understanding how U.S. adolescents and their “most knowledgeable parents” view these issues, teasing out the independent relationships between their views and other characteristics requires a more sophisticated approach.

For example, we showed above that general adolescent attitudes about pre-marital sex vary substantially by racial/ethnic group. However, we cannot say based on those analyses alone whether this variation is in fact driven by other differences in characteristics of these groups, such as income, educational attainment, age, or religiosity. The complexity of the analysis increases further when considering associations with intermediate outcomes like communication about sex and abstinence, which are likely to be related not only to adolescents’ own characteristics, but also to characteristics of other parties such as family members, peers, and educators.

In the remainder of Section 3, we present the results of a model-based analysis intended to identify independent associations between these many factors and adolescent attitudes about sex and abstinence. Although we explicitly focus here on adolescent perceptions and views, in building up our model we additionally examined parent and peer attitudes and communication levels as intermediate outcomes. Full results of these supplementary analyses are presented in Appendix C, and will be referred to as necessary to provide appropriate context for our findings on adolescent views.

### Interpretation of Results

As described in greater detail in Appendix B, we employed logistic regressions to test associations between explanatory factors and intermediate or final outcomes. This approach allows us to identify the influence of a particular factor of interest, adjusting for the influence of all other covariates included in the model. Coefficients are reported in the tables and exhibits to follow in their exponentiated form, and may therefore be interpreted as *odds ratios*.

#### *Binary Outcome Measures*

For binary outcome measures, e.g. survey questions with only two possible responses, the “odds” are calculated as the ratio of the probability of the first response over the probability of the second possible response. The “odds ratio” is then defined as the odds under one set of conditions over the odds under another set of conditions.

For example, consider an adolescent attitudinal measure consisting of a statement with which the adolescent may either agree or disagree. The odds are then the probability that the adolescent agrees with the statement of interest over the probability that the adolescent disagrees with that statement. The influence of gender can then be reported as an odds ratio: the odds of agreement when the adolescent is male over the odds of agreement when the adolescent is female. Estimating odds ratios via binary logistic regression as we have done here allows us to examine the change in the odds of

agreement associated with a one-unit change in each explanatory variable, *adjusting for the influence of all other included explanatory variables*.<sup>7</sup>

An odds ratio greater than one implies an increase in the odds of the outcome of interest associated with an increase in the explanatory variable, an estimated odds ratio less than one implies a decrease in the odds, and an estimated odds ratio equal to one implies unchanged odds. Thus, an estimated odds ratio for males of 1.27 would be interpreted as a 27% increase in the odds of agreement when the adolescent respondent is male, while an odds ratio of .63 would be interpreted as a 37% decrease in the odds of agreement when the adolescent respondent is male, adjusting for the influence of other factors. A statistically significant odds ratio estimate allows us to reject the null hypothesis that a particular explanatory variable had no association with the odds that the adolescent agreed with the statement of interest.

For example, consider the estimated odds ratios for adolescent-reported communication with the MKP about sex and abstinence reported in Appendix Table C-3. In the first column, the dependent variable is the adolescent's report of whether he or she had ever had a conversation with the MKP about sex or sexual issues. The estimated odds ratio for male parent gender for this dependent variable is 0.409, with an asterisk indicating that this finding is statistically significant at the 95% confidence interval. This implies that the odds that male MKPs in our sample had ever had a conversation with their adolescent about sex or sexual issues were  $1 - 0.409 = 0.591 \approx 59\%$  lower than the odds that female MKPs had ever had this type of conversation with their adolescent, adjusting for the influence of other included covariates.

For the same outcome measure, the estimated odds ratio for non-Hispanic black MKP race/ethnicity is 9.328. Note that this odds ratio is defined relative to the race/ethnicity categories *not* included as explanatory variables in the logistic regression – in this case, non-Hispanic white and non-Hispanic “other” race/ethnicity.<sup>8</sup> Thus this finding implies that, adjusting for the influence of other included covariates, non-Hispanic black MKPs in our sample had 9.328 times greater odds of ever having had a conversation with their adolescents about sex or sexual issues than non-Hispanic whites and “other” race/ethnicity MKPs. Stated another way, the odds were  $9.328 - 1 = 8.328 \approx 833\%$  higher for non-Hispanic blacks.

Finally, consider the estimated odds ratio of 0.962 for MKP age. Unlike the gender and race/ethnicity explanatory variables described above, age is a continuous measure. The odds ratio for this measure therefore describes the change in odds associated with a one-year increase in MKP age. That is, for each one-year increase in MKP age, the odds that adolescents reported that they had ever had a conversation with their MKP about sex or sexual issues were  $1 - 0.962 = 0.038 \approx 4\%$  lower.

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<sup>7</sup> For binary explanatory variables such as gender, a one-unit change can be conceptualized as a change in category, e.g. from male to female. For a continuous explanatory variable like age, a one-unit change would simply be an increase in age of one year.

<sup>8</sup> For categorical variables like race/ethnicity, at least one category must always be omitted as an explanatory variable in order to define the reference group.

### *Ordered Categorical Outcome Measures*

For many of the outcome variables we examined, there were more than two response categories. For these variables, we employed ordered logistic regressions to test associations between explanatory factors and these parent-adolescent communication outcomes.

Just as we did for our binary logistic results, we report estimated coefficients in their exponentiated form. The resulting estimated odds ratios can then be interpreted similarly to those in the binary specifications, with one added complication. Instead of representing the effect of a one-unit change in the explanatory variable on the odds of moving from one binary state to another, these odds ratios represent the influence on the odds of moving from one response category to the next highest category.

For example, consider the results for frequency of adolescent-reported communication with MKPs about specific topics related to sex and abstinence as reported in Appendix Table C-4. For these variables, there were four available response categories: “never,” “once or twice,” “more than twice but less than 10 times,” or “10 or more times.” The estimated odds ratio for male MKP gender of 0.477 for the “basics of how babies are made, pregnancy, or birth” outcome reported in the first column thus implies that the odds that male MKPs reported more frequent conversations with their adolescents about this topic were  $1 - 0.477 = 0.523 \approx 52\%$  than for female MKPs; that is, male MKPs had 52% lower odds of being in the “once or twice” frequency group than in the “never” group, the “more than twice but less than 10 times” group than in the “once or twice” group, or the “10 or more times” group than in the “more than twice but less than 10 times group.”

### *Seemingly-Unrelated Regressions*

Additionally, we used a “seemingly-unrelated regressions,” or “SUR,” approach, to jointly test associations between the explanatory variables and outcome measures within outcome categories. These SUR estimates can be interpreted as an average effect across the included group of outcome measures. Consider, for example, in the last column of Appendix Table C-3, which reports the average influence of each explanatory variable on the frequency of conversations about all seven specific topics related to sex and abstinence considered as a group. This approach allows us to draw broader inferences about overall associations than we would when considering any single outcome measure independently.

More details of the structural model for estimating individual outcomes and the SUR procedure used in joint hypothesis testing are provided in Appendix B.

#### **3.2.1. Adolescent Perceptions of Parent-Adolescent Communication**

Our survey collected detailed information from both adolescents and their “most knowledgeable parents” on a parallel set of parent-adolescent communication measures. In this section, we compare adolescent reports of the frequency and type of conversations about sex, abstinence, and sexual values they have had with their MKPs with the frequency and type of communication their MKPs say they delivered.

## Modeling Adolescent Perceptions of Parent Communication about Sex and Abstinence

The most important determinant of adolescent perceptions of their parent's communication with them about sex and abstinence is, presumably, what the parent actually said. However, comparing MKP and adolescent survey responses revealed substantial disagreement even on relatively straightforward yes/no questions about prior conversations.

For example, MKPs were much more likely to report that they had ever talked about sex or sexual issues with their adolescents (93% vs. 72%), with a correlation coefficient for MKP and adolescent reports of only about .19. Table 3-8 compares MKP and adolescent responses across communication measures; though the degree of concordance varied by measure, correlation coefficients were relatively low in general.

**Table 3-8.**  
**Parent-Adolescent Communication: Comparison of MKP and Adolescent Responses**

	MKP Report (n=929)	Adolescent Report (n=939)	Correlation*
Ever talked about sex or sexual issues (% agreeing)	93%	72%	0.1863
Frequency of conversations about sexual values in past year (Range: 1=never to 3=2 or more times)	2.64	2.16	0.2983
<b>Frequency of conversations about specific topics (Range: 1=never to 5=10 or more times)</b>			
The basics of how babies are made, pregnancy, or birth	3.28	2.53	0.3875
Sexually transmitted diseases or HIV/AIDS	3.17	2.39	0.4258
How to have good romantic relationships	2.85	2.29	0.3231
How to behave on dates	2.87	2.29	0.3379
How to resist pressures to have sexual intercourse	3.00	2.28	0.3710
Waiting to have sexual intercourse until marriage	3.22	2.46	0.4058
How religious values relate to sexual intercourse	2.83	2.28	0.5086
<b>Parent ever said (% agreeing)</b>			
Young people should not engage in sexual intercourse until they are married.	68%	66%	0.4013
Young people should not engage in sexual intercourse until they are in a relationship with someone they feel they would like to marry.	42%	51%	0.1634
Young people should not engage in sexual intercourse until they have, at least, finished high school.	48%	47%	0.1334
It's okay for young people to engage in sexual intercourse as long as condoms are used to protect against sexually transmitted diseases and pregnancy.	20%	41%	0.2086

\*All correlation coefficients statistically significant at 95% confidence level.

It is clear from these data that adolescents and their MKPs view their communication about sex and abstinence differently. For most measures, MKPs consistently reported greater levels of communication than their adolescents did; it is unclear whether this discrepancy arises from over-reporting of communication levels by MKPs, lack of attention to MKPs on the part of adolescents,

adolescents simply not “getting” the messages MKPs mean to communicate, or some other factor entirely.

Because of the observed discrepancy, we wished to determine whether we could identify other factors associated with differences in adolescent perceptions of parent-adolescent communication. We performed a series of logistic regressions (binary logistic regressions for two-level outcomes, and ordered logistic regressions for multiple-level response variables), with the adolescent-reported communication measures as dependent variables, and the corresponding MKP-reported communication measures as control variables, along with the following additional covariates:

- *MKP demographics*: age, sex, race/ethnicity, English as primary language spoken at home, marital status, single parent status, parent educational attainment
- *Household socioeconomic status*: household income, maximum educational attainment in household, region of residence (South, Northeast, Midwest, West), urban/rural status
- *Adolescent demographics*: age, sex, race/ethnicity
- *MKP and adolescent religious service attendance*: frequency attending religious services
- *MKP- and adolescent-reported relationship quality*: frequency of shared enjoyable activities, overall closeness between parent and adolescent, overall relationship quality
- *MKP attitudes about sex and abstinence*: general attitudes about sex and abstinence, attitudes about adolescent’s current sexual behavior, perceived control over adolescent sexual behavior
- *Adolescent exposure to information about sex, abstinence, and sexual values in classes or programs*: adolescent participation in class, program, or event that talked about waiting to have sexual intercourse until marriage in past year (MKP report), specific sex or abstinence topics covered in a class or program (adolescent report).

Because we include the relevant parent-reported communication measure in each specification as a control variable, estimated associations for other included covariates can be interpreted as the independent association of these factors with communication levels reported by the adolescent, *adjusting for what the parent reported that he or she actually communicated*.<sup>9</sup> This can be thought of as the association of these factors with differences in the probability that the adolescent heard and was able to report hearing a particular message – regardless of what the parent reported that they said.

If no other included covariates were statistically significantly associated with adolescent-reported communication within this framework, we would conclude that the observed discrepancies in parent- and adolescent-reported communication levels represented a general phenomenon across all groups. If a covariate were statistically significantly associated with adolescent-reported communication, on the other hand, we would conclude that this factor was independently associated with differences in the likelihood that adolescents understood and reported a message, adjusting for what the MKP reported that he or she communicated.

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<sup>9</sup> As seen in Appendix Tables C-3 – C-5, the associations between the parent-reported communication measures and the adolescent-reported measures were positive and statistically significant in all cases.



## Results

Appendix Tables C-3 – C-5 report estimated odds ratios for the model specification described above for each set of adolescent-reported communication measures. In the remainder of this section, we present key findings for the analyses of influences on adolescent-reported communication with parents about sex and abstinence.

### ***Adolescents with older MKPs reported lower general levels of communication about sex, abstinence, and sexual values, adjusting for the MKPs' own reported communication levels.***

**Parent Age.** Adjusting for MKPs' own reports, adolescents with older MKPs reported lower general levels of parent-adolescent communication about sex and abstinence. Each one-year increase in MKP age was associated with statistically significant decreases both in the odds that the adolescent reported that they had ever talked to their MKP about sex or sexual issues, and in the odds that the adolescent reported that he or she had talked about sexual values with their MKP in the past year, and across these two measures considered jointly (Appendix Table C-3). Adolescents with older MKPs were also less likely to report that their MKP had specifically told them that young people should not engage in sex until marriage or until they are dating someone they feel they would like to marry, or that it would be okay for young people to have sexual intercourse as long as they used a condom (Appendix Table C-5).

In general, these results imply that increasing MKP age is associated with a decrease in the likelihood that adolescents heard and reported MKPs' expressed views about sex and abstinence. We cannot tell from these data whether this is because older parents are more likely to overstate their actual frequency of communication, because older parents communicate with their adolescents less effectively about sex and abstinence, or because of some other factor related to parent age. Interestingly, however, we found no statistically significant association between MKP age and adolescent-reported frequency of communication about specific abstinence and sex topics in these specifications (Appendix Table C-4).

### ***Adolescents reported lower general levels of communication and lower frequency of communication about specific topics with male MKPs, adjusting for MKPs' own reports.***

**Parent Gender.** Adolescents reported lower general communication levels (Appendix Table C-3) and lower frequency of communication about specific topics (Appendix Table C-4) with male MKPs than with female MKPs. As with the age effect described above, we cannot tell whether this difference arises from over-reporting of communication levels by male parents, poorer communication skills in this subgroup overall, or some other factor. However, it is clear that adolescent perceptions of parent-reported communication levels differ by parent gender.

***Adolescents with non-Hispanic black MKPs reported higher levels of general communication about sex and abstinence, adjusting for MKPs' own reports, while adolescents with Hispanic MKPs reported lower communication frequency for conversations about specific sex- and abstinence-related topics.***

***Parent Race/Ethnicity and Language Status.*** Adolescents with non-Hispanic black MKPs reported higher levels of general communication with their MKPs about sex and sexual issues in comparison with adolescents with MKPs of non-Hispanic white or “other” race/ethnicity, adjusting for MKPs’ own reports (Appendix Table C-3). As described in Appendix C, non-Hispanic black race/ethnicity was also associated with increased MKP-reported communication levels (Appendix Table C-15); in conjunction, these findings suggest that higher levels of parent-reported communication in this subgroup are paired with an increased likelihood that adolescents hear and report these types of conversations.

In contrast, adolescents with Hispanic MKPs reported lower communication frequency for conversations about specific sex- and abstinence-related topics as compared to adolescents with MKPs of non-Hispanic white or “other” race/ethnicity (Appendix Table C-4). However, for this subgroup, there were no differences in MKP-reported communication levels (Appendix Tables C-14 – C-17), indicating that differences in perceptions of communication were found for Hispanic adolescents despite a lack of differences perceived by their MKPs.

Considered as a whole, these findings suggest racial/ethnic differences in adolescent perceptions of communication about sex and abstinence that should be considered by policymakers planning interventions aimed at influencing communication about sex and abstinence among minority groups.

***Lower MKP educational attainment was associated with lower adolescent-reported communication levels, adjusting for MKPs' own reports.***

***Parent Educational Attainment.*** MKP-reported educational attainment was associated with lower adolescent-reported levels of communication about sex and abstinence, adjusting for MKPs’ own reports (Exhibit 3-34, Appendix Table C-3). This could indicate less effective communication skills among lower-educated parents, or over-reporting of communication levels among parents with lower education. MKP education levels were not associated with any differences in adolescent-reported frequency of conversation about specific topics or adolescent-reported likelihood of receiving specific messages related to sexual values from MKPs.

***Marital Status and Single Parenthood.*** There were no consistent associations between our MKP marital status or single parenthood measures and adolescent-reported communication levels.

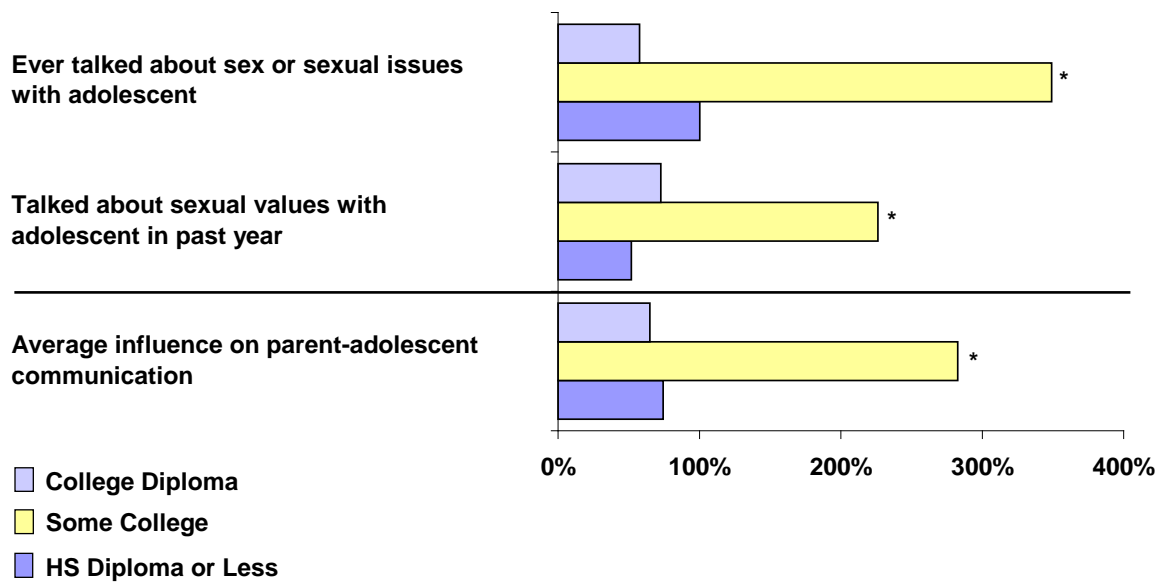
***Household Socioeconomic Status.*** While there were some scattered statistically significant associations across outcome measures, there was no evidence that either income or maximum household educational attainment influenced adolescent-reported communication levels, adjusting for their parents’ own reports.

**Geographic Region and Urban Residence.** Neither urban residence nor geographic region was consistently associated with differences in adolescent-reported communication levels across measures.

**Exhibit 3-34.**

**Estimated Association Between MKP Educational Attainment and Odds of More Frequent Adolescent-Reported Parent-Adolescent Communication about Sex and Sexual Values (N=732)**

(Omitted group is “Some Post-Graduate Education”; results adjusted for parent-reported frequency of communication.)



\* Statistically significant difference from other educational attainment groups at 95% confidence level

**Older adolescents reported higher frequency of communication about specific topics related to sex and abstinence, adjusting for their MKPs’ own reports.**

**Adolescent Age.** Older adolescents reported higher average frequency of communication with their MKPs across seven specific topics related to sex and abstinence, adjusting for their MKPs’ own reports (Appendix Table C-4). In particular, adolescents reported higher frequency of communication with their MKPs about how to have good romantic relationships, how to behave on dates, waiting to have sexual intercourse until marriage, and how religious values relate to sexual intercourse. This finding is consistent with the hypothesis that older adolescents are better able to understand the messages their parents are attempting to communicate.

**Adolescent Gender.** Although male adolescents reported lower frequencies of communication with MKPs about two specific topics (how to resist pressures to have sexual intercourse and waiting until marriage to have sex – Appendix Table C-4), on average adolescent gender had no statistically

significant associations with adolescent-reported communication levels, adjusting for MKPs' own reports.

**Adolescent Race/Ethnicity.** We found no evidence of a consistent relationship between adolescent race/ethnicity and adolescent reports of parent-adolescent communication levels.

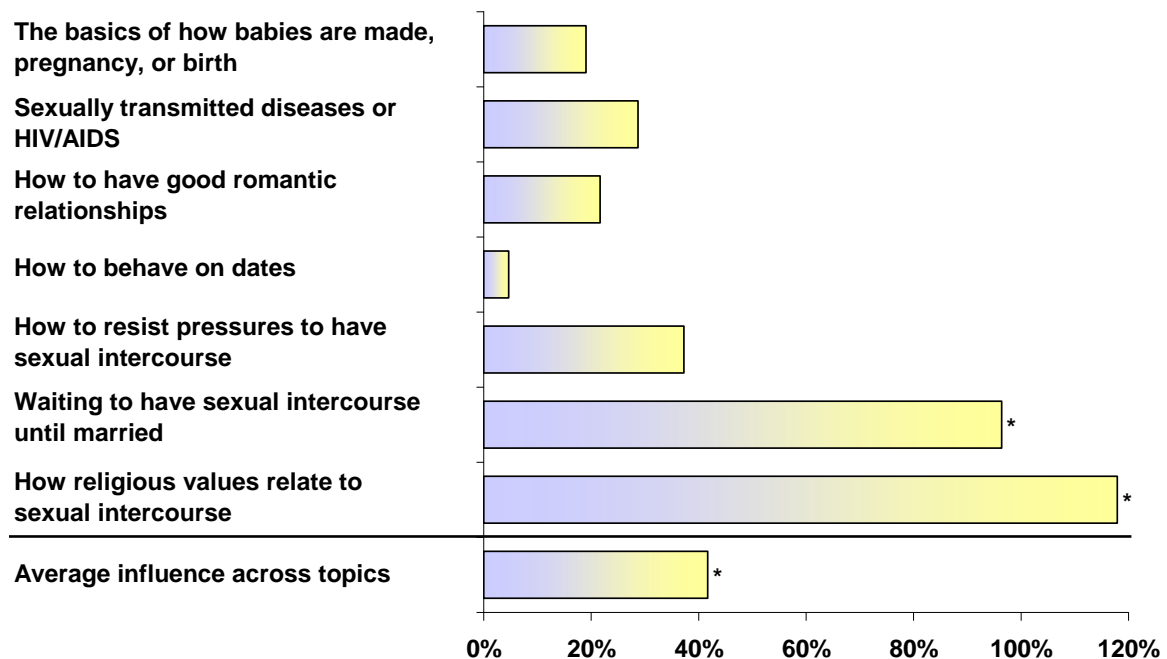
**Adolescent religious service attendance increased adolescent-reported frequency of communication with MKPs about specific topics related to sex and abstinence, adjusting for MKPs' own reports.**

**Parent and Adolescent Religious Service Attendance.** Although MKP religious service attendance was not associated with adolescent reports of communication levels, adolescent frequency of attending religious services was associated with higher adolescent-reported frequency of communication about specific topics related to sex and abstinence, adjusting for MKPs' self-reports (Exhibit 3-35, Appendix Table C-4). This finding is consistent with the possibility that more religious adolescents are more likely to pay attention to or understand conversations with their parents about these topics, although as with all the associations reported on this section, there are other possible interpretations.

#### Exhibit 3-35.

#### Estimated Association of Adolescent Frequency of Religious Service Attendance with Odds of More Frequent Adolescent-Reported Parent-Adolescent Communication about Specific Topics Related to Sex and Abstinence (N=734)

(Adjusted for parent-reported frequency of communication.)



\* Statistically Significant at 95% Confidence Level

***Adolescents whose MKPs reported greater self-perceived control over adolescent sexual behavior reported higher frequency of conversation with MKPs about specific topics related to sex and abstinence.***

**Parent Attitudes.** Perceived MKP-reported parent control over adolescent behavior was associated with greater average frequency of adolescent-reported conversation across seven specific topics related to sex and abstinence, adjusting for MKPs' own reports (in particular, the basics of how babies are made, pregnancy, or birth, waiting to have sexual intercourse until marriage, and how religious values relate to sexual intercourse, as seen in Appendix Table C-4), though it had no influence on adolescent-reported general communication levels (Appendix Table C-3). This finding is consistent with the hypothesis that parents who believe they exercise greater control over their adolescents' behavior are more effective at communicating specific sex and abstinence messages to their adolescents.

Although more restrictive parent views on some attitudinal measures were associated with lower adolescent-reported general communication levels and frequency of communication about specific topics, this result was not consistent across adolescent-reported outcomes. For example, adolescents whose MKPs expressed more restrictive views on the "At your adolescent's age, sexual intercourse is a good thing to do" measure reported lower levels of communication about how to have good romantic relationships, how to resist pressures to have sexual intercourse, and how religious values relate to sexual intercourse, as well as across the seven communication measures for specific topics considered jointly (Appendix Table C-4). Adolescents whose parents disagreed that it would be okay for their adolescent to engage in sexual intercourse if they planned to marry their partner also reported lower likelihood of having talked to MKPs about sexual values in the past year and lower general communication levels with MKPs on average (Appendix Table C-3), but higher frequency of conversations about how religious values relate to sexual intercourse (Appendix Table C-4). No statistically significant differences in adolescent-reported communication levels were found for other parent attitudinal measures.

***Adolescents who reported closer overall relationships with their MKPs reported higher frequency of communication with MKPs about specific topics related to sex and abstinence, adjusting for MKPs' own reported communication levels.***

***Relationship Quality.*** Adolescents who reported closer overall relationships with their MKPs reported higher frequency of communication with MKPs about specific topics related to sex and abstinence, adjusting for MKPs' own reported communication levels. This finding is suggestive that adolescents who are closer to their parents may be more attentive to this type of conversation. However, it is important to note that of the three adolescent-reported relationship quality measures and the three MKP-reported relationship quality measures, only this adolescent-reported closeness of relationship measure was consistently associated with differences in communication levels.

***Adolescent exposure to information about sex, abstinence, and sexual values in classes or programs was strongly associated with higher adolescent-reported communication levels, adjusting for MKPs' own reports.***

***Adolescent Exposure to Information about Sex, Abstinence, and Sexual Values in Classes or Programs.*** There were no differences in adolescent-reported communication levels associated with MKP-reported adolescent participation in a class, program, or event that talked about waiting to have sexual intercourse until marriage.

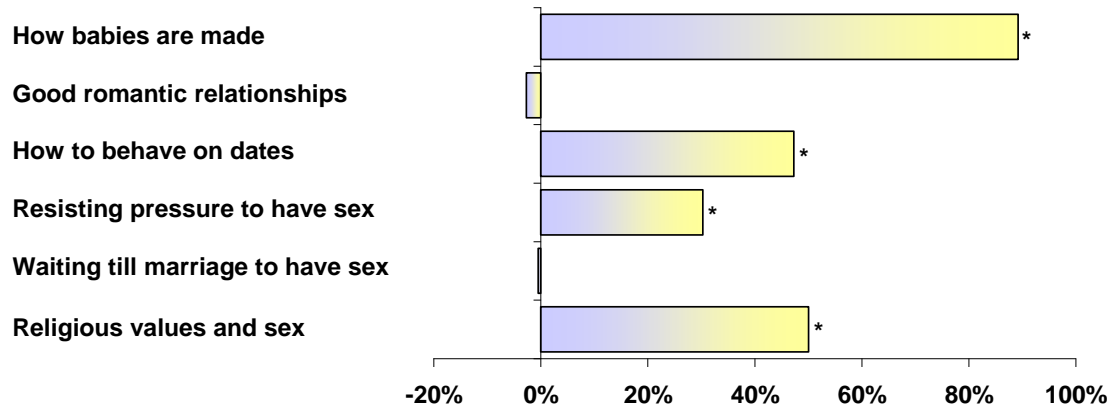
However, adolescent-reported exposure to some types of specific information about sex, abstinence, and sexual values in the context of a class or program was associated with higher adolescent-reported general communication levels, and more frequent adolescent-reported conversations with MKPs about specific sex- and abstinence-related topics. For four of the six specific topics considered (the basics of how babies are made, pregnancy, or birth; how to behave on dates; how to resist pressures to have sexual intercourse; and how religious values relate to sex), learning about a topic in a class or program was associated with an increase in the adolescent-reported frequency of conversation about the directly corresponding topic with their MKP (Exhibit 3-36). Three of those four topics (the basics of how babies are made, pregnancy, or birth; how to behave on dates; and how religious values relate to sex) were also associated with increases in adolescent-reported communication about the set of all topics considered jointly. Finally, for two topics (how to have good romantic relationships and waiting to have sexual intercourse until marriage) we did not find any statistically significant positive associations with any adolescent-reported communication measures (Appendix Table C-4).

One might infer from these associations that exposure to some specific types of information about sex, abstinence, and sexual values in classes or programs either increases adolescent attention level to conversations with parents about similar subjects, or, alternatively, increases adolescent understanding of the concepts being communicated to them by parents.

**Exhibit 3-36.**

**Estimated Association of Adolescent Exposure to Specific Topics Related to Sex and Abstinence with Odds of More Frequent Average Levels of Adolescent-Reported Parent-Adolescent Communication about Specific Topics Related to Sex and Abstinence (N=734)**

(Adjusted for parent-reported frequency of communication.)



\* Statistically Significant at 95% Confidence Level

### 3.2.2. Adolescent Attitudes about Sex and Abstinence

From a policy perspective, perhaps the most important research objective of this study is to identify the factors associated with differences in adolescent attitudes about sex and abstinence. Although we did not collect data on adolescent sexual *behaviors*, we assume that adolescent attitudes about sex and abstinence are key intermediate determinants of these behavioral outcomes.

#### Modeling Adolescent Attitudes about Sex and Abstinence

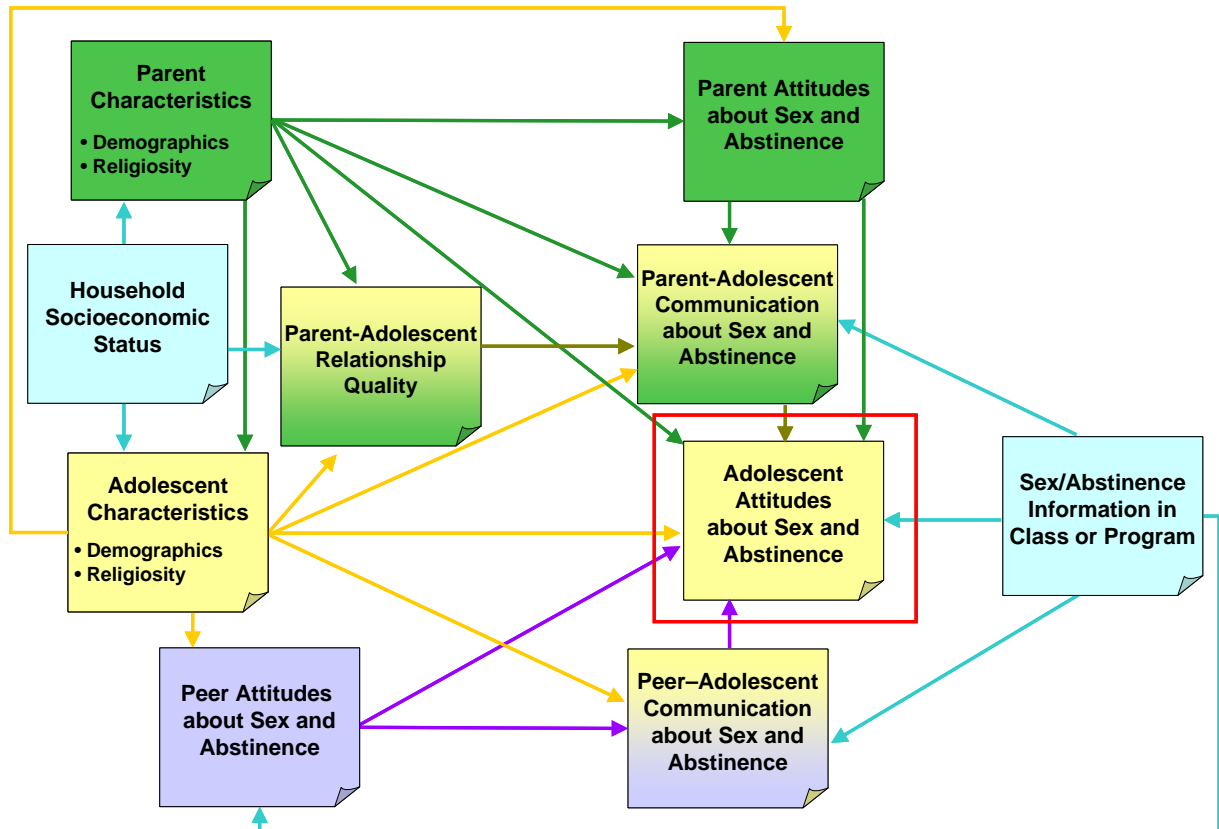
Our conceptual model implicitly assumes that adolescent attitudes about sex and abstinence are, as a whole, more subject to external influences than their parents' views. Informal communication with parents and peers, as well as exposure to information about sex and abstinence in the context of classes or programs, are each likely to exert separate (and, in some cases, conflicting) influences on overall adolescent views. In addition, as discussed in the literature review, the relative strength of each of these influences may differ by adolescent age, gender, or other characteristics.

Exhibit 3-37 depicts our overall conceptual model of the many factors driving adolescent attitudes about sex and abstinence. In previous sections, we have discussed in detail two of the main hypothesized pathways of influence: parents and peers. Parent and adolescent characteristics feed into parent attitudes and overall parent-adolescent relationship quality, which in turn drive levels of parent-adolescent communication about sex and abstinence. In parallel fashion, peer and adolescent characteristics influence peer-adolescent communication levels. It is through these two pathways that peers and parents are hypothesized to exert influences, both direct and indirect, on adolescent views.

The third hypothesized pathway of influence in our model is exposure to information about sex and abstinence in the context of a class or program. As discussed elsewhere in this report, adolescent

exposure to specific types of information about sex and abstinence in a class or program was correlated with higher levels of communication about sex and abstinence with both parents and peers. In addition to this indirect pathway, we also hypothesize that participation in classes, programs, or events providing information about sex, abstinence, or sexual values may directly influence attitudes among participating adolescents.

**Exhibit 3-37. Adolescent Attitudes Conceptual Model**



As described in greater detail in Section 2.3 and Appendix B, we built up our analytical model in a series of sequential steps designed to identify both direct and indirect associations. We began by testing each hypothesized direct association in the model via a series of logistic regressions. (For some associations, this step had already been performed in prior analyses described in Appendix C.) For each group of related outcomes, we then used seemingly-unrelated regression techniques to test whether explanatory variables were jointly associated with the outcomes considered as a whole.

When a statistically significant joint association was found for at least one explanatory variable in a group, e.g. between at least one parent attitude measure and general adolescent attitudes about sex and abstinence considered as a whole, we retained that group of explanatory variables in the final



model.<sup>10</sup> We rejected the null hypothesis of no direct association for each group of variables tested in this manner; that is, we found evidence that each of the theorized direct associations in the conceptual model in fact existed in our data.

We next tested each of the theorized *indirect* associations by re-running the analysis for each relevant set of dependent variables, adding one group of intermediate outcome variables at a time to the specification, in order to ascertain to what extent the observed relationships were partially or entirely mediated through associations with intermediate factors. The last step was then to run a series of logistic regressions based on the full model, including all factors hypothesized to have a direct or an indirect influence on outcomes.<sup>11</sup>

## Results

In the remainder of this section, we present key findings about factors independently associated with differences in adolescent attitudes about sex and abstinence. Appendix Tables C-6 – C-8 report estimated odds ratios for the model specification described above for each set of adolescent attitude measures.

### ***Adolescents with older MKPs reported more restrictive attitudes about their own sexual behavior and greater perceived parental control.***

**Parent Age.** Although general attitudes about sex and abstinence were not associated with MKP age (Appendix Table C-6), adolescents with older MKPs reported more restrictive attitudes about their own sexual behavior (Appendix Table C-7), and felt that their parents were more able to prevent them from engaging in sexual activity (Appendix Table C-8). Interestingly, we found more conservative general attitudes and lower levels of parent-adolescent communication for older MKPs (Appendix Tables C-9 – C-11 and C-14 – C-19; see Appendix C for a more detailed discussion of these results); these findings in conjunction with the observed relationship between MKP age and more restrictive adolescent attitudes suggest that older parents may successfully transmit their views by means other than explicit communication about sex and abstinence.

Our intermediate nested analyses showed that this relationship was greater in magnitude and statistical significance in specifications controlling for adolescent age. Since older parents tend to have older adolescents, and since, as will be seen below, older adolescents tend to have more permissive attitudes about their sexual activity, failing to adjust for adolescent age will thus tend to understate the independent association between parent age and adolescent attitudes. Similarly, adjusting for parent communication levels, which as noted above are lower on average for older MKPs, also increased the magnitude of the MKP age association. Finally, adjusting for overall

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<sup>10</sup> Because we were more concerned about the possibility of rejecting a hypothesized association that actually exists (also known as a type II error) than about erroneously identifying a false positive association (a type I error), we used a less stringent 90% confidence level in evaluating statistical significance in our model-building procedures.

<sup>11</sup> While for the sake of brevity we present only results for full model here, where appropriate we discuss the results of the nested model-building specifications in order to shed light on intermediate relationships.

relationship quality diminished the size of the estimated association, since older MKPs and adolescents reported slightly poorer relationship quality overall.

**Parent Gender.** The gender of the MKP responding to the survey had no consistent influence on attitudes about sex and abstinence reported by adolescents. This finding is unsurprising, since the MKP is not necessarily the only parent in the household; adjusting for other factors, one would not therefore expect to find a statistically significant association.

**Parent Race/Ethnicity.** In our intermediate nested analyses including MKP race/ethnicity, but not separately adjusting for adolescent race/ethnicity, we found slightly more permissive attitudes about sexual behavior among adolescents with non-Hispanic black MKPs. However, in the full model, we found consistently *less* permissive attitudes among adolescents whose MKPs were black (Appendix Table C-7).

This finding is explained by the inclusion of both MKP and adolescent race/ethnicity in the analytic model. As discussed in greater detail below, black adolescents reported more permissive attitudes about their own sexual behavior; since black parents are more likely to have black children, failing to adjust for adolescent race/ethnicity will result in false attribution of this greater permissiveness to the race/ethnicity of the MKP. In fact, it appears that in this case the more restrictive association with non-Hispanic black MKP race/ethnicity opposes the more permissive associations with the adolescent's own black race/ethnicity.

Similarly, in intermediate specifications accounting only for either MKP or adolescent race/ethnicity separately, Hispanic race/ethnicity for both groups was associated with less conservative general adolescent attitudes about sex and abstinence. However, in the full model and in intermediate specifications containing both MKP and adolescent race/ethnicity covariates simultaneously, we found that only MKP Hispanic race/ethnicity had a statistically significant effect on general attitudes about sex and abstinence, while only adolescent Hispanic race/ethnicity had a statistically significant effect on adolescent attitudes about their own sexual behavior.

**Language Status.** Language status had no independent influence on adolescent attitudes, adjusting for other factors.

***Adolescents with less-educated MKPs expressed more conservative attitudes about sex and abstinence in general and more restrictive attitudes about their own sexual behavior.***

**Parent & Household Educational Attainment.** Adolescents from households with lower reported maximum educational attainment reported more conservative general views about sex and abstinence (Appendix Table C-6). Similarly, MKP educational attainment was associated with more restrictive adolescent attitudes about their own sexual behavior (Appendix Table C-7).

***Adolescents from single-parent households had less conservative general attitudes about sex and abstinence.***

***Marital Status and Single Parenthood.*** Although MKP marital status had no statistically significant effect on adolescent attitudes, adolescents from single-parent households expressed less conservative views.

***Higher household income was associated with more conservative general adolescent attitudes about sex and abstinence and more restrictive adolescent views about their own sexual behavior.***

***Household Income.*** Although higher income was associated with less conservative attitudes about sex and abstinence among MKPs (Appendix Tables C-9 – C-11), it predicted more conservative attitudes among adolescents in our sample. Our intermediate regression specifications did not indicate that this finding was mediated through intermediate outcomes such as parent-adolescent relationship quality or communication levels. Household income thus appears to have opposing effects among parents and adolescents.

***Geographic Region and Urban Residence.*** Urban residence was associated with more conservative attitudes about sex and abstinence among adolescents (Appendix Table C-6), while living in the South or Midwest predicted more restrictive adolescent attitudes about their own sexual behavior (Appendix Table C-7).

***Older adolescents had more conservative general attitudes about sex and abstinence, but simultaneously expressed less restrictive attitudes about their own sexual behavior.***

***Adolescent Age.*** When asked about views of their own sexual behavior, older adolescents reported significantly more permissive attitudes than their younger counterparts (Appendix Table C-7). Since this series of statements explicitly asked adolescents to assess appropriate behavior at their current age, this finding is unsurprising. However, older adolescents were simultaneously more likely to express conservative general attitudes about sex and abstinence (Appendix Table C-6). It is unclear why this would be so, but these results seem to indicate that adolescents' standards for their own sexual behavior may differ from their more general beliefs. This generally bears out our findings in the descriptive analyses of adolescent attitudes presented in the previous section.

***Male adolescents expressed consistently less conservative general views about sex and abstinence and less restrictive views about their own permissible sexual behavior.***

***Adolescent Gender.*** In our analyses of parent attitudes, we found that MKPs expressed significantly more permissive views about male adolescents' sexual behavior than they did for females (Appendix Table C-10). Male adolescents similarly reported more permissive attitudes about their own sexual behavior (Appendix Table C-7), and less conservative attitudes about sex and abstinence in general (Appendix Table C-6). Our findings as a whole strongly support the hypothesis that attitudes among both parents and adolescents differ by adolescent gender.

MKPs also reported lower perceived levels of control over their male adolescents' behavior (Appendix Table C-11), but adolescents themselves reported no significant differences in perceived level of parental control associated with gender (Appendix Table C-8).

***Black and Hispanic adolescents reported significantly more permissive views about their own sexual behavior.***

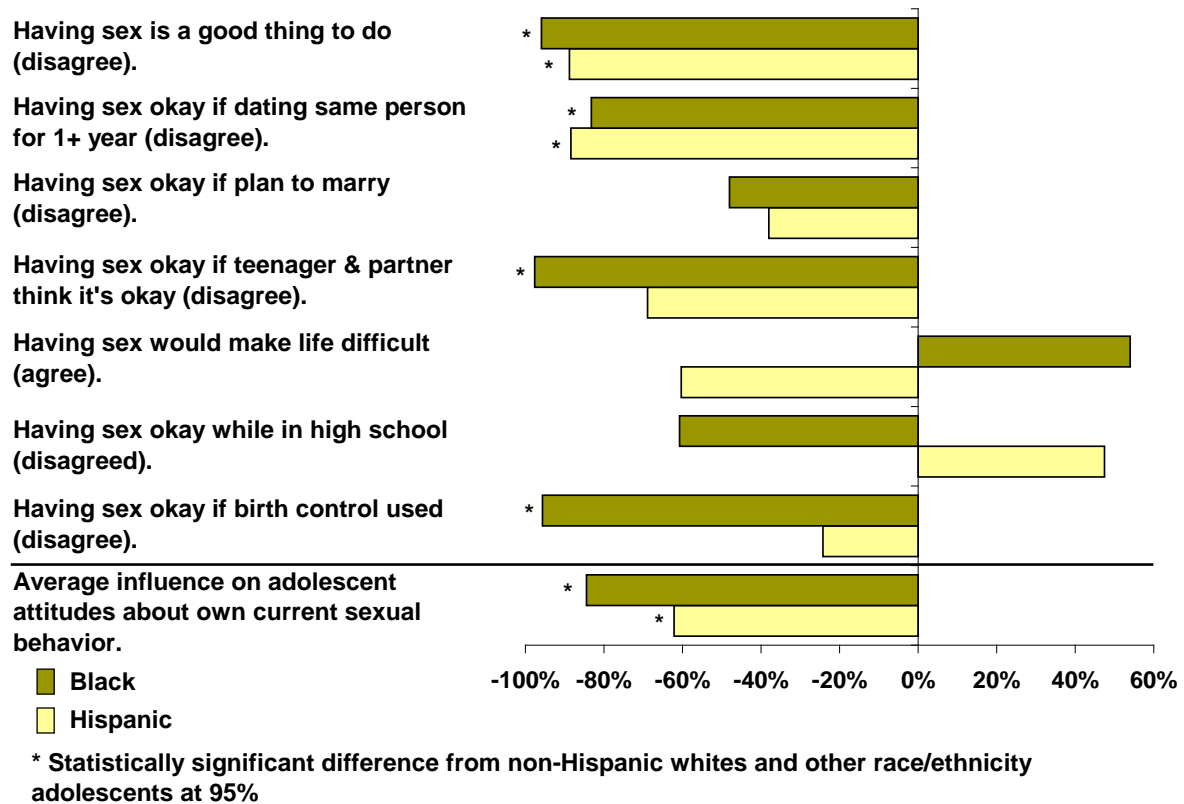
***Adolescent Race/Ethnicity.*** Although, adjusting for the influence of MKP race/ethnicity and other factors, there were no statistically significant differences in general attitudes about sex and abstinence by race/ethnicity, black and Hispanic adolescents were significantly more likely to express permissive views about their own sexual behavior than non-Hispanic white and "other" race/ethnicity adolescents (Exhibit 3-38, Appendix Table C-7). Among black adolescents, this effect stands in contrast to the more restrictive views about sex and abstinence (Appendix Table C-10) and greater parent levels of communication with adolescents about sex and sexual values (Appendix Tables C-14 – C-19) reported by black MKPs.

For Hispanics, in contrast, MKP and adolescent influences on attitudes appear to align, with both groups expressing relatively more permissive views than non-Hispanic white or "other" racial/ethnic groups.

**Exhibit 3-38.**

**Estimated Association of Adolescent Race/Ethnicity with Odds of More Restrictive Adolescent Attitudes about Permissible Sexual Behavior (N=715)**

(Omitted groups are non-Hispanic whites and non-Hispanic “other” race/ethnicity.)



***Unlike MKP attitudes, which are associated with both MKP and adolescent religious service attendance, adolescent attitudes about sex and abstinence are associated only with adolescent frequency of religious service attendance.***

***Parent and Adolescent Religious Service Attendance.*** We argued previously that MKP and adolescent religious service attendance considered together may more accurately reflect overall household religiosity than either measure alone. In analyzing associations between MKP and adolescent religiosity with parent attitudes and with parent-adolescent communication, we indeed found that MKP and adolescent measures appeared to be separately and independently associated with differences in MKP outcomes (Appendix Tables C-9 – C-19).

However, for adolescents, only adolescent-reported frequency of religious service attendance appears to be significantly associated with differences in attitudes about sex and abstinence (Appendix Tables C-6 and C-7). Any bivariate association between parent religiosity and adolescent attitudes thus appears to be entirely mediated indirectly through the association between MKP attendance of religious services and adolescent attendance of religious services.

***More conservative MKP attitudes were broadly associated with more conservative adolescent attitudes.***

***Parent Attitudes about Sex and Abstinence.*** In general, more conservative MKP attitudes about sex and abstinence were associated with more conservative adolescent attitudes, though this influence varied somewhat across parent attitude measures and across adolescent attitudinal outcomes.

MKPs who said that sex before marriage was against their values had adolescents with more conservative general attitudes about sex and abstinence, as did MKPs who reported that at their adolescents' current age, having sexual intercourse would cause problems or make life difficult and MKPs who disagreed that, at their adolescents' current age, it would be okay for them to have sexual intercourse if they had been dating their partner for one year or longer. Adolescents with MKPs who reported a greater self-perceived degree of control over their adolescents' behavior similarly reported more conservative general views (Appendix Table C-6). Perceived parental control was also associated with more restrictive attitudes among adolescents about their own sexual behavior, as was having an MKP who reported that, at the adolescent's age, having sex right now would make life difficult (Appendix Table C-7).

***Overall parent-adolescent communication levels did not influence adolescent attitudes, but frequency of discussion of some specific topics related to sex and abstinence had some statistically significant effects.***

***Parent-Adolescent Communication.*** We did not find a statistically significant relationship between adolescent attitudes and overall parent-adolescent levels of communication about sex and abstinence. However, frequency of discussion about some specific topics related to sex and abstinence did appear to influence adolescent views.

In particular, adolescents whose MKPs talked more frequently with them about sexually transmitted diseases and HIV/AIDS reported more conservative general attitudes about sex and abstinence overall (Appendix Table C-6), as well as more restrictive attitudes about their own sexual behavior (Appendix Table C-7). Adolescents whose MKPs reported higher frequency of communication about how religious values relate to sexual intercourse expressed similarly more conservative views (Appendix Table C-6).

Interestingly, however, two communication topic measures were associated with *less* conservative adolescent attitudes: frequency of conversation about how to resist sexual intercourse, and frequency of conversation about how to have good romantic relationships (Appendix Table C-6). It seems clear from these findings that the influence of parent-adolescent communication on adolescent attitudes depends heavily on not just the general frequency of conversation about sex and abstinence, but on the specific content being communicated.

***Adolescents with more conservative peers expressed more conservative attitudes about sex and abstinence and more restrictive views about their own sexual behavior.***

***Peer Attitudes.*** It is clear from our results that peer attitudes are associated with differences in adolescent attitudes. Adolescents who reported more conservative attitudes among their closest

friends expressed significantly more conservative general views about sex and abstinence (Appendix Table C-6), as well as more restrictive views about their own sexual behavior (Appendix Table C-7).

This effect seems to be more consistent across outcome categories and individual adolescent attitude measures than the effect of MKP attitudes. As a whole, however, our findings broadly support the hypothesis that both parent and peer attitudes are independently associated with differences in adolescent views about sex and abstinence.

***Higher levels of peer-adolescent communication about sex were associated with less conservative adolescent attitudes.***

***Peer-Adolescent Communication.*** More frequent peer-adolescent communication about sexual values (“what is right or wrong about having sex”) was associated with less conservative general adolescent attitudes about sex and abstinence (Appendix Table C-6). This finding stands in contrast to the overall impact of peer attitudes on adolescent views discussed above.

We speculate that, adjusting for overall peer attitudes about abstinence as we have in our model, more frequent discussion of sexual values may occur between peers and adolescents in environments where they are exposed more frequently to sexual content or behavior; in other words, that adolescents and peers talk more about sex when they have something concrete to talk about. In such a scenario, one might expect to find less conservative adolescent attitudes associated with more frequent adolescent-peer conversations about sexual values, as we do here. However, it should be stressed that this is only one of many possible hypotheses consistent with this finding.

***Adjusting for other factors, MKP-reported adolescent participation in the past year in a class, program, or event that talked about waiting to have sexual intercourse until marriage was not associated with any differences in adolescent attitudes about sex and abstinence. However, there were some statistically significant associations observed between adolescent attitudes and adolescent-reported exposure to some types of specific information about sex and abstinence in a class or program.***

***Adolescent Exposure to Information about Sex, Abstinence, and Sexual Values in Classes or Programs.*** There were no statistically significant associations between adolescent attitudes and MKP-reported adolescent participation in a class, program, or event that talked about waiting to have sexual intercourse until marriage in past year.

However, there were some statistically significant associations observed between adolescent attitudes and adolescent-reported exposure to some types of specific information about sex and abstinence in a class or program. Adolescents who reported that they had participated in a class or program where they learned about waiting until marriage to have sexual intercourse, or about how religious values relate to sex, reported more conservative attitudes general attitudes about sex and abstinence (Appendix Table C-6), but no differences in restrictiveness of their attitudes about permissible sexual behavior. Adolescents who reported they had learned about resisting pressure to have sex in a class or program reported more restrictive views about permissible sexual behavior for these seven attitudinal measures considered jointly. However, adolescents who reported learning about how to have good romantic relationships in a class or program reported *less* restrictive views (Appendix Table C-7).

Because these results vary in statistical significance, direction, and magnitude, it is important to exercise caution in interpreting any individual observed association. Additionally, associations should not be considered indicative of causal relationships; we cannot ascertain from these relationships whether differences in adolescent attitudes influence the likelihood that they participated in a class or program in which they were exposed to particular messages about sex and abstinence, or vice versa. Finally, as discussed above, we cannot ascertain based on these outcome measures whether an adolescent participated in a Title V or other abstinence education program, or in some other context, so we cannot draw inferences from these findings about the effects of these programs on adolescent attitudes. However, the observed associations may indicate directions for additional research in the context of a formal evaluation.

### **Moderating Variables**

As discussed in greater detail in the literature review, there is substantial evidence in past research that the interplay between peer and parent influences differs by adolescent age (Hunter, 1985; Papini & Farmer, 1990) and gender (Papini & Farmer, 1990). We therefore wished to test the hypothesis that age and gender act as moderating variables in this context – that is, to test whether age and gender influence the direction and strength of the associations of adolescent attitudes with parent and peer characteristics.

In order to test this hypothesis, we introduced a series of adolescent age and gender interaction terms with the peer and parent attitude and communication variables into our model specification. Statistically significant associations between such interaction terms and adolescent attitudes would imply that age and gender indeed moderate associations between attitudes and these parent and peer factors.

***In contrast to past literature, we found evidence that the association between general parent attitudes about sex and abstinence and general adolescent attitudes increased with age.***

Recall from our discussion above that adolescents whose parents reported more conservative general attitudes about sex and abstinence also reported more conservative general views. Interestingly, and in contrast to findings in past literature, we find that this effect tends to increase with adolescent age.

However, the influence of adolescent age on associations for other peer and parent influences is less clear. Although the influence of peers rose with age for the peer attitude measure based on adolescent reports of friends' attitudes about sex before marriage, it fell with age for the peer attitude measure based on adolescent reports of how many of their closest friends think it is okay for people of their age to have sex. Similarly, no consistent influences of age on the association between peer or parent communication and adolescent attitudes were found.



***The effects of peer attitudes and communication levels appear to be stronger for male adolescents than for females.***

We found strong evidence that peer influences were more important for male adolescents than for females, with interactions between male gender and all three peer measures positive and statistically significant for both general adolescent attitudes and adolescent attitudes about their own sexual behavior.

## 4. Conclusions

We find that parents and adolescents generally oppose pre-marital sex. However, adolescents tend to express more permissive attitudes about their own sexual behavior than their surveyed parents. Social and cultural norms seem to be significant predictors of adolescent attitudes, with persistently more permissive views expressed both by and about males than females. We additionally found evidence of significant differences by race and ethnicity, with variation not only in overall restrictiveness of attitudes, but in patterns of attitudes by specific contexts of sexual behaviors.

In general, our findings indicate that adolescent attitudes about sex and abstinence are more subject to influence from parents and peers than to messages about sex and abstinence delivered in the context of classes or programs. However, adolescent receipt of information about sex, abstinence, and sexual values in a class or program was associated with increased levels of adolescent communication about sex and abstinence with both parents and peers. Furthermore, adolescent exposure to some specific topics related to sex and abstinence in a class or program appeared to increase the likelihood that adolescents heard and reported similar messages about sex and abstinence delivered by their parents.

Note that our study did *not* examine a number of factors that might also be influential in determining adolescent attitudes about sex or abstinence, such as exposure to messages from advertising, entertainment, or other media, and relationships with non-parental family members such as siblings or other relatives. It is additionally important to note that this multivariate analysis does not constitute an evaluation of the influence of abstinence or sex education on adolescents. Although we hypothesize a direction of influence for each relationship included in our conceptual model in order to guide our analytic approach, empirical analyses can test only for correlational relationships, not causative influences. Readers are thus encouraged to avoid making inferences about causation based on the findings presented here.

Conditional on these caveats, our findings suggest several things. First, the significant disparities in attitudes and communication levels across subgroups defined by race/ethnicity, gender, age, and socioeconomic characteristics suggest that different kinds of abstinence messages may resonate differently across different groups. Secondly, given the multiple pathways of influence on adolescent attitudes about sex and abstinence through interactions with parents and peers, broad-based community initiatives designed to influence attitudes and behaviors across all these groups may be more successful than programs targeting only one subgroup or setting. Similarly, given the evidence that hearing messages about sex and abstinence from more than one source increases the likelihood that adolescents hear and report these messages, a multi-pronged approach to delivering these messages to adolescents will likely be more influential than approaches focusing on a single message source. Furthermore, the study shows that surveyed parents are generally comfortable with this type of strategy, with the majority favoring abstinence messages delivered in places of worship, doctor's offices, schools, and community organizations.

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## **Appendix A. Statistical and Sampling Methodology**

### **A.1. Sampling**

In this section, we provide a detailed description of the sampling design and procedures for this public opinion survey of parents and adolescents. Additionally, we describe the construction of analytic weights used to produce results generalizable to the United States population of adolescents.

#### **A.1.1. Overview of Sample Design**

The sample was designed to yield a national probability sample of eligible adolescents between 12 and 18 years of age.

As described in greater detail below, list-assisted random-digit-dialing (RDD) sampling was used as follows to obtain a probability sample of households with landline telephones.<sup>12</sup> We used the GENESYS Sampling System to draw the initial RDD sample. The sample was stratified by the four Census Regions and by metropolitan versus nonmetropolitan statistical area, in order to ensure adequate coverage in each of the eight resulting strata. After drawing the initial sample of telephone numbers, the list was processed through GENESYS-CSS in order to remove as many nonworking and business numbers from the sample as possible before providing the list to interviewers.

The sample was then divided into replicates (random subsamples) to facilitate its release on a controlled flow basis to interviewers. This approach ensured that the target number of interviews was achieved without having to load the entire sample into the CATI system.

Finally, we reverse-matched the list against a commercial database of residential addresses. This matching allowed for the mailing of advance letters to a high proportion (over 65 percent) of households in the RDD sample.

We first screened each household contacted in order to eliminate households without one or more eligible adolescents aged 12 to 18 years in current residence. In each eligible sample household identified, one adolescent between 12 and 18 years of age was then randomly selected. An attempt was first made to interview a parent/guardian who was identified as the “most knowledgeable parent.” Consent was then sought to interview the randomly-selected adolescent. The final sample of paired interviews (adolescent/parent) consisted of exactly 1,000 completed cases.

#### **A.1.2. List-Assisted Random-Digit-Dialing (RDD)**

The list-assisted method is similar to the traditional Mitofsky-Waksberg method of selecting RDD samples. Both methods construct a frame of “banks,” each of which contains 100 consecutive telephone numbers. However, the two methods differ in their approach to the first stage of sampling, which classifies each resulting bank as either working or nonworking.

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<sup>12</sup> Households without telephone service and households with only cellular telephone service were necessarily excluded from the study.

The Mitofsky-Waksberg method randomly chooses a number from each randomly-selected bank. The selected number is dialed; if it is determined to be a household, the bank is considered to be a working bank, and the remaining numbers in the bank are eligible to be sampled. If the selected number is a business, institution, or nonworking number (i.e., an out-of-scope telephone number), the entire bank is considered nonworking and deleted from the sample.

In contrast, the list-assisted method classifies banks as working or nonworking by comparing each telephone number in the bank with directory-listed residential numbers. If at least one telephone number included in a bank is a directory-listed residential number, the bank is classified as a working bank and thus eligible for sampling; if the bank contains no directory-listed residential numbers, it is classified as a nonworking bank and thus excluded from the sample.

The national sampling frame consists of banks of 100 consecutive telephone numbers within the prefix areas currently in service. For example, the numbers from 617-492-7100 to 617-492-7199 constitute a working bank in the 617-492 prefix area.

To exclude banks that contain zero directory-listed residential telephone numbers, the GENESYS Sampling System (a proprietary product of Marketing Systems Group) uses a file of directory-listed residential numbers from Donnelley Marketing Information Services (DMIS). The result is a file that lists the remaining banks (the “1+ working banks”).

A random sample of complete ten-digit telephone numbers is then drawn from the 1+ working banks in such a way that each number has a known and equal probability of being selected. The sample is then randomly segmented into replicates as discussed below.

The list-assisted sampling frame was stratified by the four Census Regions (Northeast, Midwest, South, and West) and by Metropolitan Statistical Area versus Micropolitan Statistical Area/Not located in a Metropolitan or Micropolitan Statistical Area. This formed a total of eight strata. The total sample size of telephone numbers was allocated across the eight strata to yield an equal probability of selection for each telephone number in the sample.

### **A.1.3. Release and Management of the Sample**

We proceeded as follows in coordinating management of the sample. The initial sample was first divided into replicates (random subsamples). This allowed us to control the release of the sample in a coordinated fashion, in order to ensure that the target number of interviews was approximately achieved without releasing more sample than needed.

Before a replicate was loaded into the CATI system, several stages of processing removed as many business and nonworking numbers as possible. The released replicates contained 218,000 sample telephone numbers. 117,117 of these numbers were purged as out-of-scope by GENESYS-CSS.

A separate step matched the telephone numbers in the sample against a commercial database to obtain addresses so that advance letters could be sent.



#### **A.1.4. Within-Household Respondent Selection**

The use of random selection within eligible households ensured that the probabilistic nature of the sample design was maintained. The sample was a random sample of households with adolescents between 12 and 18 years. If a household had more than one eligible adolescent in that age range, one was randomly selected to complete the interview.

The approach for selecting the parent/guardian to be interviewed is called the “most knowledgeable parent” approach. Under this approach, we randomly selected an adolescent and then asked to speak with the parent (or guardian) living in the household who was most knowledgeable about the adolescent. It bears emphasis that the most knowledgeable parent approach does *not* produce a national probability sample of parents with a child aged 12-18 years, since the self-identified MKP is not him- or herself randomly selected. The parental data should not therefore be analyzed separately, but only in conjunction with the adolescent data.

The order of the within-household sampling and interviewing was as follows: 1) determine if any eligible persons age 12-18 years are currently residing in the sample household, 2) randomly select one eligible person aged 12-18 years, 3) identify the most knowledgeable parent for the selected adolescent from among the adults living in the household, 4) interview this parent, 5) obtain consent from the parent to interview the selected adolescent, and 6) interview the selected adolescent.

A total of 1,000 paired interviews were completed. There were also 1,052 households in which the parent interview was completed but no interview with the selected adolescent was obtained. The latter set of households is excluded from the analyses to follow.

#### **A.1.5. Weighting Methodology**

We calculated a final sampling weight for each of the 1,000 completed adolescent/parent interview pairs for use in estimation. Developing weights for a random-digit-dialing screening sample is a multi-step process. First, we calculated a base sampling weight equal to the reciprocal of the probability of selection of the sample telephone number.

Second, we made a unit nonresponse adjustment for households in the RDD sample that did not complete the screening interview. We formed weighting classes using the eight sampling strata, with each stratum split into two cells based on whether the sample telephone number had an advance letter mailed. The 16 (8 x 2) nonresponse adjustment factors are shown in Table A-1.

**Table A-1.**  
 **Screener Unit Nonresponse Adjustment Factors**

<b>Census Region</b>	<b>MSA Status</b>	<b>Advance Letter Mailed</b>	<b>Screener Nonresponse Adjustment Factor</b>
Northeast	MSA	Yes	2.15462
Northeast	MSA	No	2.68810
Northeast	Non-MSA	Yes	1.76720
Northeast	Non-MSA	No	2.26562
Midwest	MSA	Yes	1.96707
Midwest	MSA	No	2.47088
Midwest	Non-MSA	Yes	1.69760
Midwest	Non-MSA	No	2.07075
South	MSA	Yes	2.24663
South	MSA	No	2.74457
South	Non-MSA	Yes	1.94124
South	Non-MSA	No	2.12288
West	MSA	Yes	2.44069
West	MSA	No	2.73251
West	Non-MSA	Yes	2.02392
West	Non-MSA	No	2.23214

Third, to account for the random selection of one adolescent from each eligible household, we adjusted the weights for households with completed adolescent interviews based on the number of eligible adolescents in the household.

Fourth, an adjustment for paired interview unit nonresponse involved compensating for the 1,052 eligible households where we completed the parent interview but were unable to complete the adolescent interview, either because consent was not obtained or because the adolescent interview was never completed. We examined all of the demographic and socioeconomic variables collected during the parent interview and found that four individual variables differed between the 1,000 completed paired interviews and the 2,052 total parent interviews:

- 16 nonresponse adjustment categories (Census Region by MSA status by advance letter)
- Gender of the parent
- Race of the parent
- Age group of the parent

We therefore adjusted the weights of the 1,000 paired interviews using raking (discussed in greater detail below) so that the weighted distribution of this sample was consistent with the weighted distribution for all 2,052 parent interviews.

Fifth, we divided the weight of each of the 1,000 paired interviews by the number of voice-use landline telephone numbers in the household.

Sixth, we again used raking, this time to bring the weighted distribution of the 1,000 paired interviews into agreement with population control totals obtained from the 2006 American Community Survey (ACS). The raking margins included the following demographic and socioeconomic variables:

- Census Region
- Gender of the adolescent
- Age in years of the adolescent
- Race/ethnicity of the adolescent
- Highest educational level among all persons in the household

We also collected data during the parent interview on whether the household experienced an interruption in telephone service of one week or longer in the past year. The ACS includes a question to determine if the household has telephone service. We used this information to compensate for the exclusion of households without landline telephone service by adding this as a raking margin. During the raking we truncated the weights of 12 cases that had high weight values.

The final constructed weights sum to 29,137,703 adolescents in the United States. The sample can be used to draw inferences about adolescents in the United States. However, because the parent respondent was not randomly selected, but self-identified as the “most knowledgeable parent,” the sample cannot be used to draw inferences about parents of adolescents in the United States.

#### **A.1.6. Raking**

The adjustment to control totals is sometimes achieved by creating a cross-classification of the categorical control variables (e.g., race by marital status by age group gender) and then matching the total of the weights in each cell to the control total. In other words, the adjustment is made on a cell-by-cell basis and therefore the weighted count in each cell equals the population count for that cell. This approach is generally referred to as poststratification.

However, poststratification can spread the sample thinly over a large number of adjustment cells. This often results in cells that are empty (i.e., no completed interviews were obtained); the only way around this is to collapse cells. Poststratification may also result in extremely large weights for some interviews, which almost always increases the sampling variance of the survey estimates. The use of raking to marginal control totals for single variables (i.e., each margin involves only one control variable) can avoid many of these difficulties.

Raking adjusts a set of data so that its marginal totals match control totals on a specified set of control variables. The term “raking” suggests an analogy with the process of smoothing the soil in a garden plot by alternately working it back and forth with a rake in two perpendicular directions.

The underlying basis of raking is to make the weighted marginal distribution of each marginal control variable in the sample conform to those in the population, without ensuring that the weighted sample and population for each individual cross-tabulation cell conform. In a simple 2-variable example, the marginal totals in various categories for the two variables are known from the entire population, but the joint distribution of the two variables is known only from a sample.

In the cross-classification of the sample, arranged in rows and columns, one might begin with the rows, taking each row in turn and multiplying each entry in the row by the ratio of the population total to the weighted sample total for that category, so that the row totals of the adjusted data agree with the population totals for that variable. The weighted column totals of the adjusted data, however, may not yet agree with the population totals for the column variable.

Thus the next step, taking each column in turn, multiplies each entry in the column by the ratio of the population total to the current total for that category. Now the weighted column totals of the adjusted data agree with the population totals for that variable, but the new weighted row totals may no longer match the corresponding population totals.

This process continues, alternating between the rows and the columns, and close agreement on both rows and columns is usually achieved after a small number of iterations. The result is a tabulation for the population that reflects the relation of the two variables in the sample. Raking can also adjust a set of data to control totals on three or more variables (Battaglia, et al., 2004).

## **A.2. Multivariate Analyses**

The relationship between parent, peer, and adolescent characteristics, communication levels, and attitudes about sex and abstinence as depicted in the conceptual model in Section 1.3 is extremely complex. In testing the posited relationships therein, we faced two major analytic challenges: effectively accounting for both direct and indirect associations, and incorporating multiple outcome measures representing a single conceptual construct of interest.

To address the first challenge, we employed nested multiple regression models, in which groups of explanatory variables are added to the model in sequence in order to determine to what extent each group contributes directly and indirectly to the outcome of interest. To address the second challenge, we applied seemingly-unrelated regression, or “SUR” techniques, which allow us to jointly test hypotheses about groups of outcomes considered as a whole. In the remainder of this section, we describe these techniques in greater detail.

### **A.2.1. Model-Building Using Nested Regressions**

As noted above, many factors in the conceptual model are hypothesized to exert influences on other variables via both direct and indirect pathways. For instance, parent demographic characteristics might influence parent-adolescent communication about sex and abstinence directly, since, for example, male parents may communicate more or less with their adolescents than female parents in general. Additionally, parent demographic characteristics could indirectly influence parent-adolescent communication via an influence on relationship quality. If male parents tend to have better or worse relationships with their adolescents, and poorer relationship quality is associated with lower

frequency of communication, then male parent gender would additionally influence overall communication levels through this alternative pathway.

In building our structural model, we employed nested regressions in order to examine both direct and indirect hypothesized associations. In this analytic technique, groups of variables are sequentially added to a model one at a time. Results from each step in the sequence are then compared, in order to determine whether each explanatory variable is independently associated with the outcome of interest, or whether the association is partially or entirely mediated by its association with other intermediate outcomes.

We began by testing each hypothesized direct association in our model, i.e. those relationships designated by an arrow directly connecting a group of explanatory factors to an intermediate or final outcome in the conceptual model. We performed a series of logistic regressions (binary or ordered, depending on the type of outcome measure) to test each individual association. For each group of related outcomes, we then used seemingly-unrelated regression techniques, described in greater detail in the next section, to test whether explanatory variables were jointly associated with the outcomes considered as a whole.

When a statistically significant joint association was found for at least one explanatory variable in the group, we retained that group of explanatory variables in the final model.<sup>13</sup> In this case, we found evidence that each of the theorized direct associations in the conceptual model in fact existed in our data, although the strength and magnitude of these associations varied across individual variables in each conceptual grouping. However, we cannot tell based on these results alone whether these observed direct associations result from actual cause-and-effect relationships, or whether they are in fact induced by correlations with other variables not included in these specifications.

The next step was to test each of the theorized *indirect* associations. As an illustration, consider again the example of the relationship between parent characteristics and parent-adolescent communication outcomes as described above. In our tests of direct associations in the first step of our analyses, we already showed that parent characteristics were directly associated as hypothesized with both parent-adolescent communication and with general parent-adolescent relationship quality. We next wished to determine whether the observed association between parent characteristics and parent-adolescent communication was in fact partially or entirely mediated through its intermediate association with relationship quality.

We therefore performed the next stage of the nested regression procedure, comparing the results of a regression of parent-adolescent communication measures on both parent characteristics and relationship quality measures to the results of the regression where parent characteristics alone were included as explanatory factors. If the magnitude and/or statistical significance of the relationship between parent characteristics and the communication outcome were reduced in the specification including relationship quality, we would conclude that this association was indeed mediated through

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<sup>13</sup> Because we were more concerned about the possibility of rejecting a hypothesized association that actually exists (also known as a type II error) than about erroneously identifying a false positive association (a type I error), we used a less stringent 90% confidence level in evaluating statistical significance in our model-building procedures.

its association with parent characteristics on relationship quality. If, in contrast, the magnitude and/or statistical significance of the association were unchanged, we would instead conclude that parent characteristics was directly associated with on parent-adolescent communication, independent of its relationship with overall parent-adolescent relationship quality.

Finally, we considered whether relationships might differ by type of adolescent. For example, as described in the literature review, older adolescents have been found to be more sensitive to the influence of peer attitudes than younger adolescents. We therefore estimated a version of the empirical model including interaction terms for age and gender to determine whether associations of peer and parent characteristics with adolescent attitudinal and communication measures was thus moderated by adolescent characteristics.

In this way, we sequentially built up our empirical model of factors determining peer, parent, and adolescent attitudes and communication levels related to sex and abstinence. It is important to note that our analyses implicitly assume that directions of causality as posited in the underlying conceptual model are correct. Interpretation of the empirical results rests on this key assumption; in its absence, we can only speculate as to the causes of the observed associations.

For the sake of brevity, we report results only for the full model including all covariates, but where relevant in the text we discuss intermediate specification findings in order to shed light on the mechanisms by which various explanatory factors exert their influence on outcomes.

### **A.2.2. Joint Hypothesis Testing**

As described above, we performed separate logistic regression analyses to test direct and indirect associations between hypothesized explanatory factors and individual intermediate and final outcome variables. This estimation procedure provided multiple estimates for each explanatory covariate – one for each outcome measure. Although each of these individual results may be independently informative, interpretation of these large numbers of estimates presented a formidable challenge, particularly when effects varied in direction, magnitude, and statistical significance across measures.

In order to reduce the dimensionality of the problem, we therefore averaged effects over groups of related outcome measures, identified using principal components analysis as described in Chapter 2. This yielded a single average effect measure for each broad outcome category.<sup>14</sup> In order to test statistical hypotheses related to this estimator, we used seemingly-unrelated regression (SUR) techniques to estimate cross-equation parameter covariances. This method allowed us to derive a sampling variance for the average effect estimator, which formed the basis for all subsequent hypothesis tests.

In the remainder of this section, we describe in detail the structural model and the approach used to deriving our SUR estimator.

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<sup>14</sup> In tables, these averages, like those for individual estimated effects, are reported in their exponentiated form and may thus be interpreted as adjusted odds ratios.

**Logistic regression specifications.** We begin with details of our logistic regression specifications. Logistic regression is a standard technique used when the outcome variable is reported as a binary or ordered categorical variable.

When there are only two possible response categories for a variable (e.g. “yes” and “no,” or “agree” and “disagree”), binary logistic regression is the appropriate analytic technique. A binary logistic regression model for each binary outcome  $y_i$  as a function of  $J$  explanatory covariates  $x_1, x_2, \dots, x_J$  is specified as follows:

$$\Pr(y_i = 1 | x_1, x_2, \dots, x_J) = \frac{1}{1 + e^{-(\beta_{0i} + \beta_{1i}x_1 + \beta_{2i}x_2 + \dots + \beta_{Ji}x_J)}} ,$$

where  $\beta_{0i}$  is a constant term and  $\beta_{1i}, \beta_{2i}, \dots, \beta_{Ji}$  are regression coefficients for each of the  $J$  covariates in the model. As described in greater detail in the introduction to Section 4, when these regression coefficients are presented in their exponentiated form (i.e.,  $e^{\beta_{ji}}$ ), they can be interpreted as adjusted odds ratios.

When there are three or more response categories for an outcome variable, ordered logistic regression is the standard approach. The essential idea underlying ordinal logistic regression is that the categorical variable can be re-expressed as a series of binary variables based on internal cut points in the original ordinal scale. For example, a four-point scale variable  $z_i$  can be expressed as a series of three binary variables  $z_{ik}^*$  ( $k=1,2,3$ ) where each binary variable is defined to equal zero if  $z_i \leq k$  and one if  $z_i > k$ .

We can then consider each of the individual binary logistic regression models associated with the transformed binary outcome variables. A key assumption of the ordered logistic model is that the regression coefficients  $\beta_{1i}, \beta_{2i}, \dots, \beta_{Ji}$  are the same across all these binary models and thus these estimates are pooled across the set of individual regressions. For this reason, the ordered logistic model is sometimes referred to as the “proportional odds” model.<sup>15</sup> The binary models thus differ only in their estimated constant terms  $\beta_{0i}$  (Brant, 1990).

As with coefficients in the binary logistic models, ordered logistic coefficients in their exponentiated form can be interpreted as adjusted odds ratios. However, for ordered logistic models these odds ratios represent the odds of moving from one response category to the next highest response category rather than simply from one binary response category to the other.

**Seemingly-Unrelated Regression.** Applying the binary and ordered logistic regression models produces results for each individual outcome measure tested. However, as described above, in many cases we collected data for multiple outcome measures intended to measure a single construct. For

<sup>15</sup> The proportional odds assumption is testable using a statistical procedure known as a Brant test. For all outcomes in our model with more than two response categories, we performed the Brant test; if the proportional odds assumption failed, re-coded them into binary response variables.

these outcome groupings, we often wished to perform joint hypothesis testing to determine whether a particular explanatory variable was associated with all individual outcomes in the group of measures considered as a whole.

One option would have been to combine individual outcome measures into a single composite scale, either by summing or averaging across all measures in a grouping. However, this approach potentially obscures the individual contribution of each measure to the composite scale; for example, if one outcome in the grouping is dramatically more variable than the rest, it will disproportionately contribute to differences in the scale, but this will not be apparent from an examination of the composite scale alone. Additionally, for some groupings, included outcomes were measured on different scales, so combining them into a single composite measure would require standardization (or some alternative approach), which would in turn make results from the combined scale more difficult to interpret.

We therefore instead used seemingly unrelated regression techniques to perform joint hypothesis testing within outcome groupings. This approach allows for hypothesis testing across outcomes measured on different scales, and allows the reader to separately examine the contribution of individual outcome measures to the composite estimate. In the remainder of this section, we describe the details of our SUR approach.

Within each broad outcome grouping, suppose we have  $I$  individual outcome measures. For example, for our general parent attitudes about sex and abstinence grouping as defined above, we have two outcomes: level of agreement that sexual intercourse before marriage is against parent values, and that sex is something only married people should do. Estimating each of the  $I$  individual outcome equations via logistic regression as described above yields a total of  $I$  individual estimated coefficients for each included covariate, one for each outcome type.

Taking a simple average of these  $I$  parameters for each covariate  $x_j$  gives us our estimate of the average effect  $\overline{\beta_j}$ :

$$\hat{\overline{\beta_j}} = \frac{\sum_{i=1}^I \hat{\beta}_{ij}}{I}.$$

We wish to determine whether this average effect  $\overline{\beta_j}$  is statistically distinguishable from zero.<sup>16</sup>

Testing this hypothesis requires cross-equation restrictions. We therefore use seemingly unrelated regressions (SUR) to estimate a single parameter variance-covariance matrix for the  $I$  equations of interest in each case. We then extract the variance-covariance estimates of interest, i.e. those pertaining to each estimated coefficient  $\hat{\beta}_{ij}$ . The sampling variance for this estimate is given by:

<sup>16</sup> As with individual parameter estimates, we report this average estimate in tables and figures in its exponentiated form, so that it may be interpreted as an adjusted odds ratio.



$$V(\hat{\beta}) = \frac{\sum_{i=1}^I V(\beta_{ij}) + \sum_{i=1}^{I-1} \sum_{k=i+1}^I 2COV(\beta_{ij}\beta_{kj})}{I^2}, j = 1, 2, \dots, J.$$

where

$V(\beta_{ij})$  is the estimated variance of  $\hat{\beta}_{ij}$ ; and  
 $COV(\beta_{ij})$  is the estimated covariance of  $\hat{\beta}_{ij}$  and  $\hat{\beta}_{kj}$  where  $i \neq k$ .

This sampling variance is then used to calculate our test statistic

$$\frac{\hat{\beta} - \bar{\beta}}{V(\hat{\beta})} \sim N(0,1),$$

which is used to determine the statistical significance of our average effect estimates as reported in the main text.

### A.3 Item Non-Response Sensitivity Analysis

Whenever a dataset contains missing data, there is the potential for non-response bias to exist. Non-response bias occurs when individuals for whom a variable is missing differ systematically from individuals for whom that variable is available. Because we cannot observe the missing data for these individuals, it is not possible to verify the absence of non-response bias. Instead, the best approach is to conduct a sensitivity analysis, determining how results of interest change when different methods to address the missing data issue are employed.

The most common method of addressing missing data is complete case analysis. Complete case analysis uses only observations for which no data is missing; i.e., those individuals who report data for every variable used in the analysis. This is the method employed for results reported in the main text of this report.

As a sensitivity test, we additionally used non-stochastic regression imputation, an alternative approach to dealing with missing data, to determine whether this change in methodology had any meaningful influence on the results of our analyses. Non-stochastic regression imputation uses regression models to predict values of a dependent variable for which some values are missing, based on other variables included in the dataset. Missing values for that dependent variable are then replaced with the predicted, or “imputed,” values, while non-missing values remain unchanged. The analyses are then performed using the new version of the variable including imputed values.

We began by investigating the full set of variables used in the multivariate analyses presented in Section 3.2 and in Appendix B. Of the 83 variables in this dataset, 73 had a missing value for at least

one observation. For the imputation process based on non-stochastic regression, we created 73 regression models used to impute predicted values for each of the 73 variables with any missing data.

We performed the imputation process in stages, beginning by imputing values for the variables that had the fewest missing observations, and continuing the process sequentially until the variable with the most missing values was imputed. Each regression and prediction model used all available variables to impute missing values for the dependent variable.<sup>17</sup> The imputed version of each dependent variable was used in the later regression models, in order to increase the number of observations used in later regressions. The cycle of regression, prediction, and replacement of missing values with predicted values was repeated 73 times until all 83 variables in the dataset had a complete set of observations.

Once the non-stochastic regression imputation was complete, the multivariate analyses were reproduced using imputed versions of all variables. In general, results were qualitatively similar to those obtained using complete case analysis. Interested readers may contact the authors for additional details of this sensitivity analysis.

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<sup>17</sup> One variable, the parent response to the question: “In the past year, did the adolescent take part in a class, program, or event that talked about waiting to have sexual intercourse until marriage?” had 168 observations with a missing value. This variable was not used in any of the regression models as it would have significantly decreased the number of observations in each of the regressions. Missing values for this variable were imputed in the final iteration of the regression, prediction, and missing value replacement cycle.

## Appendix B. Supplementary Multivariate Analyses

As described in Section 2, we built our empirical model of factors associated with differences in adolescent attitudes about sex and abstinence using a series of nested logistic regression specifications that sequentially tested hypothesized direct and indirect associations. In this supplementary appendix, we describe in detail the results of our intermediate specifications examining two main hypothesized pathways of influence: parents and peers. For each of these groups, we first examine factors influencing overall attitudes about sex and abstinence, followed by an analysis of factors associated with frequency and type of communication with adolescents about sex and sexual values.

### B.1. Pathways of Influence: Parents

Our first set of analyses examined the factors associated with differences in parent attitudes about sex and abstinence.

#### Modeling Parent Attitudes about Sex and Abstinence

Our conceptual model assumes that parent views are largely set by the time their children reach adolescence, and as such are unlikely to be significantly influenced by external pressures like the attitudes of their own offspring or peers. For this reason, modeling parent attitudes is simpler than modeling adolescent attitudes and parent-adolescent communication, which we hypothesize could be more sensitive to a wider range of influences, both direct and indirect.

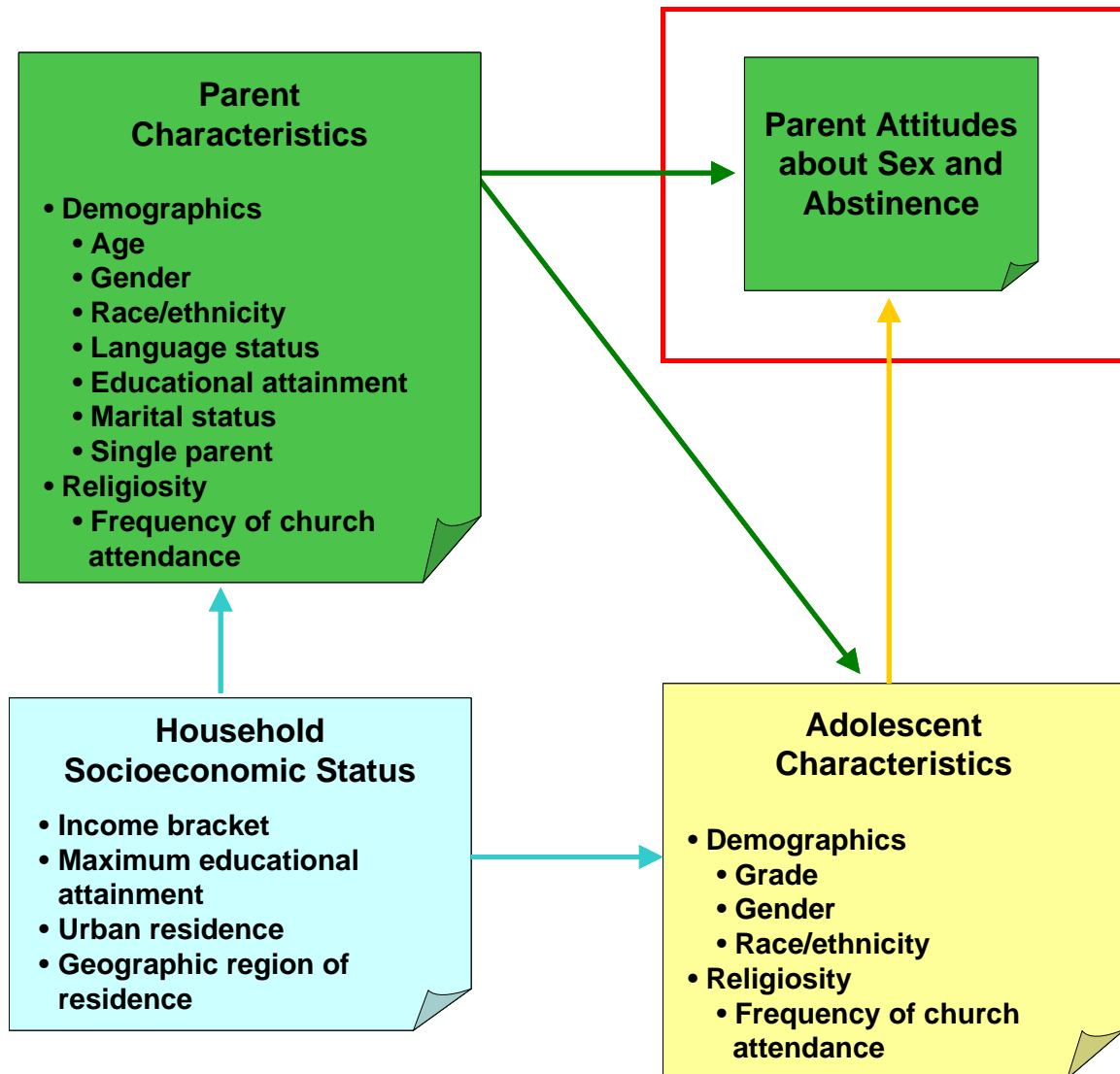
However, because our survey explicitly asked each parent to express opinions about acceptable sexual behavior for his or her own child, it is important to consider characteristics of adolescent respondents such as age and gender as possible determinants of these parental views.

Additionally, we include both parent and adolescent religious service attendance in our specifications as a proxy for overall parent religiosity. We assume that, all else equal, parents who require their adolescents to regularly attend religious services are likely to be more religious than parents who attend services themselves but do not require family members to attend. We therefore argue that considering both measures simultaneously provides a more accurate representation of overall parent religiosity than parent religious service attendance alone.

Our final specification thus modeled parent attitudes as a function of the following explanatory factors, as depicted in Exhibit B-1:

- *Parent demographics*: age, sex, race/ethnicity, English as primary language spoken at home, marital status, single parent status, parent educational attainment
- *Household socioeconomic status*: household income, maximum educational attainment in household, region of residence (South, Northeast, Midwest, West), urban/rural status
- *Adolescent demographics*: age, sex, race/ethnicity
- *Parent and adolescent religious service attendance*: frequency attending religious services

**Exhibit B-1. Parent Attitudes Conceptual Model**



Finally, it should once again be noted that, because the interviewed parents in our sample were not randomly selected, but rather were identified as the “most knowledgeable parent” (MKP) for each randomly-selected adolescent, these results should not be considered representative of the population of parents of adolescents in the United States. The relationships described in the remainder of this section should therefore be used only to inform interpretation of results for adolescents as presented in the main text of the report.

## Results

Appendix Tables C-9 – C-11 report estimated odds ratios for the model specification described above for each of the three groups of parent attitudinal measures.<sup>18</sup> In the remainder of this section, we present key findings for the analyses of factors associated with differences in general parent attitudes about sex and abstinence, parent views about permissible sexual behavior for their adolescent, and perceived parental control over adolescent sexual behavior.

Based on some of the bivariate relationships presented in the descriptive analyses in Section 3, we anticipated relatively substantial variation in MKP attitudes associated with differences in parent age, sex, race/ethnicity, educational attainment, and marital status. While some of these demographic associations persisted even when adjusting for associations with other included covariates, most were inconsistent in direction and magnitude across outcome measures.

***Older MKPs were less likely to report that premarital sex was against their values, but expressed more restrictive views about adolescents' current sexual behavior for some measures.***

***Parent Age.*** The odds that MKPs reported that it was against their values for their adolescent to have sex before marriage decreased by approximately 3 percent per year of age (Appendix Table C-9), which would seem to indicate less conservative views among older parents. However, older MKPs were more likely as they aged to *disagree* that it would be okay for their adolescent to have sexual intercourse if he or she were planning to marry their sexual partner (Appendix Table C-10). No other statistically significant effects by MKP age were found, either for individual attitudinal measures or for average effects jointly grouped by outcome category.

***Parent Gender.*** Male MKPs were less likely to disagree that having sexual intercourse would be a good thing to do at their adolescent's age (Appendix Table C-10), but simultaneously more likely to report that it was against their values for their adolescent to have sex before marriage, though the latter result was only statistically significant at the 90% confidence level (Appendix Table C-9). No other statistically significant differences by MKP gender were reported.

***Non-Hispanic black MKPs had more conservative general views about sex and abstinence when adjusting for the influence of other factors, but Hispanic parent views were not significantly different.***

***Parent Race/Ethnicity and Language Status.*** One of the most consistent associations found in our descriptive analyses of MKP attitudes was a greater degree of conservatism among non-Hispanic black MKPs as compared to MKPs of other race/ethnicities. Point estimates from our multivariate analyses similarly indicated more conservative views among non-Hispanic black MKPs as compared to non-Hispanic white and “other” race/ethnicity MKPs for both general attitudinal measures, adjusting for the influence of other observed factors. While only one of these individual associations (“It is against your values for your [teenager/child] to have sexual intercourse before marriage”) was statistically significant in our multivariate analyses, joint hypothesis testing showed that general

<sup>18</sup> See Section 2 for a description of individual variables and outcome categories.

attitudes about sex and abstinence were significantly more conservative on average at the 90% confidence level among non-Hispanic blacks (Appendix Table C-9).

In contrast, parent views about permissible adolescent sexual behavior did not differ significantly by non-Hispanic black MKP race/ethnicity (Appendix Table C-10). Neither influences on individual outcome measures in this group nor the average estimated influence across these measures were found to be statistically significant.

Hispanic MKPs also appeared in our descriptive analyses to have more conservative general attitudes about sex and abstinence than non-Hispanic white MKPs and MKPs of other race/ethnicities, although not to the same extent as non-Hispanic black MKPs. Interestingly, this association disappeared when adjusting for other factors in our multivariate analyses (Appendix Table C-9), and, furthermore, Hispanic MKPs actually reported *less* restrictive attitudes permissible sexual behavior for their adolescent than other racial/ethnic groups for one outcome measure, adjusting for other factors (Appendix Table C-10).

This may be accounted for in part by the fact that MKPs for whom English was not the primary language spoken at home were significantly more likely to report restrictive attitudes (Appendix Table C-10). This language status variable is likely to be a proxy indicator of recent immigrant status. Almost a quarter of Hispanic MKPs in our sample primarily spoke another language in the home, as compared to just over one percent in the rest of the sample. The difference in attitudes about sex and abstinence observed in the Hispanic subpopulation in our bivariate analyses might thus be expected to lessen or vanish when adjusting for this language factor as we do in our multivariate specifications.

***Parent Educational Attainment.*** MKP self-reported educational attainment was not associated with any statistically significant differences in attitudinal outcomes. Note that associations with this MKP-specific education measure must be considered in conjunction with that of the maximum household educational attainment measure discussed below; thus, adjusting for associations with this broader indicator of socioeconomic status, individual educational attainment did not appear to independently affect MKP attitudes.

***Divorced or legally separated MKPs reported less conservative general views about sex and abstinence on average than MKPs who were married, in marriage-like relationships, or widowed, but MKPs in single-adult households reported more conservative views.***

***Marital Status and Single Parenthood.*** Divorced or legally separated MKPs and never-married MKPs in our sample reported less conservative general views about sex and abstinence relative to married or widowed MKPs, adjusting for other observed factors, although the difference for never-married parents was not statistically significant. However, MKPs from households in which they were the only adult reported significantly *more* conservative general views about sex and abstinence (Appendix Table C-9). These findings imply that marital status and household composition appear to have independent and opposing associations with overall parental attitudes.

***Higher household income was associated with less conservative general MKP attitudes about sex and abstinence for two out of three measures, less restrictive MKP attitudes about permissible adolescent sexual behavior as a whole, and greater MKP-perceived control over adolescent behavior.***

***Household Income.*** MKPs from higher-income households had less conservative general attitudes about sex and abstinence. Each successively higher income bracket (defined in \$10,000 increments, and top-coded at \$70,000) was associated with a 14 percent reduction in the odds that MKPs reported it was against their values for their adolescent to have sexual intercourse before marriage, and a 15 percent reduction in the odds that MKPs agreed that only married people should have sexual intercourse (Appendix Table C-9).

We also found an association between household income and MKP attitudes about permissible sexual behavior for their adolescents. Higher income was associated with more restrictive views for two measures in this group, "it would be okay for your [teenager/ child] to have sexual intercourse if [he/ she] plans to marry the person," and "it would be okay for your [teenager/ child] to have sexual intercourse as long as [he/ she] and [his/ her] partner think that it is okay," and joint hypothesis testing found evidence of a statistically significant association for the seven individual outcome measures in this grouping considered as a whole (Appendix Table C-10).

Finally, MKPs from higher-income households were more likely to disagree that there was little they could do to keep their adolescents from engaging in sexual intercourse (Appendix Table C-11). This was the only statistically significant association between perceived parental control of adolescent sexual behavior and any parent demographic or socioeconomic characteristic.

***Maximum Household Educational Attainment.*** While the direction and magnitude of the estimated associations between maximum household educational attainment and MKP attitudes were somewhat suggestive of more conservative views in lower-education households, these effects were not found to be statistically significant (Appendix Table C-9). The association between household educational attainment and MKP views about permissible sexual behavior for their adolescent varied across outcome measures, but there was some evidence of a similar gradient in overall restrictiveness of views (Appendix Table C-10). These results are consistent in direction with the income associations reported above, suggesting that these two indicators of socioeconomic status have parallel but separate associations with parent views.

***Geographic Region and Urban Residence.*** Although neither urban residence nor geographic region was associated with differences in general MKP attitudes (Appendix Table C-9), there were some observed associations between these factors and parental permissiveness with regard to their adolescent's sexual behavior. Urban-dwelling parents were more likely to agree that it would be okay for their adolescent to have sexual intercourse if he or she planned to marry the prospective partner than their peers in rural locales. Though the influence of geographic region was also inconsistent, there was some indication based on individual outcome measures that attitudes were more restrictive in the South, Midwest, and West than in the Northeast (Appendix Table C-10).<sup>19</sup>

<sup>19</sup> Northeast was the excluded region of residence in our model specification.

***Permissiveness of MKP attitudes about sex and abstinence increased with adolescent age.***

***Adolescent Age.*** As might be predicted, outcome measures that asked MKPs to provide views about permissible behavior for their child were more likely to be sensitive to differences in adolescent characteristics than outcome measures based on more general statements. The most consistent association across the former group of outcomes was for adolescent age, as measured by current grade in school. MKPs of older adolescents expressed less restrictive views about acceptable sexual behavior for their children (Appendix Table C-10), and reported lower perceived control over their adolescents' behavior (Appendix Table C-11). However, this effect was confined to those measures specifically assessing views about permissible adolescent sexual behavior; MKP views about sex and abstinence overall were not sensitive to adolescent age (Appendix Table C-9).

***MKPs of male adolescents reported more permissive attitudes and lower perceived control over their adolescent's sexual behavior than MKPs of female adolescents.***

***Adolescent Gender.*** MKPs of males expressed more permissive views than MKPs of females with regard to acceptable sexual activity for their adolescents. MKPs of males had higher odds of reporting less restrictive views for six out of seven individual outcome measures of attitudes about their adolescent's current sexual behavior. Four of these point estimates were statistically significant when considered individually, and our joint hypothesis test found evidence of a statistically significant average effect of adolescent gender across these measures (Appendix Table C-10).

Additionally, MKPs of males were less likely to report that they could keep their child from engaging in sexual intercourse (Appendix Table C-9), indicating that these relatively permissive attitudes were paired with lesser perceived parental control.

***Adolescent Race/Ethnicity.*** We found no evidence of a consistent relationship between adolescent race/ethnicity and MKP attitudes about sex and abstinence. Adolescent Hispanic race/ethnicity was not associated with any statistically significant influences on MKP views. MKPs of non-Hispanic black adolescents were significantly less likely to disagree that "sexual intercourse is a good thing to do at your [teenager's/ child's] age," but there were no statistically significant differences by adolescent race/ethnicity across any of the other six measures of attitudes about permissible adolescent sexual behavior (Appendix Table C-10).

***Frequency of religious service attendance for both MKPs and adolescents were significantly and independently associated with more conservative views.***

***Parent and Adolescent Religious Service Attendance.*** MKP religious service attendance was associated with more restrictive attitudes about permissible adolescent sexual activity for all but one of the seven individual outcome measures in this grouping, and for these outcomes considered as a whole (Appendix Table C-10). General attitudes about sex and abstinence were also more conservative among MKPs attending services more regularly (Appendix Table C-9). These MKPs additionally expressed a greater degree of perceived control over their adolescents' sexual behavior (Appendix Table C-11).



Adolescent frequency of religious service attendance was also independently associated with more conservative MKP views about sex and abstinence across the three sets of attitudinal measures. While it is certainly not surprising that MKPs who attended services more regularly expressed more conservative attitudes, one might not expect that their children's attendance would independently influence their views. We speculate that more religious parents, who would also be expected to be more conservative, are more likely to expect all family members to attend religious services. If this were the case, then a greater frequency of adolescent religious service attendance is likely to indicate greater parent religiosity, which would in turn likely be associated with more conservative views about sexual intercourse.

### **Modeling Parent Attitudes about Sources of Abstinence Messages**

Our previous descriptive analyses showed that the degree of parental support for potential sources of abstinence messages varied widely both across message source and demographic subgroup. In order to better discern the underlying drivers of these differences, our multivariate analysis proceeded in two nested stages. First, we ran a series of logistic regressions with a binary outcome measure indicating support for a particular message source as the dependent variable, using the same explanatory variables as in the analyses of the parent sex and abstinence attitudinal measures described above.<sup>20</sup>

However, we also wished to ascertain whether these explanatory variables, which include measures of parent demographics, household socioeconomic status, adolescent demographics, and parent and adolescent religiosity, were directly associated with parent views about sources of abstinence messages independently of their intermediate association with overall parent views about sex and abstinence.

For example, one might hypothesize that parent religiosity could influence parent attitudes about abstinence messages delivered in a place of worship via several alternative pathways. More religious parents might be expected to more heavily favor their adolescents hearing messages about values in a religious venue. However, as shown above, more religious parents were also likely to express more conservative views about sex and abstinence. To the extent that parents with more conservative views are more likely to support receipt of abstinence messages in general, parent religiosity would also exert an influence via this indirect pathway.

In the second stage of our analyses, we therefore performed another set of logistic regressions which included the binary measures of parent attitudes about sex and abstinence described in the previous section as additional explanatory factors, along with the original parent and adolescent characteristic covariates included in the first phase. Comparing these two sets of specifications allows us to disentangle alternative pathways of association. Observing a factor that has a statistically significant direct association in the first set of regressions, but not in the second set of regressions including the additional attitudinal measures as explanatory variables, we would conclude that this factor is

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<sup>20</sup> Because these message source measures represented logically distinct attitudes, we did not perform joint hypothesis testing for this group of outcomes. For example, one might expect the type of parent supporting abstinence messages at a place of worship to differ substantially from the type of parent favoring abstinence messages from a doctor or health professional.

associated with differences in parent views about sources of abstinence messages only indirectly, through its association with overall attitudes about sex and abstinence.

Adjusting for associations with these overall attitudes may also assist in disentangling information about parent support for the *content* of the abstinence message from information about the *source* of that message. Parents who disagree that it is against their values for their adolescent to have sex before marriage would presumably be less likely to support their child receiving that message from any source. Without adjusting for parents' overall attitudes about sex and abstinence, we therefore cannot ascertain whether a parent's opposition is related to an objection to the overall message, or to an objection to the person or institution communicating that message. The results of our regressions including these attitudinal measures as covariates allow us to isolate factors associated with parental support for each potential message source, adjusting for their overall level of support for the message itself.

## Results

Logistic regression results for these two sets of specifications appear in Appendix Table C-12. The remainder of this section highlights the key findings from these analyses.

### ***The association between explanatory factors and MKP support for abstinence messages varied widely by potential message source.***

In general, and as one might expect, associations between predictive variables and support for abstinence messages depended heavily on the specified message source. For example, characteristics associated with MKP support for abstinence messages delivered in school did not necessarily influence the odds that the MKP favored their adolescent receiving these messages on the internet, and vice versa.

Additionally, results varied considerably when adjusting for the influence of overall MKP attitudes about sex and abstinence. These findings indicate that not only message content, but the identity of the person or institution delivering the abstinence message and the context in which it is delivered, are important determinants of parental support.

***Parent Age.*** MKP age was associated with slightly lower odds that MKPs favored receipt of abstinence messages from a community organization, but only when adjusting for the influence of overall parent attitudes about sex and abstinence. This was the only statistically significant association found for MKP age across all specifications.

***Parent Gender.*** Male MKPs were more likely to report that they favored their adolescent being told that he or she should not have sex before marriage at a place of worship; this MKP gender effect was slightly stronger when adjusting for overall attitudes about sex and abstinence.

***Parent Race/Ethnicity and Language Status.*** MKP race/ethnicity was not associated with any statistically significant differences in support for abstinence messages. However, MKPs from homes in which English was not the primary language spoken were substantially less likely to favor their adolescent receiving messages about abstinence from any source, although this effect was only

statistically significant at the 95% confidence level for the school, place of worship, and doctor/health center/health clinic specifications. These results were robust to the inclusion of overall parent attitude measures as explanatory measures; in fact, for schools, inclusion of attitude measures served to strengthen the association.

***Parent Educational Attainment.*** Lower MKP educational attainment predicted lower odds of supporting receipt of abstinence messages from community organizations or internet websites; like the language status effect above, the strength of this association increased when we adjusted for the influence of overall attitudes about sex and abstinence. At the same time, MKPs without a high school diploma were substantially *more* likely to support abstinence messages delivered in schools, although this effect was mitigated when controlling for overall attitudes.

Interestingly, the effect for community organizations was opposite in direction from the influence of maximum household educational attainment. When household educational attainment is considered as a broader indicator of socioeconomic status, these results can be taken together as follows: adjusting for the fact that households with lower socioeconomic status by this measure are more likely to support abstinence messages from community organizations, the MKP's own educational attainment level tends to decrease his or her level of support.

***Marital Status & Single Parenthood.*** Marital status and single parenthood were influential only in determining MKP support for abstinence messages delivered in schools. In a finding mirroring the results discussed above for general attitudes about sex and abstinence, the association between being divorced or separated and the odds of favoring abstinence messages in schools was opposite in direction from the influence of single parenthood. We again conclude that marital status and household composition appear to have independent and differing influences on overall parental attitudes.

***Lower household educational attainment was associated with greater support for abstinence messages delivered in places of worship and community organizations.***

***Household Income.*** MKPs from higher-income households were somewhat more likely to support their adolescents receiving abstinence messages in schools, but only when adjusting for the influence of overall parent attitudes about sex and abstinence. This was the only statistically significant association found for income.

***Maximum Household Educational Attainment.*** Unlike household income, household educational attainment was not associated with any statistically significant difference in MKP attitudes about abstinence messages in schools. However, lower household educational attainment did increase the odds that MKPs favored receipt of abstinence messages in community organizations and places of worship. As mentioned above, this effect for community organizations was opposite in direction from the influence of the MKP's own level of educational attainment.

***There was substantial regional variation in MKP support for potential abstinence message sources.***

***Geographic Region and Urban Residence.*** While urban residence did not appear to predict MKP support for sources of abstinence messages, there was substantial evidence of regional variation in views. MKPs residing in the West, Midwest, and South were more likely to support their adolescent hearing abstinence messages from most sources as compared to their peers in the Northeast, with the effect in the West preserved even when adjusting for the influence of overall parent attitudes about sex and abstinence.

***Adolescent demographic characteristics had no consistent influence on the likelihood that their MKPs favored receipt of abstinence messages from any source.***

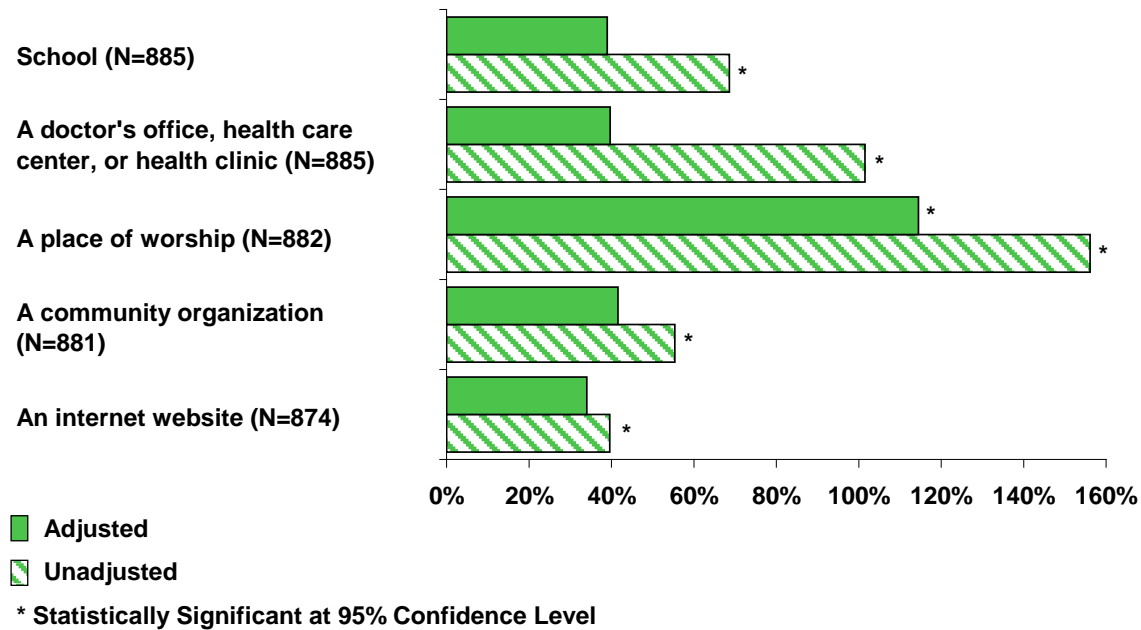
***Adolescent Age, Gender, and Race/Ethnicity.*** Unlike MKP views on abstinence and sex overall, MKP views about sources of abstinence messages did not appear to be strongly associated with adolescent demographic characteristics. MKPs of older adolescents were somewhat less likely to favor their child receiving messages about abstinence in school, but this effect disappeared when adjusting for the influence of other parent attitudes. Adolescent grade in school was also positively associated with MKP support for messages delivered in a place of worship, adjusting for the influence of overall parent attitudes about sex and abstinence. These two associations were the only statistically significant findings for adolescent characteristics.

***MKP religious service attendance was strongly associated with support for abstinence messages across many potential sources, with the effect mostly or entirely mediated through its influence on overall attitudes about sex and abstinence.***

***Parent and Adolescent Religious Service Attendance.*** MKP and adolescent religious service attendance were broadly associated with support for abstinence messages across all five sources for which we collected survey responses. Interestingly, however, for all but one source, this effect was entirely mitigated when we adjusted for overall parent attitudes about sex and abstinence. Even for place of worship, the only message source still significantly more likely to be favored by parents who attended church more frequently, the magnitude of this effect shrank when overall attitudes were taken into account (Exhibit B-2). This result suggests that the association between religiosity and parent support for abstinence messages from various sources is mostly or entirely mediated through the relationship between religiosity and overall attitudes.

## Exhibit B-2.

**Estimated Association of Parent Religious Service Attendance with Odds of MKP Support for Abstinence Messages, by Source, with and without Adjustment for Overall Parental Attitudes about Sex and Abstinence**



***Overall parent attitudes about sex and abstinence were most predictive of support for abstinence messages in school and from a doctor's office, health center, or health clinic.***

***Parent Attitudes about Sex and Abstinence.*** Finally, for the subset of regressions in which we included broader attitudinal measures, we consider the influence of each attitudinal measure on the odds that MKPs supported abstinence messages from various sources.

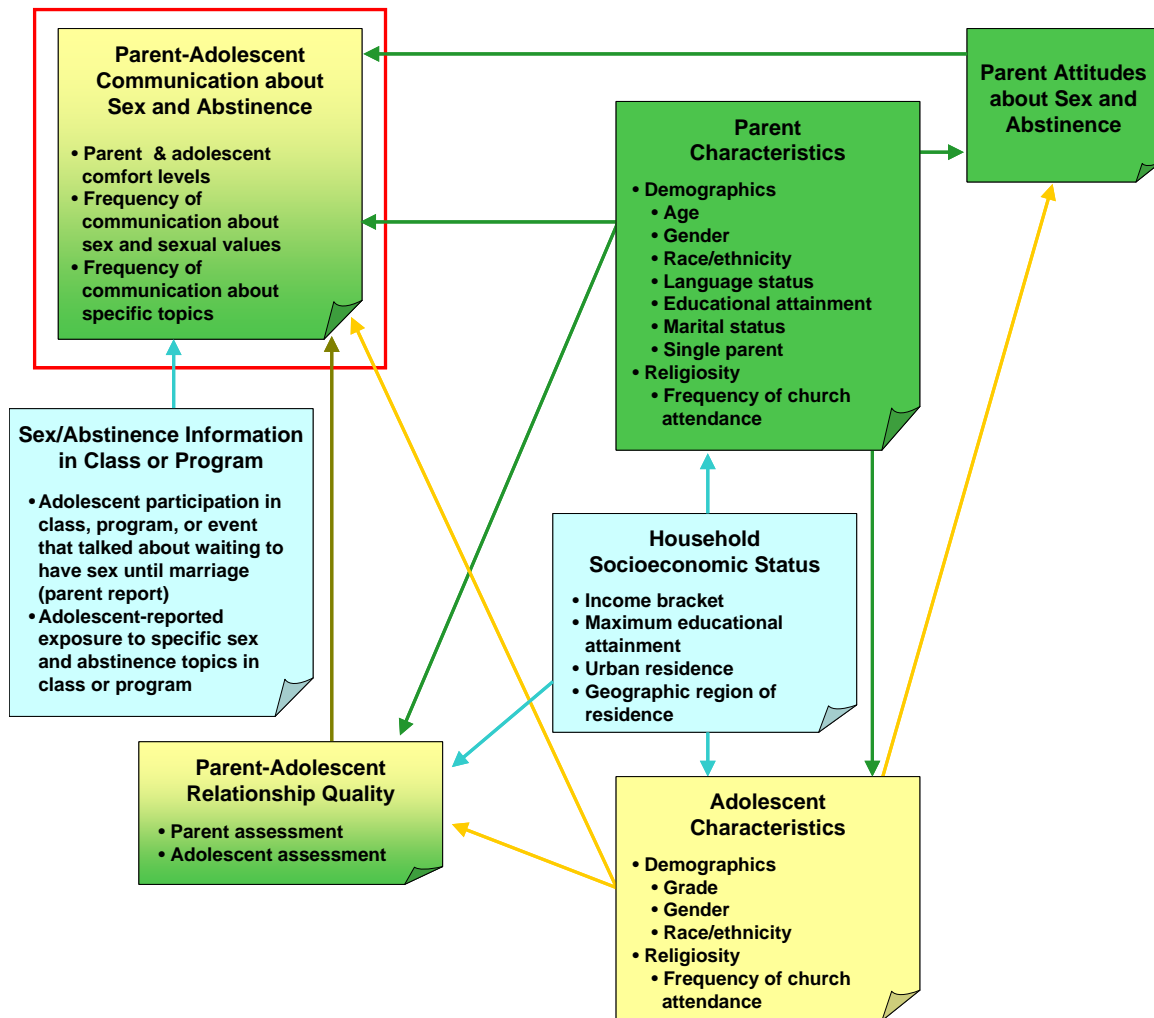
More conservative general attitudes increased the odds that MKPs favored the receipt of abstinence messages in schools and in doctor's offices, health centers, or health clinics. Individual measures in this group were also separately predictive of more support for messages from places of worship and community organizations. These general parent attitudes were more consistently related to support measures than were parent attitudes about their teen's current sexual behavior, while self-perceived parental control had no statistically significant effects in these models.

### **Modeling Parent-Adolescent Communication**

In the previous section, we provided a detailed analysis of factors associated with differences in parent attitudes about sex, abstinence, and abstinence messages. The next logical step in determining how parental attitudes are ultimately related to adolescent views is to examine how parents communicate their beliefs to their children. We now therefore turn to an analysis of the factors associated with differences in parent communication with their adolescents about sex and abstinence.

As depicted in our conceptual model (Exhibit B-3), parent-adolescent communication is potentially shaped by a wide array of interconnecting factors.

**Exhibit B-3. Parent-Adolescent Communication Conceptual Model**



Since both parents and adolescents may initiate conversations about sex, abstinence, and sexual values, it is important to consider both parent and adolescent characteristics as potential determinants of parent-adolescent communication outcomes. We hypothesize that parent and adolescent demographic characteristics and religiosity may influence communication frequency and content both directly, through their immediate influence on parent and adolescent propensity to engage in these types of conversations, and indirectly, through their influence on intermediate outcomes such as overall parent attitudes about sex and abstinence and general parent-adolescent relationship quality.

We additionally consider the possibility that adolescent exposure to information about sex, abstinence, or sexual values in the context of a class or program might directly influence the degree

and subject matter of parent-adolescent conversations about sexual issues. Many programs of this type encourage adolescents to talk to their parents about sex and sexual values; in some cases, parents actually directly participate in the program in some way (Mathematica Policy Research, 2007a).

As described in greater detail in the methodology section, in building our analytic model, we proceeded in a series of nested steps designed to identify both direct and indirect associations. We began by testing each hypothesized direct association in our model, i.e. those relationships designated by an arrow directly connecting a group of explanatory factors to an intermediate or final outcome in the conceptual model. We performed a series of logistic regressions (binary or ordered, depending on the type of outcome measure) to test each individual association. For each group of related outcomes, we then used seemingly-unrelated regression techniques to test whether explanatory variables were jointly associated with the outcomes considered as a whole.

For example, we tested whether parent demographic and religiosity variables were significantly associated with each of the six measures of relationship quality. SUR techniques allowed us to test the association between each parent characteristic and the six relationship quality measures jointly considered. We then separately evaluated the association between the six relationship quality measures and our parent-communication outcomes, again using SUR techniques as appropriate to identify joint influences.

When a statistically significant joint association was found for at least one explanatory variable in the group, e.g. between parent gender and average reported relationship quality, we retained that group of explanatory variables in the final model.<sup>21</sup> For our parent-adolescent communication model, we ultimately rejected the null hypothesis of no direct association for each group of variables tested; that is, we found evidence that each of the theorized direct associations in the conceptual model in fact existed in our data.

The next step was to test each of the theorized *indirect* associations. In the first stage of the analysis, we found significant associations between parent and adolescent characteristics (demographics, socioeconomic status, and religiosity) and parent-adolescent communication outcomes, but it is unclear to what extent this relationship was partially or entirely mediated through associations between these factors and two intermediate outcomes, relationship quality and parent attitudes about sex and abstinence.

We accordingly ran a set of intermediate regressions, again using parent-communication outcomes as the dependent variables and parent and adolescent characteristics as predictors, but also including relationship quality and parent attitudes, respectively, as additional explanatory covariates.

We again use our intermediate relationship quality outcome as a specific example. In our first stage of analysis, we found statistically significant direct associations between parent characteristics and

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<sup>21</sup> Because we were more concerned about the possibility of rejecting a hypothesized association that actually exists (also known as a type II error) than about erroneously identifying a false positive association (a type I error), we used a less stringent 90% confidence level in evaluating statistical significance in our model-building procedures.

relationship quality, parent characteristics and parent-adolescent communication, and relationship quality and parent-adolescent communication outcomes, respectively.

We therefore next performed another set of regressions with parent-adolescent communication outcomes as the dependent variable, and both parent characteristics and relationship quality measures as included explanatory covariates. To the extent that the association with parent characteristics was reduced or eliminated in these new specifications, we concluded that the association between parent characteristics and parent-adolescent communication outcomes was partially or wholly mediated through the association between parent characteristics and relationship quality.

For example, while male parents reported lower comfort levels discussing sexual issues with their adolescents in both sets of specifications, the magnitude of this effect was reduced when relationship quality measures were included in the empirical model. From these findings, we can conclude that gender influenced comfort levels both directly and indirectly through the negative association between male parent gender and overall relationship quality.

## Results

Tables C-13 – C-19 display logistic regression results for our parent-adolescent communication outcomes. For the sake of brevity, we report estimates here only from our final model specifications. (Complete results for intermediate model-building specifications are available by request.) However, where appropriate in the text, we discuss the results of our intermediate model-building analyses in order to provide additional context to our findings.

As noted previously, because parent respondents were not randomly selected for inclusion in our sample, but were the identified “most knowledgeable parent,” or MKP, for each randomly-selected adolescent, these results should not be considered representative of the population of parents in the United States. Rather, they should be used only to inform the results for adolescents as reported in the main text.

### ***Older MKPs talked less with their adolescents about sex and sexual values.***

**Parent Age.** Older MKPs were less likely to report that they had ever spoken to their adolescents about sex and sexual issues, and that they had communicated less frequently about what is right and wrong or good and bad about having sex (Appendix Table C-14). Similarly, MKPs reported less frequent conversation across five of the seven individual conversation topics related to sex and abstinence on which they were surveyed (Appendix Table C-16). Finally, they were less likely to have told their adolescent that young people should wait until marriage before having sex (Appendix Table C-18). Controlling for overall comfort levels for parents and adolescents in communicating about sex did not influence these associations (Appendix Tables C-15, C-17, and C-19).



***Male MKPs were less comfortable talking about sex with their adolescents, decreasing the frequency of communication with their adolescents about specific topics related to sex and abstinence.***

***Parent Gender.*** Male MKPs reported significantly lower comfort levels in talking about sex with their adolescents (Appendix Table C-13). This effect appears to have been partially mediated through lower average relationship quality reported by male MKPs and their offspring.

While there were no statistically significant differences by MKP gender in general communication levels (Appendix Table C-14), male MKPs did report lower frequency of conversations with their adolescents about sexually transmitted diseases or HIV/AIDS, how to have good romantic relationships, and how to behave on dates (Appendix Table C-16). However, this effect seems to be entirely driven by the lower comfort levels discussed above, since when including these comfort measures in the specification the association was no longer statistically significant (Appendix Table C-17).

***Black MKPs spoke more often with their adolescents about sex and sexual values in general, but did not report greater frequency of discussion about specific topics related to sex and abstinence.***

***Parent Race/Ethnicity and Language Status.*** Adjusting for overall comfort levels, black or African-American MKPs reported higher levels of communication about sex and abstinence for our two general parent-adolescent communication outcome measures considered jointly in comparison with MKPs of non-Hispanic white or “other” race/ethnicity (Appendix Table C-15). Interestingly, this effect did not translate to an increase in parent-adolescent conversation frequency for any of the seven specific topic areas related to sex and abstinence for which we collected survey data (Appendix Table C-17).

Associations between black or African-American race/ethnicity and MKP communication of specific statements about appropriate sexual behavior for young people were somewhat mixed. Black MKPs were more likely to have told their adolescent that young people should wait until marriage before having sex. However, they were also more likely to report that they told their adolescent it would be okay for young people to have sexual intercourse as long as they used a condom.

***Marital Status and Single Parenthood.*** There were some scattered statistically significant associations found between MKP marital status and parent-adolescent communication, but these effects were inconsistent across outcome measures and model specifications.

***Household Income.*** We found no statistically significant associations between household income bracket and MKP-reported communication with adolescents about sex or abstinence.

***MKPs from lower-education households reported more frequent conversations about sexual values.***

***Maximum Household Educational Attainment.*** Interestingly, MKPs from lower-education households reported more frequent conversations about sexual values in the past year (Appendix

Table C-14), as well as more frequent conversations specifically about sexually transmitted diseases or HIV/AIDS and about waiting until marriage to have sex (Appendix Table C-16).

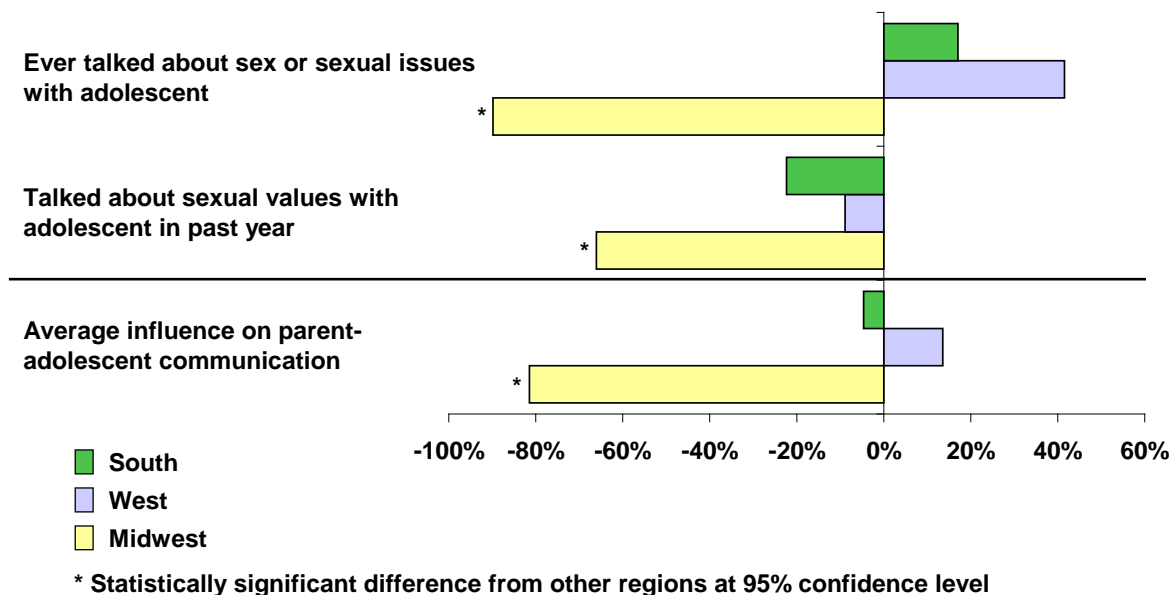
***There was significant regional variation in likelihood and frequency of parent-adolescent communication about sex and abstinence.***

*Geographic Region and Urban Residence.* MKPs residing in the Midwest reported significantly lower levels of parent-adolescent communication about sex and sexual values as compared to residents of other regions (Appendix Table C-14, Exhibit B-4). Midwestern MKPs also reported lower frequency of conversations about HIV/AIDS and other sexually transmitted diseases, and of conversations about how sex relates to religious values (Appendix Table C-16). There was also substantial regional variation in the likelihood that a parent had communicated any of the four specific statements about permissible sexual behavior for young people included in our survey, with both Southerners and Westerners (as well as residents of urban areas) reporting lower likelihood of delivering these messages in some specifications.

#### **Exhibit B-4.**

#### **Estimated Association of Region of Residence with Odds of MKP Communicating with Adolescent about Sex and Sexual Values (N=734)**

(Excluded region is Northeast; results adjusted for influence of parent and adolescent comfort levels discussing sex.)



***MKPs of older adolescents were more likely to have spoken to their adolescent about sexual values and specific topics related to sex and abstinence.***

*Adolescent Age.* Levels of communication between MKPs and adolescents were generally increasing with adolescent age. This effect was consistent across both general communication measures

(Appendix Table C-14) and for measures of the frequency of conversation about specific topics related to sex and abstinence (Appendix Table C-16).

In contrast, there was association between adolescent age and the probability that a parent delivered specific messages about permissible sexual behavior for young people.

***Adjusting for overall comfort levels, MKPs of male adolescents and MKPs of black adolescents were less likely to have communicated specific messages about permissible sexual behavior for young people.***

***Adolescent Gender.*** Adolescent gender had no consistent influence on overall levels of communication with MKPs about sex and abstinence (Appendix Table C-14). MKPs of male adolescents, however, were less likely to report that they had told their adolescent that young people should not have sex until they are married, until they at least finish high school, or as long as they used condoms, although this effect was only statistically significant when adjusting for overall comfort levels in communicating about sex and abstinence (Appendix Table C-17).

***Adolescent Race/Ethnicity.*** Adjusting for other factors, adolescent race/ethnicity had no influence on parent-adolescent communication levels in general (Appendix Table C-14) or on communication about specific topics (Appendix Table C-16). However, parents of black adolescents were less likely to report that they had communicated three of the four specific statements about permissible adolescent sexual behavior about which we inquired in our survey.

***MKPs from more religious households reported more frequent conversations about waiting till marriage and about how religious values relate to sexual intercourse, and were less likely to say that they told their adolescent it would be okay to have sex under certain circumstances.***

***Parent and Adolescent Religious Service Attendance.*** MKPs who attended church more frequently reported a greater likelihood of ever talking to their adolescent about sex or sexual issues (Appendix Table C-14). This general effect on communication levels seems to be mediated through an increase in comfort levels communicating about sex and abstinence associated with overall religiosity, since when, controlling for parent and adolescent comfort, the influence of religiosity on this communication variable disappears (Appendix Table C-15).

However, even when controlling for comfort levels, more religious MKPs reported more frequent conversations about waiting to have sex until marriage and about the relationship of religious values to sex (Appendix Table C-17). They were additionally less likely to have told their adolescent that it would be okay for young people to have sex if they planned to marry their partner, if they had finished high school, or if they used a condom.

***MKPs with more conservative or restrictive attitudes about sex and abstinence reported more frequent communication about specific sexual issues with their adolescents, as did MKPs who felt they could more effectively influence their adolescents' sexual behavior.***

***Parent Attitudes.*** MKPs who felt that sexual intercourse is something that only married people should do were less likely to have ever had a conversation with their adolescents about sex, but parents who disagreed that it would be okay for their adolescent to have sex before finishing high school or if they were planning to marry their partner were more likely to have communicated about sex and sexual issues (Appendix Table C-14).

Effects were more consistent across specific conversation topics related to sex and abstinence. More conservative or restrictive MKP attitudes were positively associated with greater frequency of conversation about a wide range of topic areas (Appendix Table C-16), and with the likelihood that a parent had told their adolescent that young people should wait until marriage before having sex (Appendix Table C-18).

Additionally, MKPs who felt that they could influence their adolescent's sexual behavior were more likely to talk to them about sex in general (Appendix Table C-14), and reported more frequent conversations about waiting until marriage to have sex and how religious values relate to sex (Appendix Table C-16). This finding is consistent with the hypothesis that parents who believe they have greater control use communication as a tool to communicate their values to their offspring.

***There were no consistent associations between relationship quality and parent-adolescent communication measures, but relationship quality did appear to mediate the influence of some other factors.***

***Relationship Quality.*** Although there were some scattered statistically significant associations between parent-adolescent communication outcomes and relationship quality as assessed by MKPs and adolescents, in general there were no statistically significant patterns of association when adjusting for other factors. However, as noted above, it is clear that relationship quality is an important mediator for other associations, such as the lower overall level of communication between male MKPs and their adolescents.

***Adolescent exposure to information about sex, abstinence, and sexual values in a class, program, or event was strongly associated with greater levels of MKP-reported parent-adolescent communication.***

***Adolescent Exposure to Information about Sex, Abstinence, and Sexual Values in Classes or Programs.*** MKP-reported adolescent participation in a class, program, or event that talked about waiting to have sexual intercourse until marriage was associated with greater levels of MKP-reported parent-adolescent communication. Both MKP-reported general communication (Appendix Table C-14) and conversations about specific topics (Appendix Table C-16) were more frequent for this group.

Interestingly, parents of adolescents who had participated in a class, program, or event that talked about waiting to have sexual intercourse until marriage were more likely to report not only that they

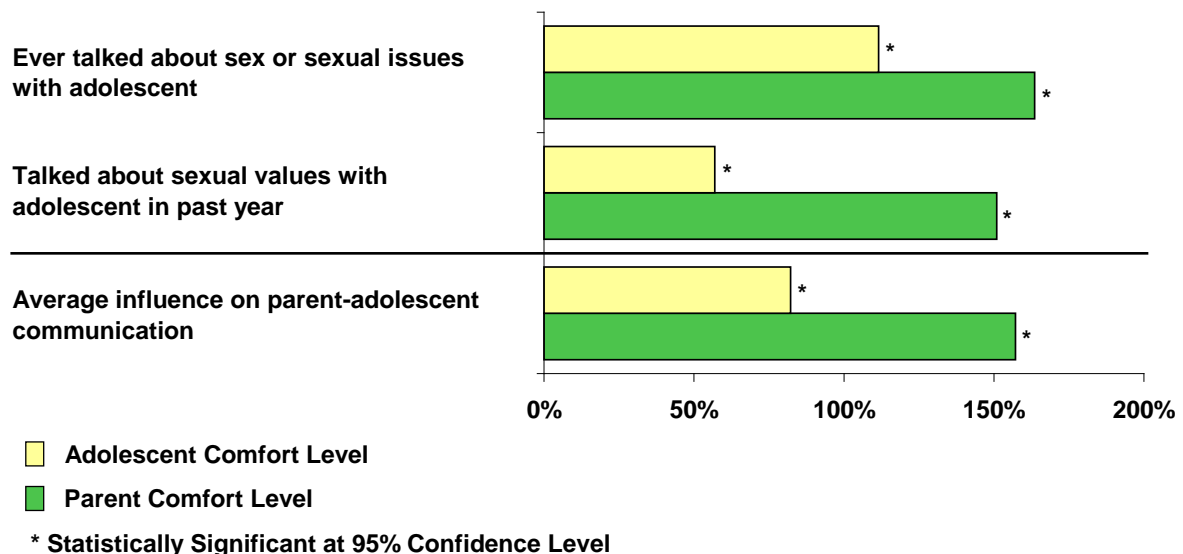
had told their adolescent that young people should not engage in sexual intercourse before marriage, but also that they should not engage in sexual intercourse before they are in a relationship with someone whom they feel they would like to marry, or at least until after they had finished high school. It is somewhat unclear why adolescent participation in a program of this type would influence both the probability of the first, more conservative statement, as well as the latter two more permissive ones.

***Both MKP and adolescent comfort levels were independently associated with likelihood and frequency of communication about sex and sexual issues.***

***Parent and Adolescent Comfort Levels.*** Both MKP and adolescent comfort levels in talking about sex and sexual issues independently influenced levels of communication as a whole (Appendix Table C-15), as well as frequency of conversation about specific topics related to sex and abstinence (Appendix Table C-17, Exhibit B-5). This implies that interventions aimed at improving comfort levels discussing sex and sexual values among both parents and adolescents may be more successful than interventions aimed at only one of these groups.

#### **Exhibit B-5.**

#### **Estimated Association of MKP and Adolescent Comfort Levels with Odds of MKP Communicating with Adolescent about Sex and Sexual Values (N=734)**



## **B.2. Pathways of Influence: Peers**

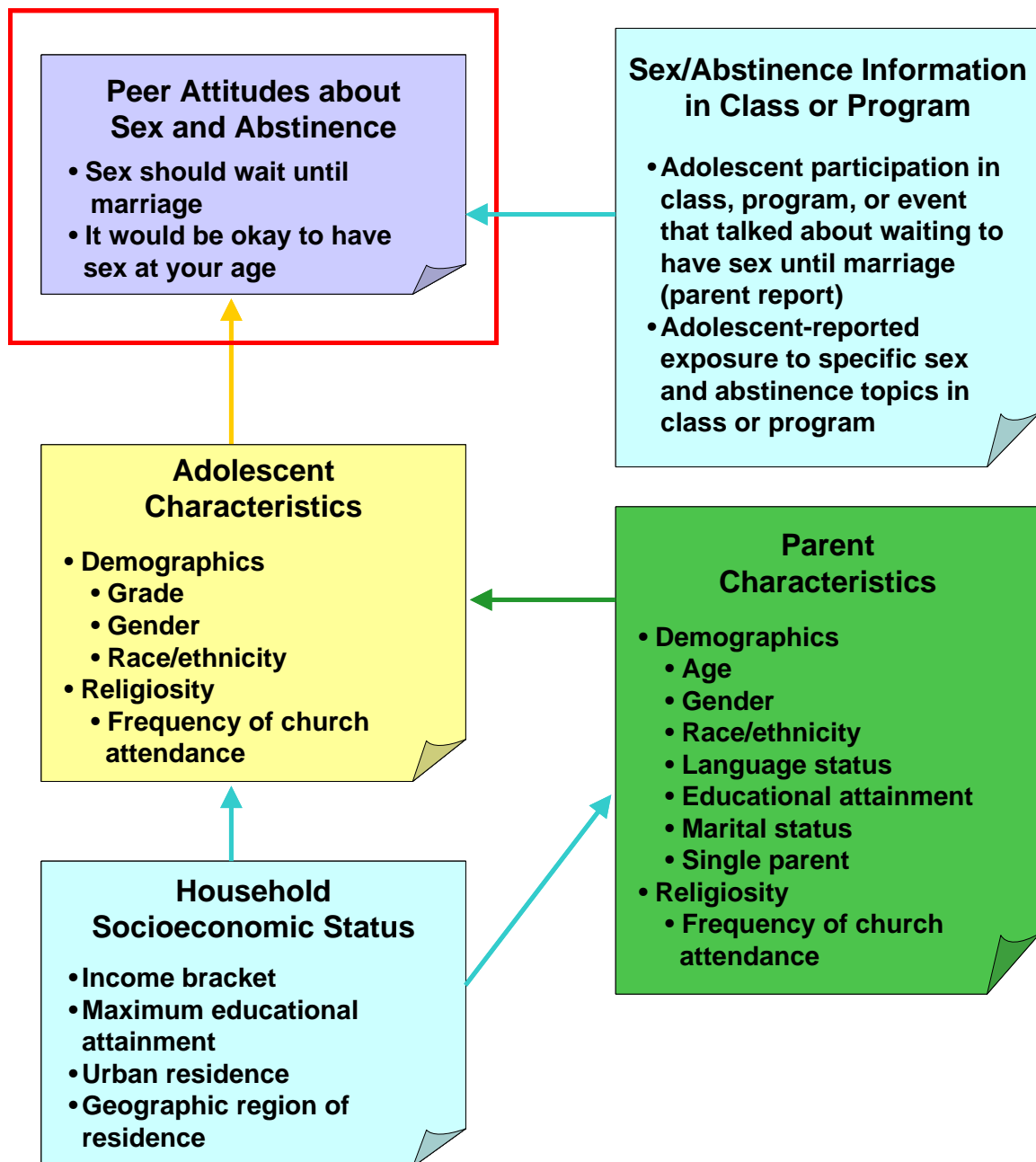
As discussed in the literature review, peers have been shown to be extremely influential in determining adolescent attitudes and risk behaviors, particularly for older adolescents (Gardner & Steinberg, 2005; Jaccard, et al., 2005; Krosnick & Judd, 1982). As a first step in exploring how peer views were associated with differences in attitudes about sex and abstinence among the adolescents in

our sample, we wished to understand more completely the factors associated with more or less conservative peer views.

### Modeling Peer Attitudes about Sex and Abstinence

The interplay between adolescent attitudes and those of their peers is extremely complex. While peer attitudes may directly influence an adolescent's own views, an adolescent may also tend to choose friends whose attitudes are already similar to his or her own.

**Exhibit B-6. Peer Attitudes Conceptual Model**



For the purposes of these analyses, however, we assume that adolescent demographic characteristics, household socioeconomic status, and overall religiosity are the primary factors influencing choice of peers, and that the influence of specific adolescent attitudes about sex and abstinence on his or her choice of friends is insignificant relative to the influence of these more general factors.

We also assume that parent characteristics are unlikely to independently influence an adolescent's choice of friends, except through their indirect influence through their effects on socioeconomic status of the entire household. The only exception is parent frequency of religious service attendance, which we include in the model because, as discussed previously, it appears that this variable, in combination with the adolescent religious service attendance variable, provides a more accurate measure of overall household religiosity than either frequency measure alone.

As shown in Exhibit B-6, our base specifications therefore model peer attitudes as a function of the following explanatory factors:

- *Household socioeconomic status*: household income, maximum educational attainment in household, region of residence (South, Northeast, Midwest, West), urban/rural status
- *Adolescent demographics*: age, sex, race/ethnicity
- *Parent and adolescent religious service attendance*: frequency attending religious services

We also wished to determine whether adolescent exposure to information about sex, abstinence, and sexual values in classes or programs was correlated with differences in the attitudes of their peers, since one might expect that adolescents who have participated in this a class or program covering these topics are more likely to have friends who have participated in these programs as well. In order to test this hypothesis, we ran a second set of specifications which, in addition to the adolescent and household characteristics in the first set of models, also included the following variables measuring adolescent exposure to information about sex, abstinence, and sexual values in the context of a class or program:

- *Adolescent participation in class, program, or event that talked about waiting to have sexual intercourse until marriage in past year*, parent report. (Binary response variable.)
- *Specific topics covered in a class or program*, adolescent report (Binary response variables.):
  - the basics of how babies are made, pregnancy, or birth
  - how to have good romantic relationships
  - how to behave on dates
  - how to resist pressures to have sexual intercourse
  - waiting to have sexual intercourse until marriage
  - how religious values relate to sexual intercourse

## Results

Appendix Table C-20 reports estimated odds ratios for the two peer attitude specifications. In the remainder of this section, we present key findings from these analyses of the factors associated with differences in peer attitudes.

***Higher household income was associated with somewhat more conservative peer attitudes.***

***Household Income.*** Adolescents from higher-income households reported more conservative views about sex and abstinence among their peers. This contrasts with our earlier finding that MKPs from higher-income households had less conservative general attitudes. This was the only statistically significant association found for peer attitudes across the household socioeconomic status measures in our model.

***Older adolescents reported less conservative views about sex and abstinence among their peers.***

***Adolescent Age.*** Adjusting for other included factors, older adolescents were significantly less likely to report that their peers think someone should wait to have sexual intercourse until marriage, and more likely to report that their peers think that having sexual intercourse would be okay at their current age. Joint hypothesis testing found a strong statistically significant negative association between age and these two peer attitude outcome measures considered simultaneously.

***Peers of male adolescents had less conservative views about sex and abstinence than did peers of females.***

***Adolescent Gender.*** Like older adolescents, male adolescents reported less conservative attitudes about sex and abstinence among their peers for both individual outcome measures separately and for the two outcomes considered jointly. This finding is consistent with the more permissive views expressed by parents about their male children's current sexual behavior.

***Black adolescents reported less conservative attitudes about sex and abstinence among their peers.***

***Adolescent Race/Ethnicity.*** Adolescents of black or African-American race/ethnicity reported that fewer of their peers think that someone should wait until marriage to have sexual intercourse as compared to adolescents of non-Hispanic white or "other" race/ethnicity, and joint hypothesis tests found evidence of less conservative peer views in general across our two peer attitude outcome measures. While point estimates also suggested more conservative views among peers of Hispanic adolescents, these associations were not statistically significant.



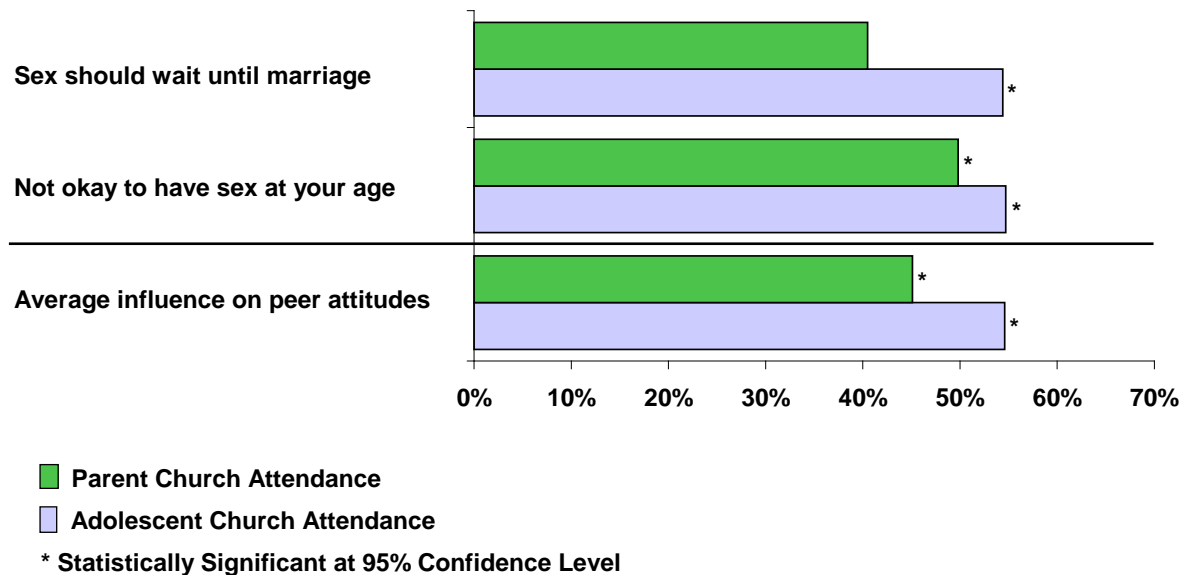
**Adolescents from more religious households had peers with more conservative attitudes.**

**Parent and Adolescent Religious Service Attendance.** More frequent attendance of religious services by MKPs and by adolescents were both positively associated with more conservative reported views among adolescents' peers (Exhibit B-7). It seems likely that adolescents from more religious households tend to have more religious friends, who in turn are more likely to report more conservative attitudes about sex and abstinence.

**Exhibit B-7.**

**Estimated Association of Adolescent and MKP Religious Service Attendance on Odds of More Conservative Peer Attitudes about Sex and Abstinence (N=760)**

(Results adjusted for adolescent exposure to information about sex, abstinence, and sexual values in a class or program.)



**Adolescents who participated in class, program, or event that talked about waiting to have sex until marriage reported more conservative views among their peers.**

**Adolescent Participation in Class, Program, or Event that Talked about Waiting to Have Sex Until Marriage.** Adolescents whose MKPs reported that they had previously participated in a class, program, or event that talked about waiting to have sex until marriage reported significantly more conservative views among their peers, even adjusting for the influence of other contributing factors such as age and household religiosity. This overall influence was primarily driven by an increase in the number of adolescents who reported that their peers felt that sex should wait until marriage.

In general, including variables measuring adolescent exposure to information about sex, abstinence, or sexual values in a class or program did not substantially change the estimated magnitude or

significance of associations between peer views and the other covariates, indicating that this effect was not mediated through its relationship to these other factors.

***Exposure to Specific Sex and Abstinence Topics Covered in a Class or Program.*** Adolescents who said that they had been taught the basics of how babies are made, pregnancy, or birth in a class or other program reported less conservative peer views as a whole. In particular, adolescents were more likely to report that their peers thought it was okay to have sex at their age; there was no statistically significant difference in the likelihood that their peers felt that sex should wait until marriage.

Adolescents who said they had learned in a class or other program about how to resist pressures to have sexual intercourse also reported fewer peers who thought it was okay to have sex at their age, but learning about this topic did not predict a difference in the individual other peer attitude measure, or the two peer attitude measures on average.

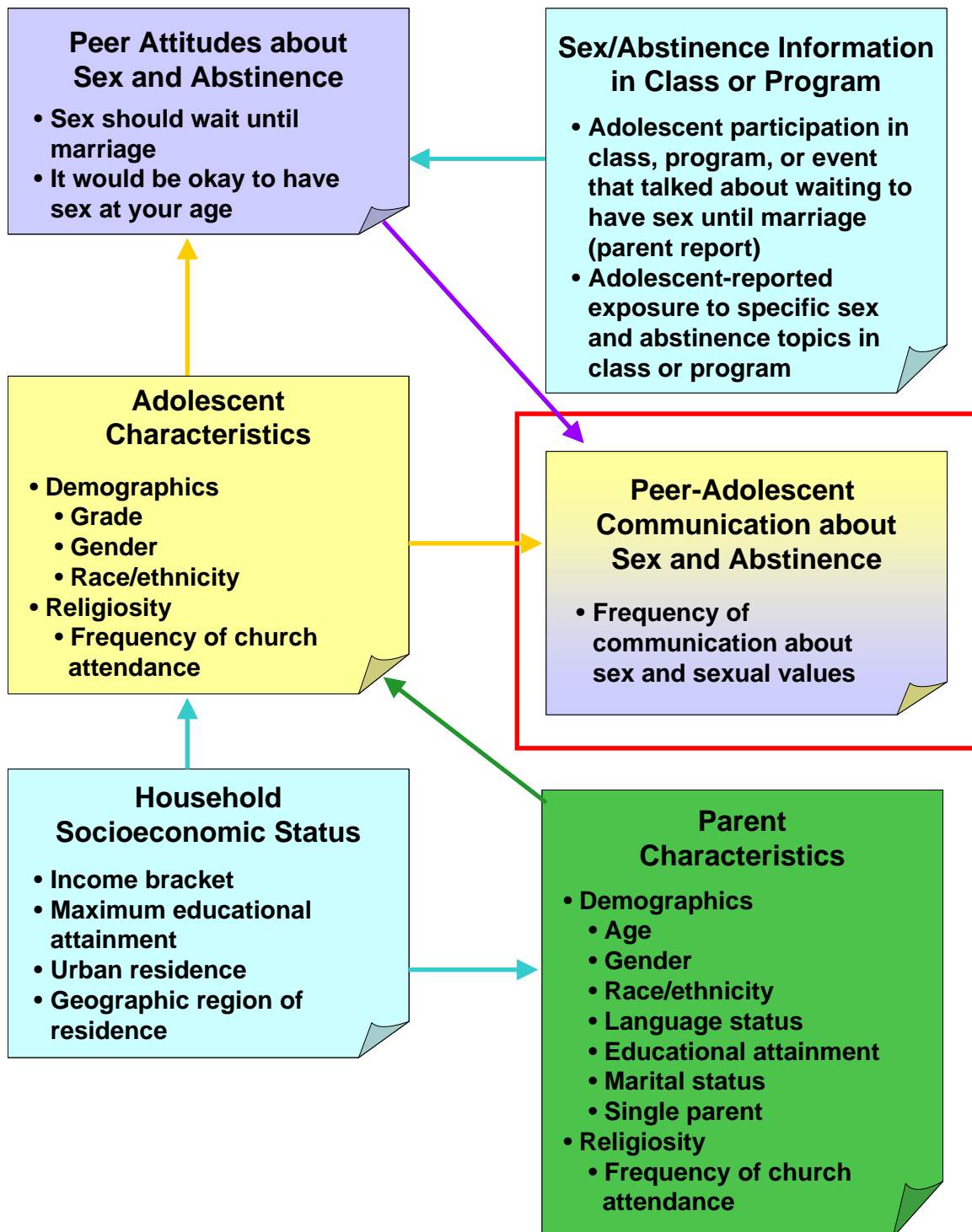
### **Modeling Peer-Adolescent Communication**

We wished to determine how peer attitudes about sex and abstinence were associated with differences in peer-adolescent communication about sexual issues, in an examination paralleling the parent-adolescent communication analysis presented in the previous section. However, because we collected fewer variables related to peer-adolescent communication, model-building was more straightforward for these peer outcomes.

Like our parent-adolescent communication analyses, our analysis of peer-adolescent communication proceeded in nested stages. We first ran an ordered logit using the same base model specification as for the peer attitude variables, with adolescent characteristics, household socioeconomic status, and parent and adolescent religiosity as explanatory factors.

We additionally hypothesized that the frequency of adolescent communication with peers about sexual values might depend in part on general peer attitudes about sex and abstinence. We thus performed a second ordered logit including the base explanatory variables from the first specification with the addition of the two peer attitude measures. The results of this second stage of analysis allowed us to determine whether, adjusting for associations with adolescent characteristics, household socioeconomic status, and religiosity, frequency of adolescent communication with peers about sexual values was independently associated with general peer attitudes about sex and abstinence.

Exhibit B-8. Peer-Adolescent Communication Conceptual Model



In the last stage of the nested model, we added the variables described above measuring adolescent exposure to information about sex, abstinence, and sexual values in a class or program, allowing us to test the hypothesis that participation in these programs is associated with differences in frequency of adolescent discussion of sexual values with their peers, independent of the programs' hypothesized effects on attitudes.

## **Results**

Table C-21 reports odds ratios for the final peer communication model. In the remainder of this section, we present key findings from these analyses of the factors associated with differences in peer-adolescent communication.

### ***The frequency of adolescent communication with peers had no significant association with socioeconomic status.***

**Household Income.** Adolescents from higher-income households reported more conservative views about sex and abstinence among their peers. This contrasts with our earlier finding that parents from higher-income households had less conservative general attitudes. This was the only statistically significant association found for peer attitudes across the household socioeconomic status measures in our model.

Similarly, no socioeconomic status measure, including income, had any association with differences in the frequency of communication with peers reported by adolescents. This finding implies that levels of peer communication about sexual values are relatively insensitive to socioeconomic differences.

### ***Older adolescents reported more frequent peer-adolescent communication about sexual values.***

**Adolescent Age.** Older adolescents reported more frequent communication with peers about sexual values. The magnitude of this effect decreased slightly when adjusting for the influence of peer attitudes about sex and abstinence and for exposure to information about sex and abstinence in a class or program, indicating that these other factors tend to be associated independently with more frequent conversations about sex and abstinence as adolescents grow older.

Recall from our analyses above that older adolescents also reported significantly less restrictive attitudes among their peers. In combination with the increase in peer-adolescent communication with age, this implies that, on average, adolescents are more frequently exposed to more permissive opinions about sex and abstinence from their peers as they grow older.

### ***Peers of male adolescents were less likely to communicate with them about sexual values.***

**Adolescent Gender.** Like older adolescents, male adolescents reported less conservative attitudes about sex and abstinence among their peers. However, in this case these relatively permissive views were paired with less frequent reported peer communication about sexual values. It is important to

note that, because our outcome measure specifically asks about how often adolescents discuss sexual values with their peers, this finding may not reflect underlying gender differences in frequency of communication about sexual intercourse in general.

This result was strengthened by the inclusion of covariates indicating exposure to sex and abstinence messages in a class or program, indicating that failing to adjust for these factors may mask some of the overall association between gender and peer-adolescent communication levels.

***Adolescent race/ethnicity did not influence levels of peer-adolescent communication.***

***Adolescent Race/Ethnicity.*** There were no statistically significant differences in levels of peer communication about sexual values by racial/ethnic status. This finding contrasts with the finding in the previous section that adolescents of black or African-American race/ethnicity reported less conservative attitudes among their peers.

***Adolescents from more religious households were not more likely to communicate with peers about sexual values.***

***Parent and Adolescent Religious Service Attendance.*** Parent and adolescent religiosity were among the most consistent predictors of peer, parent, and adolescent attitudes across all of our specifications. However, adolescents from more religious households did *not* report significantly higher levels of communication about sexual values with their peers.

***Overall peer attitudes about sex and abstinence were not associated with frequency of peer-adolescent communication about sexual values.***

***Peer Attitudes and Communication.*** We did not find any association between overall peer attitudes and the frequency of peer communication about sexual values, adjusting for other included factors. In general, levels of peer communication also did not appear to be sensitive to other factors that tend to be predictive of more conservative attitudes, such as religiosity and socioeconomic status.

It additionally seems clear based on the associations reported above that there were no consistent links between peer attitudes and communication levels across subgroups. For example, while peer attitudes were less conservative among peers of blacks, males, and older adolescents, communication levels were variously unchanged, lower, and higher across these three groups.

***Adolescents who had participated in a class, program, or event that talked about waiting to have sexual intercourse until marriage in past year reported more frequent discussion of sexual values with their peers.***

***Adolescent Participation in Class, Program, or Event that Talked about Waiting to Have Sex Until Marriage.*** Adolescents who had participated in a class, program, or event that talked about waiting to have sexual intercourse until marriage in past year engaged in more frequent conversations with peers about sexual values. Along with adolescent gender and age, this was one of the only factors significantly associated with frequency of peer communication.

***Exposure to Specific Sex and Abstinence Topics Covered in a Class or Program.*** Adolescents who said that they had been taught the basics of how babies are made, pregnancy, or birth in a class or other program reported greater frequency of communication with their peers about sexual values. This was the only specific sex or abstinence topic associated with any difference in levels of peer communication.

## **Appendix C. Statistical Tables**

**Table C-1.**  
**Parent Attitudes about Sex and Abstinence: Percent Agreement with Specific Views**

Issue	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
<b>General Parent Attitudes on Sex and Abstinence</b>				
Having sexual intercourse is something only married people should do (N=993)	47.6 (43.1-52.1) SE=2.3	22.2 (18.4-26.1) SE=2.0	17.8 (14.5-21.1) SE=1.7	12.3 (10.0-14.7) SE=1.2
It is against your values for your [child/teenager] to have sexual intercourse before marriage (N=993)	54.7 (50.3-59.2) SE=2.3	16.4 (13.3-19.5) SE=1.6	15.5 (12.8-18.2) SE=1.4	13.4 (10.2-16.5) SE=1.6
<b>Parent Attitudes about Permissible Sexual Behavior for Their Adolescents</b>				
Having sexual intercourse is a good thing to do at your [child's/teenager's] age (N=999)	1.1 (0.2-2.0) SE=0.5	2.6 (1.3-3.8) SE=0.6	6.0 (4.2-7.8) SE=0.9	90.3 (88.0-92.6) SE=1.2
At your [child's/teenager's] age right now, it would be okay for them to have sexual intercourse as long as he/she and his/her partner think that it is okay (N=999)	1.5 (0.5-2.5) SE=0.5	4.1 (2.5-5.7) SE=0.8	10.4 (7.3-13.5) SE=1.6	84.0 (80.5-87.5) SE=1.8
At your [child's/teenager's] age right now, having sexual intercourse would create problems or would make life difficult (N=997)	82.2 (78.8-85.7) SE=1.8	9.4 (6.5-12.2) SE=1.5	4.9 (3.2-6.5) SE=0.9	3.5 (2.1-5.0) SE=0.8
At your [child's/teenager's] age right now, it would be okay for them to have sexual intercourse if he/she has been dating the same person for at least one year (N=989)	2.5 (1.0-4.0) SE=0.5	6.6 (4.2-8.9) SE=1.2	8.1 (5.9-10.3) SE=1.1	82.8 (79.4-86.2) SE=1.7
It would be okay for your [child/teenager] to have sexual intercourse before he/she leaves high school (N=989)	1.8 (0.7-2.8) SE=0.5	8.5 (6.5-10.5) SE=1.0	13.7 (11.1-16.3) SE=1.3	76.0 (72.7-79.4) SE=1.7
At your [child's/teenager's] age right now, it would be okay for your child to have sexual intercourse if he/she uses birth control (N=994)	3.3 (1.9-4.7) SE=0.7	7.4 (5.1-9.7) SE=1.2	9.4 (6.8-12.0) SE=1.3	79.9 (76.5-83.4) SE=1.8
At your [child's/teenager's] age right now, it would be okay for them to have sexual intercourse if he/she plans to marry the person (N=990)	3.1 (1.7-4.5) SE=0.7	11.9 (9.0-14.8) SE=1.5	10.6 (7.8-13.5) SE=1.5	74.4 (70.4-78.3) SE=2.0
<b>Parent Self-Perceived Control over Adolescent Sexual Behavior</b>				
At your [child's/teenager's] age right now, there is little you can do to keep them from engaging in sexual intercourse (N=997)	14.6 (11.4-17.9) SE=1.7	18.9 (15.2-22.6) SE=1.9	15.6 (12.5-18.6) SE=1.6	50.9 (46.4-55.4) SE=2.3

Notes: The values in parentheses represent the 95 percent confident interval. SE = Standard Error of Percent.



**Table C-2.****Adolescent Attitudes about Sex and Abstinence: Percent Agreement with Specific Views**

<b>Issue</b>	<b>Strongly Agree</b>	<b>Somewhat Agree</b>	<b>Somewhat Disagree</b>	<b>Strongly Disagree</b>
<b>General Adolescent Attitudes on Sex and Abstinence</b>				
It is against your values for you to have sexual intercourse before marriage (N=991)	35.1 (30.8-39.4) SE=2.2	18.4 (15.1-21.7) SE=1.7	24.4 (20.5-28.2) SE=2.0	22.2 (18.1-26.2) SE=2.0
Having sexual intercourse is something only married people should do (N=997)	38.5 (34.0-42.9) SE=2.3	23.0 (19.2-26.8) SE=2.0	21.5 (17.8-25.2) SE=1.9	17.1 (13.8-20.3) SE=1.6
<b>Adolescent Attitudes about Permissible Sexual Behavior</b>				
Having sexual intercourse is a good thing to do at your age (N=997)	4.0 (1.6-6.3) SE=1.2	14.2 (11.1-17.3) SE=1.6	22.9 (19.0-26.8) SE=2.0	58.9 (54.4-63.4) SE=2.3
At your age right now, it would be okay for you to have sexual intercourse as long as you and your partner think that it is okay (N=999)	13.7 (10.1-17.4) SE=1.8	20.4 (16.7-24.1) SE=1.9	13.1 (10.5-15.7) SE=1.3	52.7 (48.2-57.2) SE=2.3
At your age right now, having sexual intercourse would create problems or would make life difficult (N=999)	52.6 (48.1-57.2) SE=2.3	20.9 (17.2-24.5) SE=1.9	12.1 (9.1-15.1) SE=1.5	14.4 (10.8-17.9) SE=1.8
At your age right now, it would be okay for you to have sexual intercourse if you have been dating the same person for at least one year (N=994)	14.3 (10.7-17.9) SE=1.8	17.5 (14.1-21.0) SE=1.7	18.4 (14.8-22.0) SE=1.8	49.7 (45.2-54.3) SE=2.3
It would be okay for you to have sexual intercourse before you leave high school (N=996)	8.6 (6.1-11.1) SE=1.3	24.4 (20.6-28.3) SE=2.0	19.6 (15.9-23.2) SE=1.9	47.4 (42.8-51.9) SE=2.3
At your age right now, it would be okay for you to have sexual intercourse if you use birth control (N=997)	10.4 (7.5-13.3) SE=1.5	19.8 (16.1-23.5) SE=1.9	17.1 (13.7-20.4) SE=1.7	52.7 (48.2-57.2) SE=2.3
At your age right now, it would be okay for you to have sexual intercourse before marriage if you have plans to marry the person (N=996)	15.2 (11.8-18.6) SE=1.7	23.5 (19.5-27.6) SE=2.1	17.7 (14.6-20.9) SE=1.6	43.5 (39.1-48.0) SE=2.3
<b>Adolescent Perceptions of Parental Control over Their Sexual Behavior</b>				
At your age right now, there is little your parent can do to keep you from engaging in sexual intercourse (N=995)	18.5 (15.0-22.0) SE=1.8	27.2 (23.4-31.0) SE=1.9	20.1 (16.4-23.7) SE=1.8	34.2 (29.8-38.6) SE=2.3
Notes: The values in parentheses represent the 95 percent confident interval. SE = Standard Error of Percent.				

**Table C-3.****Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for General Frequency of Parent-Adolescent Communication (N=732)**

<i>Association with odds that parent...</i>	<i>Ever talked about sex or sexual issues with adolescent</i>			<i>Talked about sexual values with adolescent in past year</i>			<i>Average association with parent-adolescent communication</i>		
	OR		p-value	OR		p-value	OR		p-value
<b>Parent demographics</b>									
Age	0.962	*	(0.029)	0.970	*	(0.040)	0.966	*	(0.026)
Male	0.409	*	(0.003)	0.478	*	(0.009)	0.442	*	(0.003)
<i>Race/ ethnicity</i>									
Black	9.328	*	(0.024)	4.557	*	(0.039)	6.520	*	(0.025)
Hispanic	0.457		(0.177)	0.526		(0.279)	0.490		(0.198)
English not primary language at home	0.836		(0.783)	1.052		(0.938)	0.937		(0.918)
<i>Educational attainment</i>									
Less than HS diploma	0.347		(0.259)	0.323		(0.115)	0.335		(0.162)
HS diploma only	0.167	*	(0.040)	0.200	*	(0.006)	0.183	*	(0.013)
Some college	0.283		(0.088)	0.266	*	(0.015)	0.275	*	(0.034)
College diploma	0.422		(0.135)	0.339	*	(0.008)	0.378	*	(0.033)
<i>Marital status</i>									
Divorced or separated	0.817		(0.679)	0.912		(0.792)	0.863		(0.709)
Never married	0.425		(0.190)	0.702		(0.535)	0.546		(0.296)
Single parent	1.063		(0.898)	0.708		(0.324)	0.867		(0.712)
<b>Household socioeconomic status</b>									
Income	1.004		(0.956)	0.900		(0.107)	0.951		(0.430)
<i>Maximum educational attainment</i>									
HS diploma or less	2.003		(0.390)	1.518		(0.454)	1.743		(0.391)
Some college	4.490	*	(0.028)	3.262	*	(0.011)	3.827	*	(0.014)
College diploma	1.576		(0.396)	1.727		(0.121)	1.650		(0.230)
Urban residence	1.860	*	(0.038)	1.279		(0.379)	1.543		(0.110)
<i>Geographic region of residence</i>									
Midwest	1.481		(0.346)	1.303		(0.439)	1.389		(0.356)
West	1.048		(0.908)	0.827		(0.562)	0.931		(0.836)
South	1.192		(0.668)	1.274		(0.470)	1.232		(0.551)
<b>Adolescent demographics</b>									
Grade	1.079		(0.324)	0.974		(0.675)	1.025		(0.710)
Male	1.328		(0.314)	1.043		(0.857)	1.177		(0.502)
<i>Race/ ethnicity</i>									
Black	0.263		(0.127)	0.549		(0.389)	0.380		(0.204)
Hispanic	0.550		(0.221)	0.803		(0.650)	0.664		(0.373)
<b>Religiosity</b>									
Parent church attendance	0.946		(0.839)	0.987		(0.950)	0.966		(0.881)
Adolescent church attendance	1.193		(0.467)	1.121		(0.563)	1.156		(0.489)
<b>Parent attitudes about sex &amp; abstinence</b>									
<i>General attitudes</i>									
Sex before marriage against values	1.227		(0.557)	1.095		(0.757)	1.159		(0.627)
Sex for married people only	1.098		(0.819)	1.051		(0.878)	1.074		(0.835)

**Table C-3.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for General Frequency of Parent-Adolescent Communication (N=732)**

Association with odds that parent...	Ever talked about sex or sexual issues with adolescent		Talked about sexual values with adolescent in past year		Average association with parent-adolescent communication	
	OR	p-value	OR	p-value	OR	p-value
<i>Permissible adolescent behavior</i>						
Sex good thing to do	0.730	(0.836)	0.976	(0.981)	0.844	(0.886)
Sex okay if adolescent & partner think so	0.766	(0.797)	0.762	(0.696)	0.764	(0.739)
Sex would make life difficult	0.560	(0.241)	0.480	(0.072)	0.519	(0.123)
Sex okay if dating +1 year	1.914	(0.511)	1.710	(0.364)	1.809	(0.412)
Sex okay before finish HS	1.181	(0.716)	1.131	(0.719)	1.156	(0.692)
Sex okay if birth control used	0.428	(0.280)	0.513	(0.204)	0.469	(0.215)
Sex okay if plan to marry	0.336	(0.056)	0.425 *	(0.028)	0.378 *	(0.024)
Perceived parental control	1.077	(0.578)	1.065	(0.574)	1.071	(0.548)
<b>Relationship quality</b>						
<i>Parent assessment</i>						
Frequency sharing enjoyed activities with adolescent	1.202	(0.546)	1.075	(0.792)	1.137	(0.644)
Closeness of relationship	1.768 *	(0.038)	1.227	(0.413)	1.472	(0.117)
Overall relationship quality	0.833	(0.582)	1.069	(0.791)	0.944	(0.832)
<i>Adolescent assessment</i>						
Frequency sharing enjoyed activities with adolescent	1.174	(0.382)	1.119	(0.526)	1.146	(0.420)
Closeness of relationship	1.362	(0.110)	1.204	(0.321)	1.280	(0.174)
Overall relationship quality	0.853	(0.547)	0.895	(0.593)	0.873	(0.546)
<b>Exposure to Information in Class or Program</b>						
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	0.846	(0.574)	1.016	(0.943)	0.927	(0.757)
<i>Adolescent exposure to specific topics</i>						
How babies are made	5.645 *	(0.000)	4.501 *	(0.000)	5.041 *	(0.000)
Good romantic relationships	0.746	(0.359)	0.687	(0.127)	0.716	(0.210)
How to behave on dates	1.586	(0.166)	1.727 *	(0.025)	1.655	(0.066)
Resisting pressure to have sex	0.780	(0.551)	0.936	(0.857)	0.854	(0.672)
Waiting till marriage to have sex	0.884	(0.686)	1.149	(0.564)	1.008	(0.975)
Religious values and sex	1.473	(0.188)	1.668 *	(0.024)	1.567	(0.068)
<b>Parent-Reported Communication</b>	4.223 *	(0.002)	1.998 *	(0.000)	2.905 *	(0.000)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-4.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for Frequency of Parent-Adolescent Communication about Specific Topics (N=734)**

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>																
Age	0.975	(0.116)	0.985	(0.317)	0.979	(0.134)	0.981	(0.262)	0.998	(0.902)	0.990	(0.498)	0.986	(0.302)	0.985	(0.107)
Male	0.477 *	(0.005)	0.441 *	(0.004)	0.720	(0.206)	0.682	(0.190)	0.483 *	(0.015)	0.846	(0.539)	0.834	(0.546)	0.620 *	(0.013)
<i>Race/ ethnicity</i>																
Black	0.266	(0.067)	0.913	(0.868)	1.061	(0.927)	0.117 *	(0.005)	0.522	(0.218)	0.529	(0.406)	1.635	(0.460)	0.541	(0.148)
Hispanic	0.506	(0.105)	1.015	(0.972)	0.222 *	(0.007)	0.246 *	(0.011)	0.494	(0.290)	0.566	(0.309)	0.245 *	(0.024)	0.409 *	(0.011)
English not primary language at home	0.594	(0.222)	0.600	(0.465)	0.365	(0.058)	0.265 *	(0.044)	0.434	(0.187)	1.298	(0.682)	1.420	(0.596)	0.599	(0.172)
<i>Educational attainment</i>																
Less than HS diploma	1.434	(0.611)	2.200	(0.277)	0.635	(0.459)	0.508	(0.343)	1.003	(0.997)	0.647	(0.492)	1.038	(0.953)	0.948	(0.906)
HS diploma only	1.145	(0.792)	1.209	(0.722)	0.880	(0.800)	0.381	(0.109)	0.900	(0.825)	0.427	(0.077)	0.953	(0.930)	0.777	(0.478)
Some college	1.284	(0.623)	1.365	(0.517)	0.807	(0.673)	0.346	(0.052)	1.076	(0.875)	0.563	(0.204)	0.832	(0.715)	0.819	(0.565)
College diploma	1.044	(0.897)	1.190	(0.662)	1.131	(0.778)	0.696	(0.375)	1.079	(0.834)	0.779	(0.496)	1.377	(0.444)	1.018	(0.947)
<i>Marital status</i>																
Divorced or separated	1.176	(0.680)	1.470	(0.337)	0.665	(0.288)	0.682	(0.262)	0.776	(0.554)	0.478 *	(0.031)	1.112	(0.780)	0.851	(0.522)
Never married	1.214	(0.743)	1.811	(0.220)	1.491	(0.465)	0.900	(0.818)	1.992	(0.196)	1.081	(0.879)	0.419	(0.074)	1.150	(0.676)
Single parent	1.583	(0.192)	1.003	(0.993)	1.429	(0.379)	1.377	(0.386)	1.363	(0.451)	0.847	(0.635)	1.234	(0.526)	1.238	(0.381)
<b>Household socioeconomic status</b>																
Income	0.964	(0.509)	1.043	(0.527)	0.903	(0.098)	0.953	(0.403)	0.998	(0.972)	0.998	(0.977)	1.074	(0.220)	0.989	(0.786)
<i>Maximum educational attainment</i>																
HS diploma or less	0.728	(0.539)	0.674	(0.469)	0.688	(0.437)	1.546	(0.444)	0.565	(0.237)	1.830	(0.176)	1.688	(0.308)	0.987	(0.968)
Some college	1.094	(0.847)	0.931	(0.877)	1.221	(0.647)	2.817 *	(0.034)	1.318	(0.515)	2.735 *	(0.009)	1.523	(0.333)	1.526	(0.155)
College diploma	1.127	(0.704)	0.788	(0.500)	0.934	(0.855)	1.412	(0.348)	1.110	(0.748)	1.618	(0.089)	0.819	(0.593)	1.081	(0.726)
Urban residence	1.578	(0.101)	0.878	(0.603)	0.807	(0.440)	0.942	(0.848)	1.331	(0.282)	1.003	(0.989)	0.973	(0.921)	1.046	(0.815)
<i>Geographic region of residence</i>																
Midwest	1.565	(0.123)	1.304	(0.420)	0.976	(0.937)	0.935	(0.821)	0.808	(0.486)	1.156	(0.643)	0.825	(0.566)	1.053	(0.813)
West	1.062	(0.847)	1.508	(0.213)	1.282	(0.454)	1.060	(0.856)	0.835	(0.561)	1.178	(0.580)	1.356	(0.352)	1.164	(0.498)
South	1.485	(0.155)	1.594	(0.145)	1.258	(0.394)	1.063	(0.835)	1.221	(0.528)	1.775 *	(0.023)	1.238	(0.482)	1.357	(0.136)
<b>Adolescent demographics</b>																
Grade	1.122	(0.064)	1.107	(0.110)	1.192 *	(0.007)	1.142 *	(0.032)	1.108	(0.107)	1.161 *	(0.009)	1.265 *	(0.000)	1.156 *	(0.001)
Male	0.705	(0.094)	0.763	(0.220)	0.958	(0.832)	1.226	(0.325)	0.636 *	(0.025)	0.461 *	(0.000)	0.996	(0.986)	0.785	(0.083)
<i>Race/ ethnicity</i>																
Black	3.874	(0.060)	2.147	(0.124)	0.591	(0.417)	2.884	(0.157)	0.927	(0.878)	0.740	(0.658)	0.899	(0.868)	1.363	(0.446)
Hispanic	1.389	(0.417)	0.976	(0.948)	2.177	(0.109)	1.735	(0.291)	1.024	(0.965)	0.352	(0.056)	2.489	(0.102)	1.243	(0.500)

**Table C-4.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for Frequency of Parent-Adolescent Communication about Specific Topics (N=734)**

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Religiosity</b>																
Parent church attendance	1.046	(0.806)	0.909	(0.580)	0.855	(0.364)	1.235	(0.233)	0.832	(0.333)	1.018	(0.922)	1.385	(0.093)	1.024	(0.850)
Adolescent church attendance	1.190	(0.290)	1.287	(0.107)	1.217	(0.275)	1.047	(0.789)	1.373	(0.095)	1.964 *	(0.000)	2.179 *	(0.000)	1.417 *	(0.003)
<b>Parent attitudes about sex &amp; abstinence</b>																
<i>General attitudes</i>																
Sex before marriage against values	0.897	(0.689)	1.093	(0.757)	0.932	(0.782)	1.367	(0.248)	0.854	(0.578)	1.122	(0.687)	1.262	(0.425)	1.061	(0.749)
Sex for married people only	0.961	(0.879)	0.940	(0.809)	0.856	(0.562)	0.414 *	(0.001)	1.177	(0.572)	1.064	(0.849)	0.932	(0.820)	0.869	(0.474)
<i>Permissible adolescent behavior</i>																
Sex good thing to do	0.358	(0.103)	0.479	(0.263)	0.174 *	(0.001)	0.511	(0.276)	0.202 *	(0.031)	0.453	(0.362)	0.131 *	(0.042)	0.293 *	(0.016)
Sex okay if adolescent & partner think so	1.084	(0.886)	1.736	(0.530)	1.386	(0.565)	0.774	(0.668)	1.787	(0.387)	2.804	(0.235)	5.135	(0.150)	1.758	(0.267)
Sex would make life difficult	0.898	(0.737)	0.622	(0.200)	1.243	(0.446)	0.932	(0.840)	0.794	(0.460)	1.881	(0.126)	1.548	(0.302)	1.059	(0.788)
Sex okay if dating +1 year	0.840	(0.724)	1.294	(0.697)	1.670	(0.331)	1.097	(0.875)	0.764	(0.664)	0.392	(0.157)	1.163	(0.768)	0.949	(0.899)
Sex okay before finish HS	0.929	(0.845)	1.005	(0.990)	0.997	(0.994)	1.182	(0.586)	1.247	(0.511)	0.778	(0.505)	0.854	(0.619)	0.987	(0.955)
Sex okay if birth control used	0.699	(0.336)	0.535	(0.082)	0.691	(0.332)	0.712	(0.457)	1.083	(0.857)	0.952	(0.916)	0.532	(0.165)	0.720	(0.265)
Sex okay if plan to marry	0.822	(0.444)	0.697	(0.317)	0.930	(0.801)	1.202	(0.663)	1.039	(0.912)	1.387	(0.375)	2.104 *	(0.048)	1.099	(0.649)
Perceived parental control	1.273 *	(0.048)	1.179	(0.113)	1.196	(0.110)	1.175	(0.125)	1.169	(0.192)	1.262 *	(0.035)	1.302 *	(0.018)	1.221 *	(0.008)
<b>Relationship quality</b>																
<i>Parent assessment</i>																
Frequency sharing enjoyed activities with adolescent	1.283	(0.395)	0.950	(0.823)	1.233	(0.325)	1.121	(0.613)	0.883	(0.598)	0.750	(0.242)	0.971	(0.915)	1.012	(0.947)
Closeness of relationship	1.652 *	(0.048)	1.042	(0.856)	1.369	(0.148)	0.881	(0.547)	1.255	(0.362)	0.931	(0.742)	1.098	(0.688)	1.150	(0.346)
Overall relationship quality	0.621	(0.056)	1.020	(0.933)	1.268	(0.364)	1.254	(0.358)	0.881	(0.662)	1.104	(0.694)	1.258	(0.400)	1.030	(0.855)

**Table C-4.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for Frequency of Parent-Adolescent Communication about Specific Topics (N=734)**

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<i>Adolescent assessment</i>																
Frequency sharing enjoyed activities with adolescent	1.027	(0.857)	1.052	(0.724)	0.888	(0.414)	0.896	(0.405)	1.038	(0.801)	1.010	(0.951)	0.988	(0.943)	0.984	(0.870)
Closeness of relationship	1.741 *	(0.002)	1.128	(0.541)	1.645 *	(0.004)	2.065 *	(0.000)	1.522 *	(0.020)	1.142	(0.475)	1.500	(0.051)	1.504 *	(0.001)
Overall relationship quality	0.880	(0.611)	1.053	(0.834)	0.926	(0.751)	0.718	(0.115)	1.254	(0.285)	1.617	(0.055)	1.045	(0.844)	1.039	(0.795)
<b>Exposure to Information in Class or Program</b>																
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	0.837	(0.362)	0.824	(0.355)	1.592 *	(0.039)	1.684 *	(0.027)	1.239	(0.306)	1.015	(0.938)	1.488	(0.067)	1.194	(0.220)
<i>Adolescent exposure to specific topics</i>																
How babies are made	3.083 *	(0.000)	2.776 *	(0.009)	1.518	(0.247)	1.775	(0.120)	1.176	(0.627)	2.228 *	(0.016)	1.438	(0.246)	1.892 *	(0.006)
Good romantic relationships	0.658	(0.052)	0.665	(0.102)	1.363	(0.200)	0.981	(0.936)	1.167	(0.531)	0.974	(0.910)	1.244	(0.410)	0.973	(0.864)
How to behave on dates	1.515	(0.067)	2.020 *	(0.002)	1.626 *	(0.038)	1.909 *	(0.004)	1.330	(0.244)	1.044	(0.850)	1.141	(0.574)	1.473 *	(0.012)
Resisting pressure to have sex	1.127	(0.700)	1.350	(0.496)	1.405	(0.344)	1.141	(0.727)	2.236 *	(0.026)	1.293	(0.427)	0.903	(0.774)	1.303	(0.305)
Waiting till marriage to have sex	0.570 *	(0.033)	0.653	(0.117)	0.643	(0.068)	1.328	(0.196)	1.161	(0.509)	1.621	(0.079)	1.615	(0.060)	0.995	(0.973)
Religious values and sex	2.228 *	(0.001)	2.036 *	(0.004)	1.175	(0.505)	1.077	(0.733)	1.063	(0.800)	1.009	(0.971)	2.778 *	(0.000)	1.500 *	(0.007)
<b>Parent-Reported Communication</b>	2.033 *	(0.000)	2.567 *	(0.000)	1.322 *	(0.004)	1.491 *	(0.000)	1.727 *	(0.000)	1.707 *	(0.000)	1.569 *	(0.000)	1.736 *	(0.000)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-5.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for Specific Messages**

Association with odds that parent ever told adolescent...	<i>Young people should not engage in sex until marriage</i>		<i>Young people should not have sex until they are with someone they would like to marry</i>		<i>Young people should not have sex until at least finishing high school</i>		<i>It's okay for young people to have sex if they use a condom</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>								
Age	0.983	* (0.019)	0.969	* (0.019)	1.001	* (0.017)	0.983	* (0.020)
Male	2.475	(0.821)	1.195	(0.329)	0.782	(0.207)	0.795	(0.248)
<i>Race/ ethnicity</i>								
Black	0.171	(0.146)	1.023	(0.683)	1.949	(1.565)	1.154	(0.815)
Hispanic	0.394	(0.249)	1.720	(0.869)	3.027	(1.652)	1.557	(0.859)
English not primary language at home	1.402	(1.066)	1.031	(0.643)	0.883	(0.669)	1.894	(1.216)
<i>Educational attainment</i>								
Less than HS diploma	1.766	(1.927)	0.721	(0.479)	1.941	(1.344)	0.472	(0.371)
HS diploma only	0.722	(0.717)	0.491	(0.268)	0.713	(0.420)	0.308	(0.206)
Some college	1.238	(1.134)	0.371	(0.190)	0.921	(0.468)	0.218	(0.140)
College diploma	0.284	(0.175)	0.701	(0.321)	1.144	(0.469)	0.854	(0.435)
<i>Marital status</i>								
Divorced or separated	1.445	(0.668)	0.574	(0.244)	0.320	(0.131)	1.164	(0.468)
Never married	2.566	(1.825)	0.355	(0.191)	1.315	(0.729)	0.689	(0.409)
Single parent	0.447	(0.193)	2.343	(0.994)	2.961	(1.218)	1.711	(0.699)
<b>Household socioeconomic status</b>								
Income	1.254	(0.092)	0.951	(0.055)	1.011	(0.063)	0.880	(0.058)
<i>Maximum educational attainment</i>								
HS diploma or less	0.692	(0.645)	1.222	(0.634)	0.879	(0.515)	3.510	(2.225)
Some college	0.687	(0.590)	2.902	(1.279)	1.669	(0.796)	2.251	(1.293)
College diploma	2.255	(1.343)	1.284	(0.497)	0.763	(0.285)	0.806	(0.345)
Urban residence	1.435	(0.499)	1.334	(0.375)	0.919	(0.266)	0.516	(0.174)
<i>Geographic region of residence</i>								
Midwest	1.011	(0.436)	0.485	(0.163)	0.525	(0.179)	0.708	(0.258)
West	0.984	(0.451)	0.845	(0.288)	0.545	(0.188)	0.984	(0.354)
South	1.500	(0.668)	0.329	(0.106)	0.351	(0.118)	0.602	(0.192)

**Table C-5.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for Specific Messages**

Association with odds that parent ever told adolescent...	<i>Young people should not engage in sex until marriage</i>		<i>Young people should not have sex until they are with someone they would like to marry</i>		<i>Young people should not have sex until at least finishing high school</i>		<i>It's okay for young people to have sex if they use a condom</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Adolescent demographics</b>								
Grade	0.889	(0.067)	0.959	(0.062)	0.887	(0.054)	1.039	(0.074)
Male	0.271	(0.079)	0.793	(0.173)	0.819	(0.180)	1.863	(0.489)
<i>Race/ ethnicity</i>								
Black	2.993	(2.633)	0.452	(0.301)	0.272	(0.214)	2.484	(1.762)
Hispanic	1.397	(0.801)	0.482	(0.230)	0.542	(0.262)	1.128	(0.561)
<b>Religiosity</b>								
Parent church attendance	1.432	(0.333)	1.383	(0.283)	0.963	(0.185)	0.760	(0.161)
Adolescent church attendance	2.051	(0.429)	0.613	(0.113)	1.040	(0.180)	0.559	(0.112)
<b>Parent attitudes about sex &amp; abstinence</b>								
<i>General attitudes</i>								
Sex before marriage against values	3.004	(0.957)	0.479	(0.134)	1.251	(0.394)	1.354	(0.420)
Sex for married people only	1.853	(0.703)	1.323	(0.393)	0.484	(0.163)	0.420	(0.128)
<i>Permissible adolescent behavior</i>								
Sex good thing to do	0.296	(0.262)	0.332	(0.256)	0.458	(0.354)	3.236	(2.648)
Sex okay if adolescent & partner think so	1.273	(0.855)	2.458	(1.805)	1.748	(1.187)	0.604	(0.466)
Sex would make life difficult	2.003	(0.934)	0.444	(0.179)	1.080	(0.446)	0.523	(0.246)
Sex okay if dating +1 year	2.157	(1.318)	3.962	(2.243)	0.884	(0.472)	0.517	(0.294)
Sex okay before finish HS	0.763	(0.351)	1.070	(0.425)	1.643	(0.579)	1.762	(0.712)
Sex okay if birth control used	1.781	(0.946)	0.777	(0.370)	0.815	(0.349)	0.778	(0.397)
Sex okay if plan to marry	2.367	(1.203)	0.955	(0.335)	2.118	(0.913)	0.496	(0.212)
Perceived parental control	1.090	(0.148)	0.906	(0.109)	0.924	(0.104)	0.820	(0.100)
<b>Relationship quality</b>								
<i>Parent assessment</i>								
Frequency sharing enjoyed activities with adolescent	0.774	(0.204)	0.728	(0.194)	1.311	(0.314)	1.094	(0.322)
Closeness of relationship	0.591	(0.180)	1.160	(0.258)	1.149	(0.275)	0.573	(0.159)
Overall relationship quality	1.671	(0.544)	0.997	(0.254)	1.245	(0.346)	2.230	(0.762)



**Table C-5.**  
**Estimated Associations for Adolescent-Reported Communication — Results of Logistic Regressions for Specific Messages**

Association with odds that parent ever told adolescent...	<i>Young people should not engage in sex until marriage</i>		<i>Young people should not have sex until they are with someone they would like to marry</i>		<i>Young people should not have sex until at least finishing high school</i>		<i>It's okay for young people to have sex if they use a condom</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<i>Adolescent assessment</i>								
Frequency sharing enjoyed activities with adolescent	1.120	(0.206)	1.231	(0.187)	1.211	(0.189)	1.356	(0.233)
Closeness of relationship	1.073	(0.239)	1.133	(0.239)	0.595	(0.112)	1.026	(0.201)
Overall relationship quality	1.422	(0.391)	0.882	(0.224)	1.224	(0.306)	0.800	(0.223)
<b>Exposure to Information in Class or Program</b>								
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	0.945	(0.286)	0.825	(0.182)	0.918	(0.215)	0.842	(0.217)
<i>Adolescent exposure to specific topics</i>								
How babies are made	0.885	(0.402)	2.579	(0.937)	1.081	(0.425)	2.207	(1.120)
Good romantic relationships	0.997	(0.303)	1.204	(0.311)	1.221	(0.318)	1.160	(0.348)
How to behave on dates	0.579	(0.170)	0.870	(0.219)	1.500	(0.373)	1.228	(0.351)
Resisting pressure to have sex	1.051	(0.416)	1.876	(0.645)	0.994	(0.331)	0.903	(0.382)
Waiting till marriage to have sex	4.794	(1.520)	1.590	(0.433)	1.121	(0.292)	0.677	(0.198)
Religious values and sex	1.005	(0.295)	0.504	(0.127)	0.536	(0.136)	0.737	(0.193)
<b>Parent-Reported Communication</b>	1.886	(0.628)	2.288	(0.532)	1.608	(0.347)	0.965	(0.299)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-6.**  
**Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for General Attitudes about Sex and Abstinence (N=715)**

Association with odds that adolescent...	...agreed that "it is against your values for you to have sexual intercourse before marriage."		...agreed that "having sexual intercourse is something only married people should do."		Average association with general attitudes about sex and abstinence.	
	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>						
Age	1.011	(0.520)	0.986	(0.584)	0.999	(0.927)
Male	0.570	(0.065)	2.194 *	(0.030)	1.118	(0.690)
Race/ ethnicity						
Black	1.233	(0.799)	0.443	(0.341)	0.739	(0.616)
Hispanic	0.350	(0.131)	0.199 *	(0.013)	0.264 *	(0.019)
English not primary language at home	1.119	(0.875)	0.893	(0.893)	1.000	(0.999)
Educational attainment						
Less than HS diploma	0.694	(0.657)	1.562	(0.648)	1.041	(0.954)
HS diploma only	0.649	(0.517)	1.361	(0.703)	0.940	(0.918)
Some college	0.781	(0.685)	0.679	(0.608)	0.728	(0.570)
College diploma	0.886	(0.824)	1.393	(0.630)	1.111	(0.831)
Marital status						
Divorced or separated	1.186	(0.690)	1.325	(0.592)	1.254	(0.552)
Never married	1.127	(0.853)	0.813	(0.743)	0.957	(0.926)
Single parent	0.404 *	(0.045)	0.400 *	(0.046)	0.402 *	(0.007)
<b>Household socioeconomic status</b>						
Income	1.073	(0.283)	0.960	(0.626)	1.015	(0.799)
Maximum educational attainment						
HS diploma or less	2.154	(0.227)	2.141	(0.353)	2.148	(0.185)
Some college	1.377	(0.551)	0.795	(0.737)	1.046	(0.930)
College diploma	1.019	(0.968)	0.671	(0.510)	0.827	(0.660)
Urban residence	1.774	(0.053)	1.513	(0.224)	1.638	(0.054)
Geographic region of residence						
Midwest	0.844	(0.655)	0.955	(0.918)	0.898	(0.747)
West	1.056	(0.896)	0.619	(0.296)	0.809	(0.564)
South	0.830	(0.615)	0.978	(0.957)	0.901	(0.742)

**Table C-6.**  
**Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for General Attitudes about Sex and Abstinence (N=715)**

Association with odds that adolescent...	...agreed that "it is against your values for you to have sexual intercourse before marriage."		...agreed that "having sexual intercourse is something only married people should do."		Average association with general attitudes about sex and abstinence.	
	OR	p-value	OR	p-value	OR	p-value
<b>Adolescent demographics</b>						
Grade	1.081	(0.350)	1.115	(0.326)	1.098	(0.199)
Male	0.611	(0.055)	0.569	(0.056)	0.589 *	(0.015)
Race/ ethnicity						
Black	0.827	(0.806)	1.596	(0.582)	1.149	(0.814)
Hispanic	1.917	(0.325)	1.774	(0.338)	1.844	(0.241)
<b>Religiosity</b>						
Parent church attendance	0.563 *	(0.009)	1.177	(0.544)	0.814	(0.279)
Adolescent church attendance	2.178 *	(0.000)	2.166 *	(0.004)	2.172 *	(0.000)
<b>Parent attitudes about sex &amp; abstinence</b>						
General attitudes						
Sex before marriage against values	1.810	(0.113)	2.045 *	(0.042)	1.924 *	(0.019)
Sex for married people only	1.098	(0.779)	1.249	(0.568)	1.171	(0.572)
Permissible adolescent behavior	0.784	(0.648)	1.670	(0.393)	1.145	(0.781)
Sex good thing to do						
Sex okay if adolescent & partner think so	0.976	(0.956)	0.991	(0.988)	0.984	(0.972)
Sex would make life difficult	2.911	(0.182)	0.051 *	(0.001)	0.386	(0.166)
Sex okay if dating +1 year	1.025	(0.975)	0.948	(0.945)	0.986	(0.978)
Sex okay before finish HS	1.509	(0.356)	4.602 *	(0.004)	2.635 *	(0.002)
Sex okay if birth control used	3.135 *	(0.025)	0.747	(0.596)	1.531	(0.315)
Sex okay if plan to marry	2.533	(0.113)	5.252 *	(0.048)	3.648 *	(0.038)
Perceived parental control	1.131	(0.348)	1.226	(0.180)	1.177	(0.161)
<b>Relationship quality</b>						
Parent assessment						
Frequency sharing enjoyed activities with adolescent	0.864	(0.567)	1.242	(0.460)	1.036	(0.873)
Closeness of relationship	0.549 *	(0.026)	0.676	(0.189)	0.609 *	(0.043)
Overall relationship quality	0.872	(0.689)	1.145	(0.728)	0.999	(0.999)
Adolescent assessment						
Frequency sharing enjoyed activities with adolescent	0.827	(0.256)	0.931	(0.722)	0.877	(0.380)
Closeness of relationship	1.276	(0.243)	0.593	(0.063)	0.870	(0.483)
Overall relationship quality	1.258	(0.352)	1.470	(0.244)	1.360	(0.186)

**Table C-6.**  
**Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for General Attitudes about Sex and Abstinence (N=715)**

Association with odds that adolescent...	...agreed that "it is against your values for you to have sexual intercourse before marriage."		...agreed that "having sexual intercourse is something only married people should do."		Average association with general attitudes about sex and abstinence.	
	OR	p-value	OR	p-value	OR	p-value
<b>Parent-adolescent communication</b>						
Comfort levels talking about sex						
Parent comfort level	1.137	(0.545)	1.383	(0.157)	1.254	(0.158)
Adolescent comfort level	1.147	(0.323)	1.531 *	(0.013)	1.325 *	(0.028)
General communication levels						
Ever talked about sex	0.355	(0.149)	0.212	(0.061)	0.274 *	(0.044)
Talked about sexual values, past year	0.463 *	(0.015)	1.037	(0.926)	0.693	(0.185)
Communication about specific topics						
How babies are made	0.724	(0.075)	1.089	(0.717)	0.888	(0.460)
STDs or HIV/AIDS	2.164 *	(0.000)	1.269	(0.387)	1.657 *	(0.005)
Good romantic relationships	0.891	(0.434)	0.642 *	(0.017)	0.756 *	(0.032)
How to behave on dates	1.228	(0.190)	1.095	(0.595)	1.160	(0.244)
Resisting pressure to have sex	0.794	(0.170)	0.580 *	(0.017)	0.679 *	(0.008)
Waiting till marriage to have sex	0.920	(0.621)	1.344	(0.154)	1.112	(0.503)
Religious values and sex	1.738 *	(0.000)	1.427	(0.054)	1.575 *	(0.000)
<b>Peer attitudes</b>						
Waiting till marriage to have sex	1.551 *	(0.012)	3.683 *	(0.000)	2.390 *	(0.000)
OK to have sex at adolescent's age	1.270	(0.134)	1.467	(0.058)	1.365 *	(0.029)
<b>Peer-adolescent communication</b>	0.667	(0.074)	0.462 *	(0.002)	0.555 *	(0.003)
<b>Exposure to Information in Class or Program</b>						
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	0.949	(0.832)	1.039	(0.893)	0.993	(0.974)
Adolescent exposure to specific topics						
How babies are made	1.426	(0.415)	0.690	(0.601)	0.992	(0.985)
Good romantic relationships	1.056	(0.857)	0.947	(0.881)	1.000	(1.000)
How to behave on dates	1.122	(0.694)	1.724	(0.100)	1.391	(0.199)
Resisting pressure to have sex	1.115	(0.804)	2.569 *	(0.049)	1.692	(0.142)
Waiting till marriage to have sex	2.451 *	(0.002)	1.217	(0.606)	1.727 *	(0.037)
Religious values and sex	2.182 *	(0.006)	1.580	(0.160)	1.857 *	(0.009)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-7.**  
**Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for Attitudes about Own Permissible Sexual Behavior**  
**(N=715)**

Association with odds that adolescent...	...disagreed that "having sexual intercourse is a good thing to do at your age."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse as long as [he/ she] and [his/ her] partner think that it is okay."		...agreed that "at your age right now, having sexual intercourse would create problems or would make life difficult."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse if you have been dating the same person for at least one year."		...disagreed that "it would be okay for you to have sexual intercourse before you finish high school."		...disagreed that "it would be okay for you to have sexual intercourse if you use birth control."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse if you plan to marry the person."		Average association with adolescent attitudes about own current sexual behavior.	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
Parent demographics																
Age	1.071	*(0.007)	1.037	(0.121)	1.053	*(0.007)	1.046	(0.051)	1.006	(0.812)	0.998	(0.945)	1.002	(0.923)	1.030	*(0.033)
Male	0.212	*(0.001)	1.351	(0.434)	0.997	(0.993)	1.357	(0.422)	1.960	(0.079)	0.759	(0.440)	1.906	(0.055)	1.013	(0.952)
Race/ ethnicity																
Black	18.009	*(0.012)	23.531	*(0.007)	0.097	*(0.015)	3.085	(0.148)	1.029	(0.976)	24.260	*(0.000)	1.227	(0.785)	3.257	*(0.016)
Hispanic	2.938	(0.199)	1.784	(0.543)	2.167	(0.268)	2.616	(0.207)	0.360	(0.130)	0.686	(0.613)	0.481	(0.232)	1.197	(0.721)
English not primary language at home	0.527	(0.420)	0.747	(0.720)	0.741	(0.698)	0.918	(0.915)	0.066	*(0.001)	1.753	(0.367)	0.664	(0.603)	0.574	(0.217)
Educational attainment																
Less than HS diploma	11.440	(0.087)	2.429	(0.422)	8.531	(0.054)	5.644	(0.125)	0.653	(0.661)	0.622	(0.627)	3.644	(0.217)	2.958	(0.118)
HS diploma only	23.106	*(0.019)	1.441	(0.646)	5.120	(0.095)	4.045	(0.091)	0.541	(0.423)	5.071	*(0.042)	4.670	(0.082)	3.662	*(0.020)
Some college	5.470	(0.193)	0.734	(0.667)	6.125	(0.073)	4.176	(0.066)	0.358	(0.172)	2.004	(0.361)	4.493	(0.080)	2.291	(0.132)
College diploma	4.705	(0.089)	0.648	(0.540)	5.542	(0.071)	2.322	(0.220)	1.104	(0.892)	3.403	(0.087)	0.769	(0.700)	1.965	(0.138)
Marital status																
Divorced or separated	0.655	(0.428)	1.175	(0.772)	1.133	(0.796)	0.583	(0.301)	2.199	(0.126)	2.371	(0.178)	1.698	(0.313)	1.240	(0.544)
Never married	0.521	(0.357)	0.806	(0.734)	3.245	(0.127)	2.116	(0.187)	1.296	(0.674)	1.674	(0.532)	0.405	(0.148)	1.142	(0.754)
Single parent	1.797	(0.308)	0.706	(0.498)	2.493	(0.068)	1.069	(0.887)	0.870	(0.744)	0.711	(0.558)	0.791	(0.647)	1.075	(0.817)
Household socioeconomic status																
Income	1.572	*(0.000)	1.071	(0.371)	1.090	(0.265)	1.194	*(0.026)	1.245	*(0.004)	1.050	(0.585)	1.061	(0.417)	1.172	*(0.001)
Maximum educational attainment																
HS diploma or less	0.088	(0.054)	0.772	(0.755)	0.094	*(0.012)	0.238	(0.083)	4.045	(0.056)	0.442	(0.329)	0.257	(0.112)	0.354	(0.069)
Some college	0.601	(0.673)	0.989	(0.986)	0.187	(0.077)	0.287	(0.083)	1.500	(0.500)	0.627	(0.498)	0.161	*(0.021)	0.467	(0.134)
College diploma	0.703	(0.689)	2.085	(0.257)	0.245	(0.098)	0.445	(0.195)	1.193	(0.776)	0.739	(0.617)	1.081	(0.899)	0.764	(0.522)
Urban residence	1.019	(0.972)	1.234	(0.653)	0.883	(0.734)	0.656	(0.403)	1.588	(0.230)	1.764	(0.153)	0.429	*(0.041)	0.981	(0.939)
Geographic region of residence																
Midwest	4.969	*(0.005)	2.142	(0.106)	2.221	(0.054)	2.180	(0.057)	2.052	(0.111)	1.634	(0.329)	2.760	*(0.017)	2.414	*(0.003)
West	1.401	(0.553)	0.649	(0.364)	1.370	(0.502)	1.578	(0.301)	1.337	(0.547)	0.605	(0.299)	1.492	(0.346)	1.132	(0.685)
South	3.928	*(0.014)	1.979	(0.149)	1.625	(0.257)	2.096	(0.101)	2.149	(0.103)	1.697	(0.330)	1.182	(0.682)	1.967	*(0.032)
Adolescent demographics																
Grade	0.782	*(0.037)	0.751	*(0.012)	1.103	(0.353)	0.731	*(0.001)	1.253	*(0.042)	0.692	*(0.001)	0.788	*(0.010)	0.851	*(0.012)
Male	0.198	*(0.000)	0.214	*(0.000)	0.587	(0.096)	0.309	*(0.000)	0.295	*(0.000)	0.722	(0.314)	0.333	*(0.000)	0.342	*(0.000)
Race/ ethnicity																
Black	0.041	*(0.007)	0.024	*(0.001)	1.540	(0.662)	0.168	*(0.014)	0.392	(0.362)	0.043	*(0.000)	0.520	(0.364)	0.156	*(0.000)
Hispanic	0.112	*(0.011)	0.311	(0.188)	0.397	(0.144)	0.116	*(0.003)	1.475	(0.520)	0.758	(0.709)	0.620	(0.412)	0.378	*(0.044)
Religiosity																
Parent church attendance	0.594	(0.090)	0.592	(0.051)	0.864	(0.591)	0.833	(0.511)	1.513	(0.120)	1.196	(0.518)	0.848	(0.504)	0.874	(0.418)
Adolescent church attendance	1.729	*(0.038)	2.768	*(0.000)	1.269	(0.323)	1.274	(0.294)	0.851	(0.507)	1.551	*(0.049)	1.709	*(0.012)	1.505	*(0.004)
Parent attitudes about sex & abstinence																
General attitudes																
Sex before marriage against values	0.821	(0.718)	1.453	(0.367)	1.063	(0.869)	2.028	(0.079)	2.295	*(0.018)	1.191	(0.653)	1.338	(0.446)	1.377	(0.188)
Sex for married people only	2.221	(0.149)	1.775	(0.198)	0.789	(0.596)	1.362	(0.440)	2.406	*(0.023)	1.168	(0.688)	1.076	(0.843)	1.440	(0.138)

**Table C-7.**  
**Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for Attitudes about Own Permissible Sexual Behavior (N=715)**

Association with odds that adolescent....	...disagreed that "having sexual intercourse is a good thing to do at your age."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse as long as [he/ she] and [his/ her] partner think that it is okay."		...agreed that "at your age right now, having sexual intercourse would create problems or would make life difficult."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse if you have been dating the same person for at least one year."		...disagreed that "it would be okay for you to have sexual intercourse before you finish high school."		...disagreed that "it would be okay for you to have sexual intercourse if you use birth control."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse if you plan to marry the person."		Average association with adolescent attitudes about own current sexual behavior.	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Current adolescent behavior</b>																
Sex good thing to do	0.201	(0.192)	1.219	(0.856)	6.072 *	(0.014)	0.396	(0.429)	0.418	(0.289)	1.394	(0.717)	0.193	(0.058)	0.679	(0.510)
Sex okay if adolescent & partner think so	1.321	(0.734)	0.736	(0.690)	0.184	(0.054)	1.982	(0.411)	0.494	(0.407)	0.781	(0.747)	1.235	(0.799)	0.776	(0.616)
Sex would make life difficult	0.498	(0.225)	3.505 *	(0.021)	3.352 *	(0.011)	0.919	(0.880)	2.142	(0.155)	5.619 *	(0.001)	2.169	(0.203)	2.027 *	(0.010)
Sex not okay before finish HS	1.095	(0.904)	1.176	(0.798)	0.776	(0.644)	0.812	(0.714)	0.923	(0.883)	0.616	(0.410)	0.653	(0.370)	0.842	(0.646)
Sex okay if dating +1 year	2.587	(0.228)	0.894	(0.853)	1.478	(0.543)	0.980	(0.977)	8.706 *	(0.004)	1.899	(0.345)	4.561 *	(0.010)	2.204 *	(0.047)
Sex okay if birth control used	0.612	(0.491)	0.612	(0.425)	1.185	(0.735)	1.554	(0.428)	0.446	(0.259)	1.348	(0.625)	1.148	(0.804)	0.899	(0.776)
Sex okay if plan to marry	2.544	(0.080)	2.761 *	(0.022)	1.307	(0.590)	1.386	(0.469)	0.853	(0.746)	1.197	(0.718)	1.456	(0.485)	1.522	(0.176)
Perceived parental control	1.765 *	(0.003)	1.392 *	(0.027)	1.620 *	(0.001)	1.349	(0.054)	1.738 *	(0.000)	1.377 *	(0.031)	1.044	(0.753)	1.449 *	(0.000)
<b>Relationship quality</b>																
<b>Parent assessment</b>																
Frequency sharing enjoyed activities with adolescent	0.689	(0.336)	0.631	(0.111)	1.161	(0.648)	0.377 *	(0.006)	0.365 *	(0.000)	0.450 *	(0.016)	0.255 *	(0.000)	0.502 *	(0.000)
Closeness of relationship	1.153	(0.720)	0.604	(0.111)	1.306	(0.370)	1.220	(0.468)	0.652	(0.140)	0.566	(0.077)	0.895	(0.726)	0.867	(0.454)
Overall relationship quality	0.747	(0.476)	0.506	(0.056)	0.762	(0.430)	0.474 *	(0.023)	0.783	(0.480)	1.005	(0.989)	1.336	(0.371)	0.758	(0.205)
<b>Adolescent assessment</b>																
Frequency sharing enjoyed activities with adolescent	0.748	(0.263)	0.726	(0.142)	1.381	(0.089)	0.882	(0.590)	1.202	(0.349)	1.342	(0.110)	0.870	(0.479)	0.990	(0.930)
Closeness of relationship	0.487	(0.060)	0.687	(0.139)	0.585 *	(0.034)	1.048	(0.847)	0.889	(0.633)	0.881	(0.653)	1.220	(0.398)	0.792	(0.135)
Overall relationship quality	1.228	(0.686)	2.961 *	(0.000)	1.634	(0.085)	2.605 *	(0.001)	1.525	(0.170)	1.058	(0.867)	1.443	(0.242)	1.669 *	(0.007)
<b>Parent-adolescent communication</b>																
<b>Comfort levels talking about sex</b>																
Parent comfort level	1.877 *	(0.017)	1.188	(0.503)	1.349	(0.150)	1.539 *	(0.021)	1.129	(0.556)	1.215	(0.484)	0.872	(0.495)	1.277	(0.079)
Adolescent comfort level	1.676 *	(0.024)	1.077	(0.657)	1.350	(0.105)	0.875	(0.462)	1.354	(0.059)	1.479 *	(0.027)	1.132	(0.443)	1.252 *	(0.040)
<b>General communication levels</b>																
Ever talked about sex	3.413	(0.216)	2.608	(0.264)	0.293	(0.208)	0.976	(0.976)	1.673	(0.532)	6.210	(0.055)	1.184	(0.841)	1.636	(0.354)
Talked about sexual values, past year	0.474	(0.061)	1.638	(0.200)	0.398 *	(0.015)	0.864	(0.760)	0.766	(0.475)	0.492	(0.089)	1.081	(0.828)	0.728	(0.152)
<b>Communication about specific topics</b>																
How babies are made	0.496 *	(0.013)	0.923	(0.723)	0.948	(0.802)	0.684	(0.086)	0.867	(0.510)	0.579 *	(0.027)	1.892 *	(0.014)	0.834	(0.178)
STDs or HIV/AIDS	1.506	(0.140)	1.360	(0.238)	1.159	(0.502)	1.968 *	(0.007)	1.696 *	(0.038)	2.270 *	(0.000)	0.961	(0.860)	1.502 *	(0.004)
Good romantic relationships	0.964	(0.884)	1.309	(0.184)	0.658 *	(0.006)	1.163	(0.442)	0.537 *	(0.001)	0.857	(0.391)	0.774	(0.223)	0.859	(0.171)
How to behave on dates	1.598 *	(0.046)	0.821	(0.324)	1.067	(0.717)	0.755	(0.170)	1.084	(0.649)	0.991	(0.959)	0.819	(0.293)	0.990	(0.921)
Resisting pressure to have sex	0.623	(0.076)	0.624	(0.090)	1.270	(0.238)	0.565 *	(0.004)	0.681	(0.092)	0.593 *	(0.019)	0.798	(0.230)	0.709 *	(0.005)
Waiting till marriage to have sex	1.299	(0.231)	0.832	(0.420)	0.798	(0.235)	0.991	(0.960)	1.345	(0.079)	1.510 *	(0.035)	1.112	(0.565)	1.098	(0.438)
Religious values and sex	1.237	(0.288)	1.221	(0.237)	1.919 *	(0.000)	1.447 *	(0.021)	1.304	(0.112)	1.386	(0.059)	1.466 *	(0.014)	1.411 *	(0.001)
<b>Peer attitudes</b>																
Waiting till marriage to have sex	1.832 *	(0.040)	2.559 *	(0.000)	1.702 *	(0.007)	1.908 *	(0.002)	4.238 *	(0.000)	2.682 *	(0.000)	1.274	(0.194)	2.161 *	(0.000)
OK to have sex at adolescent's age	2.638 *	(0.001)	2.681 *	(0.000)	1.379	(0.106)	2.244 *	(0.000)	2.887 *	(0.000)	1.507	(0.077)	1.914 *	(0.000)	2.104 *	(0.000)
<b>Peer-adolescent communication</b>	0.743	(0.284)	0.836	(0.472)	1.864 *	(0.007)	0.851	(0.537)	0.487 *	(0.003)	1.107	(0.643)	1.207	(0.397)	0.939	(0.659)

**Table C-7.**  
**Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for Attitudes about Own Permissible Sexual Behavior (N=715)**

Association with odds that adolescent....	...disagreed that "having sexual intercourse is a good thing to do at your age."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse as long as [he/ she] and [his/ her] partner think that it is okay."		...agreed that "at your age right now, having sexual intercourse would create problems or would make life difficult."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse if you have been dating the same person for at least one year."		...disagreed that "it would be okay for you to have sexual intercourse before you finish high school."		...disagreed that "it would be okay for you to have sexual intercourse if you use birth control."		...disagreed that "at your age right now, it would be okay for you to have sexual intercourse if you plan to marry the person."		Average association with adolescent attitudes about own current sexual behavior.				
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value			
Exposure to Information in Class or Program																			
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	2.105	(0.078)	1.390	(0.378)	0.891	(0.708)	1.307	(0.396)	2.138	*	(0.025)	1.388	(0.392)	0.976	(0.934)	1.387	(0.150)		
Adolescent exposure to specific topics																			
How babies are made	0.724	(0.573)	0.514	(0.222)	0.753	(0.537)	0.461	(0.209)	0.656	(0.413)	0.209	*	(0.003)	1.783	(0.208)	0.610	(0.095)		
Good romantic relationships	0.609	(0.249)	0.354	*	(0.018)	0.535	(0.075)	0.708	(0.292)	0.462	(0.062)	0.480	(0.090)	0.671	(0.273)	0.533	*	(0.006)	
How to behave on dates	2.379	(0.059)	1.364	(0.344)	0.728	(0.323)	0.670	(0.205)	1.330	(0.423)	1.618	(0.241)	0.964	(0.906)	1.185	(0.417)			
Resisting pressure to have sex	1.918	(0.254)	1.204	(0.706)	4.127	*	(0.003)	2.578	(0.098)	1.303	(0.585)	3.149	*	(0.010)	0.749	(0.543)	1.855	*	(0.033)
Waiting till marriage to have sex	0.855	(0.721)	1.115	(0.754)	0.721	(0.372)	1.445	(0.274)	0.545	(0.122)	0.741	(0.354)	1.446	(0.243)	0.925	(0.705)			
Religious values and sex	1.071	(0.870)	0.992	(0.980)	0.650	(0.161)	0.884	(0.739)	0.885	(0.713)	1.325	(0.409)	0.819	(0.495)	0.926	(0.714)			

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-8.****Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for Perceived Parental Control of Adolescent Behavior (N=712)**

<i>Estimated association with odds that adolescent...</i>		<i>...disagreed that "there is little your parent can do to keep you from engaging in sexual intercourse."</i>	
		OR	p-value
<b>Parent demographics</b>			
Age		1.024	*
Male		1.260	(0.377)
<i>Race/ ethnicity</i>			
Black		2.906	(2.840)
Hispanic		1.323	(0.697)
English not primary language at home		0.612	(0.438)
<i>Educational attainment</i>			
Less than HS diploma		1.178	(0.796)
HS diploma only		0.768	(0.421)
Some college		1.036	(0.573)
College diploma		0.988	(0.431)
<i>Marital status</i>			
Divorced or separated		0.418	(0.158)
Never married		0.820	(0.446)
Single parent		1.209	(0.468)
<b>Household socioeconomic status</b>			
Income		0.870	(0.058)
<i>Maximum educational attainment</i>			
HS diploma or less		0.837	(0.476)
Some college		0.526	(0.250)
College diploma		0.681	(0.250)
Urban residence		1.547	(0.470)
<i>Geographic region of residence</i>			
Midwest		0.840	(0.321)
West		0.646	(0.254)
South		0.808	(0.291)
<b>Adolescent demographics</b>			
Grade		0.871	(0.068)
Male		0.555	(0.141)
<i>Race/ ethnicity</i>			
Black		0.352	(0.340)
Hispanic		0.727	(0.362)
<b>Religiosity</b>			
Parent church attendance		0.971	(0.196)
Adolescent church attendance		0.911	(0.175)
<b>Parent attitudes about sex &amp; abstinence</b>			
<i>General attitudes</i>			
Sex before marriage against values		1.661	(0.494)
Sex for married people only		1.178	(0.379)
<i>Permissible adolescent behavior</i>			
Sex good thing to do		1.105	(0.699)
Sex okay if adolescent & partner think so		0.499	(0.346)
Sex would make life difficult		2.202	(1.046)



**Table C-8.****Estimated Associations for Adolescent Attitudes — Results of Logistic Regressions for Perceived Parental Control of Adolescent Behavior (N=712)**

<i>Estimated association with odds that adolescent...</i>	<i>...disagreed that "there is little your parent can do to keep you from engaging in sexual intercourse."</i>	
	OR	p-value
Sex okay if dating +1 year	0.699	(0.406)
Sex okay before finish HS	0.597	(0.236)
Sex okay if birth control used	1.586	(0.684)
Sex okay if plan to marry	1.117	(0.441)
Perceived parental control	1.444	(0.177)
<b>Relationship quality</b>		
<i>Parent assessment</i>		
Frequency sharing enjoyed activities with adolescent	0.920	(0.221)
Closeness of relationship	0.623	(0.165)
Overall relationship quality	1.329	(0.399)
<i>Adolescent assessment</i>		
Frequency sharing enjoyed activities with adolescent	1.223	(0.234)
Closeness of relationship	1.050	(0.246)
Overall relationship quality	1.685	(0.424)
<b>Parent-adolescent communication</b>		
<i>Comfort levels talking about sex</i>		
Parent comfort level	1.392	(0.250)
Adolescent comfort level	0.968	(0.141)
<i>General communication levels</i>		
Ever talked about sex	2.037	(1.361)
Talked about sexual values, past year	0.687	(0.195)
<i>Communication about specific topics</i>		
How babies are made	1.045	(0.178)
STDs or HIV/AIDS	1.200	(0.250)
Good romantic relationships	0.775	(0.115)
How to behave on dates	1.195	(0.177)
Resisting pressure to have sex	1.153	(0.194)
Waiting till marriage to have sex	0.966	(0.166)
Religious values and sex	0.896	(0.129)
<b>Peer attitudes</b>		
Waiting till marriage to have sex	1.448	(0.209)
OK to have sex at adolescent's age	1.632	(0.239)
<b>Peer-adolescent communication</b>	0.659	(0.129)
<b>Exposure to Information in Class or Program</b>		
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	1.172	(0.300)
<i>Adolescent exposure to specific topics</i>		
How babies are made	1.132	(0.515)
Good romantic relationships	0.901	(0.253)
How to behave on dates	1.359	(0.353)
Resisting pressure to have sex	1.122	(0.494)
Waiting till marriage to have sex	0.715	(0.199)
Religious values and sex	1.369	(0.355)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-9.****Estimated Associations for Parent Attitudes — Results of Logistic Regressions for General Attitudes about Sex and Abstinence (N=927)**

Association with odds that parent....	...agreed that "it is against your values for your [teenager/child] to have sexual intercourse before marriage."		...agreed that "having sexual intercourse is something only married people should do."		Average association with general attitudes about sex and abstinence.	
	OR	p-val	OR	p-val	OR	p-val
<b>Parent demographics</b>						
Age	0.970	* (0.039)	1.014	(0.450)	0.992	(0.503)
Male	1.627	(0.089)	0.737	(0.238)	1.095	(0.656)
<i>Race/ ethnicity</i>						
Black	5.571	* (0.040)	1.395	(0.612)	2.788	(0.084)
Hispanic	1.645	(0.377)	0.834	(0.755)	1.171	(0.749)
English not primary language at home	0.208	* (0.007)	2.640	(0.208)	0.741	(0.569)
<i>Educational attainment</i>						
Less than HS diploma	1.424	(0.620)	2.280	(0.232)	1.802	(0.296)
HS diploma only	2.499	(0.128)	1.534	(0.415)	1.958	(0.174)
Some college	2.195	(0.133)	1.799	(0.212)	1.987	(0.111)
College diploma	0.915	(0.819)	0.882	(0.744)	0.898	(0.756)
<i>Marital status</i>						
Divorced or separated	0.333	* (0.012)	0.243	* (0.001)	0.285	* (0.000)
Never married	0.388	(0.108)	0.654	(0.424)	0.504	(0.131)
Single parent	4.044	* (0.003)	1.352	(0.428)	2.338	* (0.009)
<b>Household socioeconomic status</b>						
Income	0.858	* (0.018)	0.848	* (0.017)	0.853	* (0.004)
<i>Maximum educational attainment</i>						
HS diploma or less	0.496	(0.245)	2.100	(0.190)	1.021	(0.967)
Some college	0.653	(0.377)	1.234	(0.639)	0.897	(0.789)
College diploma	0.796	(0.512)	1.421	(0.319)	1.064	(0.846)
Urban residence	1.500	(0.176)	0.928	(0.813)	1.180	(0.502)
<i>Geographic region of residence</i>						
Midwest	1.227	(0.459)	1.503	(0.173)	1.358	(0.224)
West	1.636	(0.124)	1.640	(0.121)	1.638	(0.062)
South	1.112	(0.708)	1.092	(0.783)	1.102	(0.708)
<b>Adolescent demographics</b>						
Grade	0.947	(0.367)	0.950	(0.359)	0.948	(0.251)
Male	0.983	(0.934)	1.478	(0.067)	1.205	(0.275)
<i>Race/ ethnicity</i>						
Black	0.308	(0.131)	3.048	(0.067)	0.969	(0.956)
Hispanic	0.611	(0.371)	2.235	(0.129)	1.169	(0.740)
<b>Religiosity</b>						
Parent church attendance	2.047	* (0.000)	3.289	* (0.000)	2.595	* (0.000)
Adolescent church attendance	1.550	* (0.010)	1.865	* (0.000)	1.700	* (0.000)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-10.**  
**Estimated Associations for Parent Attitudes — Results of Logistic Regressions for Attitudes about Permissible Adolescent Sexual Behavior (N=928)**

Association with odds of parent response:	...disagreed that "having sexual intercourse is a good thing to do."		...disagreed that "it would be OK for your [teenager/ child] to have sex as long as [he/ she] and [his/ her] partner think that it's OK."		...agreed that "having sexual intercourse would create problems or would make life difficult."		...disagreed that "it would be OK for your [teenager/ child] to have sex if [he/ she] has been dating the same person for at least 1 year."		...disagreed that "it would be okay for [your teenager/ your child] to have sexual intercourse before he/ she leaves high school."		...disagreed that "it would be okay for your [teenager/ child] to have sexual intercourse if [he/ she] uses birth control."		...disagreed that "it would be okay for your [teenager/ child] to have sexual intercourse if [he/ she] plans to marry the person."		Average association with parent attitudes about adolescents' current sexual behavior.	
	OR	p-val	OR	p-val	OR	p-val	OR	p-val	OR	p-val	OR	p-val	OR	p-val	OR	p-val
<b>Parent demographics</b>																
Age	1.008	(0.778)	0.975	(0.448)	1.005	(0.836)	1.048 *	(0.037)	0.996	(0.866)	1.027	(0.316)	1.035 *	(0.043)	(1.013)	(0.361)
Male	0.273 *	(0.007)	0.635	(0.381)	1.095	(0.826)	0.582	(0.186)	1.120	(0.725)	0.768	(0.430)	0.978	(0.945)	(0.712)	(0.186)
Race/ ethnicity																
Black	7.624	(0.132)	0.836	(0.810)	0.197	(0.104)	1.179	(0.830)	3.358	(0.106)	2.197	(0.218)	0.268	(0.317)	(1.166)	(0.785)
Hispanic	0.203	(0.076)	0.258 *	(0.023)	1.075	(0.942)	0.525	(0.369)	0.694	(0.518)	0.641	(0.442)	1.474	(0.576)	(0.569)	(0.110)
English not primary language at home	0.135	(0.064)	0.169	(0.064)	0.220 *	(0.024)	0.217	(0.099)	1.642	(0.617)	0.758	(0.766)	0.357	(0.156)	(0.336) *	(0.031)
Educational attainment																
Less than HS diploma	0.583	(0.766)	1.408	(0.783)	5.404	(0.217)	0.435	(0.497)	0.850	(0.853)	2.000	(0.414)	1.880	(0.521)	(1.297)	(0.734)
HS diploma only	0.416	(0.633)	1.294	(0.809)	3.701	(0.319)	2.005	(0.628)	1.875	(0.306)	3.049	(0.107)	2.938	(0.243)	(1.824)	(0.441)
Some college	1.189	(0.915)	0.497	(0.401)	1.118	(0.902)	1.248	(0.849)	1.620	(0.424)	3.139	(0.086)	2.725	(0.208)	(1.416)	(0.578)
College diploma	0.457	(0.402)	0.394	(0.201)	1.114	(0.875)	0.742	(0.747)	0.906	(0.859)	1.142	(0.816)	0.960	(0.940)	(0.761)	(0.542)
Marital status																
Divorced or separated	0.545	(0.421)	1.880	(0.349)	0.857	(0.739)	0.589	(0.315)	1.001	(0.998)	0.802	(0.604)	0.966	(0.939)	(0.878)	(0.655)
Never married	8.792	(0.076)	1.096	(0.919)	1.279	(0.719)	3.674	(0.182)	0.532	(0.333)	0.413	(0.206)	2.275	(0.254)	(1.561)	(0.303)
Single parent	0.695	(0.629)	1.012	(0.982)	2.854	(0.119)	0.678	(0.517)	1.725	(0.250)	1.123	(0.805)	0.955	(0.927)	(1.141)	(0.655)
<b>Household socioeconomic status</b>																
Income	1.091	(0.616)	1.332 *	(0.023)	1.163	(0.142)	1.208	(0.095)	1.083	(0.349)	1.074	(0.361)	1.186 *	(0.047)	(1.159) *	(0.023)
Maximum educational attainment																
HS diploma or less	2.954	(0.583)	4.675	(0.180)	0.785	(0.858)	3.794	(0.346)	4.182	(0.078)	2.600	(0.211)	1.196	(0.840)	(2.453)	(0.264)
Some college	1.450	(0.830)	8.691 *	(0.021)	1.959	(0.482)	1.571	(0.721)	0.920	(0.879)	0.678	(0.514)	0.479	(0.315)	(1.419)	(0.603)
College diploma	4.960	(0.150)	1.957	(0.326)	0.992	(0.991)	1.552	(0.656)	0.857	(0.747)	1.025	(0.962)	0.876	(0.798)	(1.418)	(0.461)
Urban residence	0.230	(0.068)	2.035	(0.331)	1.462	(0.407)	0.768	(0.686)	0.859	(0.669)	1.427	(0.425)	0.408 *	(0.045)	(0.826)	(0.552)
Geographic region of residence																
Midwest	0.577	(0.423)	2.473	(0.100)	2.137	(0.135)	2.466	(0.072)	1.371	(0.393)	2.281	(0.051)	2.316 *	(0.038)	(1.770)	(0.072)
West	5.960 *	(0.040)	2.880	(0.079)	1.021	(0.960)	2.388	(0.117)	1.741	(0.192)	2.003	(0.095)	1.858	(0.087)	(2.226) *	(0.014)
South	0.748	(0.664)	6.422 *	(0.014)	1.065	(0.880)	2.249	(0.072)	1.500	(0.288)	1.263	(0.560)	1.991	(0.064)	(1.714)	(0.082)
<b>Adolescent demographics</b>																
Grade	0.823	(0.320)	0.622 *	(0.000)	0.837	(0.051)	0.474 *	(0.000)	1.047	(0.534)	0.748 *	(0.001)	0.749 *	(0.001)	(0.738) *	(0.000)
Male	0.375 *	(0.045)	0.269 *	(0.012)	1.302	(0.408)	0.557	(0.113)	0.551 *	(0.039)	0.559 *	(0.035)	0.922	(0.768)	(0.575) *	(0.009)

**Table C-10.**  
**Estimated Associations for Parent Attitudes — Results of Logistic Regressions for Attitudes about Permissible Adolescent Sexual Behavior (N=928)**

Association with odds of parent response:	...disagreed that "having sexual intercourse is a good thing to do."	...disagreed that "it would be OK for your [teenager/ child] to have sex as long as [he/ she] and [his/ her] partner think that it's OK."	...agreed that "having sexual intercourse would create problems or would make life difficult."	...disagreed that "it would be OK for your [teenager/ child] to have sex if [he/ she] has been dating the same person for at least 1 year."	...disagreed that "it would be okay for [your teenager/ your child] to have sexual intercourse before he/ she leaves high school."	...disagreed that "it would be okay for your [teenager/ child] to have sexual intercourse if [he/ she] uses birth control."	...disagreed that "it would be okay for your [teenager/ child] to have sexual intercourse if [he/ she] plans to marry the person."	Average association with parent attitudes about adolescents' current sexual behavior.
	OR p-val	OR p-val	OR p-val	OR p-val	OR p-val	OR p-val	OR p-val	OR p-val
<i>Race/ ethnicity</i>								
Black	0.154 * (0.026)	0.868 (0.809)	5.109 (0.133)	0.984 (0.981)	1.135 (0.826)	0.944 (0.917)	7.681 (0.128)	(1.277) (0.646)
Hispanic	5.337 (0.135)	0.774 (0.663)	0.581 (0.561)	2.342 (0.279)	1.761 (0.273)	1.529 (0.455)	0.828 (0.763)	(1.435) (0.295)
<b>Religiosity</b>								
Parent church attendance	1.737 (0.271)	2.924 * (0.000)	1.574 (0.123)	1.649 (0.138)	2.797 * (0.000)	2.247 * (0.002)	1.642 * (0.021)	(2.017) * (0.000)
Adolescent church attendance	1.710 (0.232)	1.073 (0.804)	1.718 (0.054)	1.960 * (0.018)	1.257 (0.314)	1.560 (0.100)	1.305 (0.195)	(1.484) * (0.019)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

<b>Table C-11.</b> <b>Estimated Associations for Parent Attitudes — Results of Logistic</b> <b>Regressions for Perceived Parental Control of Adolescent Behavior (N=925)</b>		
Association with odds of parent response "at your [teenager's/ child's] age right now."	...disagreed that "there is little you can do to keep your [teenager/ child] from engaging in sexual intercourse."	
	OR	p-value
<b>Parent demographics</b>		
Age	0.997	(0.845)
Male	0.882	(0.629)
Race/ ethnicity		
Black	1.292	(0.743)
Hispanic	1.265	(0.705)
English not primary language at home	2.151	(0.250)
Educational attainment		
Less than HS diploma	0.474	(0.272)
HS diploma only	0.604	(0.384)
Some college	1.089	(0.868)
College diploma	1.065	(0.885)
Marital status		
Divorced or separated	1.156	(0.710)
Never married	1.555	(0.435)
Single parent	1.143	(0.742)
<b>Household socioeconomic status</b>		
Income	1.218	* (0.002)
Maximum educational attainment		
HS diploma or less	2.478	(0.133)
Some college	1.151	(0.780)
College diploma	1.292	(0.526)
Urban residence	0.638	(0.153)
Geographic region of residence	0.804	(0.480)
Midwest		
West	0.792	(0.492)
South	0.579	(0.083)
<b>Adolescent demographics</b>		
Grade	0.629	* (0.000)
Male	0.639	* (0.045)
Race/ ethnicity		
Black	0.570	(0.466)
Hispanic	0.451	(0.141)
<b>Religiosity</b>		
Parent church attendance	1.565	* (0.027)
Adolescent church attendance	1.290	(0.175)
* indicates that estimated odds ratio is statistically significant at the 95% confidence level.		

**Table C-12.**  
**Estimated Associations for Parent Attitudes — Results of Logistic Regressions for Attitudes about Potential Sources of Abstinence Messages**

<i>Association with odds that parents favored adolescent receiving messages about abstinence from....</i>	<i>School</i>		<i>A doctor's office, health center, or health clinic</i>		<i>A place of worship</i>		<i>A community organization</i>		<i>An internet website</i>	
<i>Parent attitudes about sex included?</i>	N (n=921)	Y (n=885)	N (n=920)	Y (n=885)	N (n=915)	Y (n=882)	N (n=918)	Y (n=881)	N (n=910)	Y (n=874)
<b>Parent demographics</b>										
Age	1.005 (0.777)	1.007 (0.735)	0.995 (0.759)	0.998 (0.903)	0.980 (0.268)	0.976 (0.242)	0.973 (0.076)	0.965* (0.039)	0.980 (0.145)	0.981 (0.161)
Male	1.071 (0.822)	0.866 (0.675)	1.040 (0.897)	0.910 (0.782)	2.012* (0.021)	2.771* (0.002)	0.954 (0.865)	0.900 (0.729)	0.880 (0.602)	0.847 (0.509)
<i>Race/ ethnicity</i>										
Black	1.548 (0.643)	1.611 (0.594)	0.608 (0.682)	0.378 (0.537)	0.210 (0.079)	0.179 (0.067)	4.631 (0.166)	4.604 (0.123)	0.735 (0.720)	0.890 (0.890)
Hispanic	3.165 (0.075)	3.788 (0.053)	1.472 (0.538)	2.079 (0.255)	1.229 (0.729)	2.009 (0.334)	0.874 (0.789)	0.858 (0.767)	0.776 (0.615)	0.732 (0.527)
English not primary language at home	0.262 (0.102)	0.222* (0.047)	0.177* (0.016)	0.185* (0.013)	0.072* (0.000)	0.052* (0.000)	0.426 (0.130)	0.380 (0.078)	0.423 (0.129)	0.417 (0.142)
<i>Educational attainment</i>										
Less than HS diploma	5.866* (0.049)	3.766 (0.174)	3.482 (0.195)	1.578 (0.655)	1.073 (0.937)	0.779 (0.794)	0.357 (0.125)	0.221* (0.031)	0.216* (0.009)	0.211* (0.010)
HS diploma only	1.132 (0.849)	0.625 (0.501)	1.051 (0.940)	0.463 (0.248)	0.408 (0.192)	0.297 (0.104)	0.421 (0.068)	0.273* (0.010)	0.417 (0.057)	0.346* (0.026)
Some college	1.328 (0.598)	0.924 (0.889)	1.371 (0.572)	0.891 (0.843)	0.479 (0.216)	0.409 (0.172)	0.367* (0.016)	0.268* (0.003)	0.266* (0.002)	0.252* (0.002)
College diploma	1.050 (0.916)	0.901 (0.827)	0.905 (0.823)	0.722 (0.461)	0.456 (0.122)	0.579 (0.354)	0.709 (0.361)	0.611 (0.206)	0.559 (0.129)	0.552 (0.123)
<i>Marital status</i>										
Divorced or separated	2.649* (0.027)	3.318* (0.002)	1.063 (0.890)	1.482 (0.392)	1.072 (0.917)	1.282 (0.622)	0.766 (0.508)	0.920 (0.839)	0.630 (0.188)	0.659 (0.247)
Never married	1.522 (0.533)	1.504 (0.504)	0.287 (0.086)	0.291 (0.083)	1.068 (0.937)	0.897 (0.867)	1.232 (0.740)	1.398 (0.595)	0.433 (0.079)	0.438 (0.090)
Single parent	0.453 (0.067)	0.342* (0.008)	0.787 (0.605)	0.497 (0.158)	1.052 (0.942)	0.840 (0.737)	0.577 (0.132)	0.514 (0.075)	0.681 (0.279)	0.613 (0.182)

**Table C-12.**  
**Estimated Associations for Parent Attitudes — Results of Logistic Regressions for Attitudes about Potential Sources of Abstinence Messages**

<i>Association with odds that parents favored adolescent receiving messages about abstinence from....</i>	<i>School</i>		<i>A doctor's office, health center, or health clinic</i>		<i>A place of worship</i>		<i>A community organization</i>		<i>An internet website</i>	
<i>Parent attitudes about sex included?</i>	N	Y	N	Y	N	Y	N	Y	N	Y
<b>Household socioeconomic status</b>										
Income	1.144 (0.070)	1.230* (0.005)	0.874 (0.062)	0.944 (0.431)	1.073 (0.401)	1.115 (0.195)	1.012 (0.837)	1.061 (0.318)	1.007 (0.900)	1.012 (0.830)
<i>Maximum educational attainment</i>										
HS diploma or less	3.287 (0.103)	3.869 (0.069)	2.341 (0.280)	3.392 (0.144)	6.513* (0.010)	5.360* (0.031)	3.150* (0.018)	3.567* (0.013)	1.869 (0.168)	1.917 (0.165)
Some college	2.430 (0.105)	2.549 (0.105)	1.927 (0.251)	2.011 (0.235)	2.640 (0.088)	2.464 (0.181)	3.844* (0.001)	3.802* (0.001)	1.972 (0.074)	1.928 (0.098)
College diploma	1.180 (0.704)	1.507 (0.376)	1.007 (0.988)	1.418 (0.450)	1.581 (0.312)	1.653 (0.350)	1.722 (0.082)	1.986* (0.041)	1.638 (0.121)	1.741 (0.088)
Urban residence	1.904* (0.040)	1.992 (0.059)	1.330 (0.379)	1.042 (0.913)	1.755 (0.120)	1.544 (0.290)	1.550 (0.121)	1.482 (0.181)	1.101 (0.691)	1.021 (0.935)
<i>Geographic region of residence</i>										
Midwest	2.178* (0.026)	1.723 (0.171)	1.536 (0.273)	1.106 (0.801)	2.001 (0.051)	1.548 (0.257)	2.020* (0.031)	1.776 (0.109)	2.210* (0.005)	1.976* (0.019)
West	1.951 (0.050)	1.676 (0.207)	1.490 (0.292)	1.163 (0.707)	4.269* (0.000)	3.542* (0.002)	2.883* (0.002)	2.800* (0.006)	2.774* (0.001)	2.591* (0.002)
South	2.123* (0.028)	1.740 (0.129)	1.323 (0.420)	1.019 (0.957)	2.607* (0.028)	2.215 (0.082)	1.995* (0.018)	1.844 (0.056)	2.253* (0.003)	2.147* (0.006)
<b>Adolescent demographics</b>										
Grade	0.860* (0.028)	0.852 (0.065)	0.919 (0.267)	0.868 (0.146)	1.077 (0.311)	1.205* (0.042)	1.052 (0.401)	1.028 (0.706)	1.011 (0.827)	1.029 (0.617)
Male	1.321 (0.233)	1.318 (0.299)	1.375 (0.161)	1.496 (0.105)	0.917 (0.754)	0.958 (0.872)	0.995 (0.985)	0.967 (0.895)	0.992 (0.967)	0.996 (0.985)
<i>Race/ ethnicity</i>										
Black	1.281 (0.793)	0.838 (0.848)	5.681 (0.214)	6.029 (0.308)	4.000 (0.123)	3.936 (0.177)	0.708 (0.725)	0.549 (0.495)	0.898 (0.899)	0.835 (0.831)
Hispanic	0.412 (0.076)	0.327* (0.017)	0.657 (0.401)	0.486 (0.138)	0.901 (0.821)	0.566 (0.220)	0.814 (0.653)	0.709 (0.462)	0.673 (0.375)	0.663 (0.339)

**Table C-12.**  
**Estimated Associations for Parent Attitudes — Results of Logistic Regressions for Attitudes about Potential Sources of Abstinence Messages**

<i>Association with odds that parents favored adolescent receiving messages about abstinence from....</i>	<i>School</i>		<i>A doctor's office, health center, or health clinic</i>		<i>A place of worship</i>		<i>A community organization</i>		<i>An internet website</i>	
<i>Parent attitudes about sex included?</i>	N	Y	N	Y	N	Y	N	Y	N	Y
<b>Religiosity</b>										
Parent church attendance	1.686*	1.390	2.015*	1.397	2.561*	2.145*	1.554*	1.416	1.396*	1.340
	(0.006)	(0.111)	(0.002)	(0.148)	(0.003)	(0.016)	(0.015)	(0.084)	(0.034)	(0.080)
Adolescent church attendance	1.487*	1.206	1.592*	1.276	1.883*	1.476	1.350	1.197	1.249	1.204
	(0.049)	(0.360)	(0.023)	(0.264)	(0.035)	(0.209)	(0.088)	(0.331)	(0.163)	(0.276)
<b>Parent attitudes about sex &amp; abstinence</b>										
<i>General attitudes</i>										
Sex before marriage against values	--	2.477*	--	2.557*	--	1.884	--	1.428	--	1.031
	--	(0.001)	--	(0.008)	--	(0.057)	--	(0.176)	--	(0.904)
Sex for married people only	--	2.269*	--	3.063*	--	4.412*	--	1.771	--	1.279
	--	(0.008)	--	(0.001)	--	0.000	--	(0.053)	--	(0.358)
<i>Permissible adolescent behavior</i>										
Sex good thing to do (disagree)	--	0.932	--	2.033	--	0.723	--	1.440	--	0.616
	--	(0.899)	--	(0.258)	--	(0.650)	--	(0.561)	--	(0.435)
Sex okay if adolescent & partner think so (disagree)	--	0.313*	--	0.374	--	0.919	--	0.302	--	0.312
	--	(0.033)	--	(0.086)	--	(0.921)	--	(0.063)	--	(0.069)
Sex would make life difficult (agree)	--	2.203*	--	2.538*	--	0.953	--	2.119	--	1.288
	--	(0.023)	--	(0.023)	--	(0.901)	--	(0.066)	--	(0.454)
Sex okay if dating +1 year (disagree)	--	3.364	--	1.636	--	10.632*	--	1.022	--	3.157*
	--	(0.057)	--	(0.421)	--	(0.002)	--	(0.968)	--	(0.037)
Sex okay before finish HS (disagree)	--	2.798*	--	3.144*	--	1.755	--	2.331*	--	1.624
	--	(0.002)	--	(0.002)	--	(0.136)	--	(0.017)	--	(0.166)
Sex okay if birth control used (disagree)	--	0.521	--	1.222	--	0.345	--	0.866	--	0.590
	--	(0.161)	--	(0.675)	--	(0.063)	--	(0.744)	--	(0.195)
Sex okay if plan to marry (disagree)	--	0.970	--	0.358*	--	0.830	--	1.065	--	0.799
	--	(0.937)	--	(0.022)	--	(0.667)	--	(0.873)	--	(0.530)
Perceived parental control	--	0.817	--	0.752	--	0.954	--	0.833	--	0.994
	--	(0.221)	--	(0.073)	--	(0.811)	--	(0.160)	--	(0.954)

(p-values in parentheses.)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.



**Table C-13.**  
**Estimated Associations for Parent-Adolescent Communication — Results of**  
**Logistic Regressions for Parent Comfort Level (N=733)**

	OR	p-value
<b>Parent demographics</b>		
Age	1.024 *	(0.020)
Male	0.526	(0.154)
<i>Race/ ethnicity</i>		
Black	0.912	(0.672)
Hispanic	0.423	(0.402)
English not primary language at home	0.660	(0.370)
<i>Educational attainment</i>		
Less than HS diploma	3.240	(2.531)
HS diploma only	1.217	(0.596)
Some college	1.156	(0.481)
College diploma	0.598	(0.218)
<i>Marital status</i>		
Divorced or separated	0.668	(0.336)
Never married	1.179	(0.783)
Single parent	1.896	(1.077)
<b>Household socioeconomic status</b>		
Income	0.973	(0.080)
<i>Maximum educational attainment</i>		
HS diploma or less	0.539	(0.289)
Some college	1.127	(0.439)
College diploma	0.909	(0.275)
Urban residence	0.692	(0.189)
<i>Geographic region of residence</i>		
Midwest	1.324	(0.495)
West	0.940	(0.342)
South	0.994	(0.352)
<b>Adolescent demographics</b>		
Grade	0.950	(0.057)
Male	1.116	(0.269)
<i>Race/ ethnicity</i>		
Black	1.427	(1.015)
Hispanic	1.282	(1.038)
<b>Religiosity</b>		
Parent church attendance	1.052	(0.226)
Adolescent church attendance	0.832	(0.188)
<b>Parent attitudes about sex &amp; abstinence</b>		
<i>General attitudes</i>		
Sex before marriage against values	0.708	(0.221)
Sex for married people only	1.819	(0.561)

**Table C-13.****Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Parent Comfort Level (N=733)**

	OR	p-value
<i>Permissible adolescent behavior</i>	1.210	(0.377)
Sex good thing to do		
Sex okay if adolescent & partner think so	0.745	(0.470)
Sex would make life difficult	0.746	(0.376)
Sex okay if dating +1 year	0.869	(0.291)
Sex okay before finish HS	2.118	(1.638)
Sex okay if birth control used	0.417	(0.186)
Sex okay if plan to marry	0.604	(0.267)
Perceived parental control	1.231	(0.176)
<b>Relationship quality</b>		
<i>Parent assessment</i>		
Frequency sharing enjoyed activities with adolescent	0.898	(0.181)
Closeness of relationship	1.389	(0.299)
Overall relationship quality	1.155	(0.353)
<i>Adolescent assessment</i>		
Frequency sharing enjoyed activities with adolescent	0.883	(0.133)
Closeness of relationship	0.954	(0.212)
Overall relationship quality	1.272	(0.354)
<b>Exposure to Information in Class or Program</b>		
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	0.808	(0.199)
<i>Adolescent exposure to specific topics</i>		
How babies are made	1.346	(0.522)
Good romantic relationships	1.004	(0.269)
How to behave on dates	1.157	(0.271)
Resisting pressure to have sex	0.796	(0.375)
Waiting till marriage to have sex	0.603	(0.167)
Religious values and sex	0.692	(0.180)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-14.****Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for General Frequency of Communication (N=735)**

Association with odds that parent...	<i>Ever talked about sex or sexual issues with adolescent</i>		<i>Talked about sexual values with adolescent in past year</i>		<i>Average association with frequency of parent-adolescent communication</i>	
	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>						
Age	0.903	* (0.001)	0.957	* (0.035)	0.929	* (0.001)
Male	0.704	(0.575)	0.629	(0.132)	0.666	(0.332)
<i>Race/ ethnicity</i>						
Black	2.630	(0.230)	5.158	(0.080)	3.684	(0.050)
Hispanic	0.637	(0.668)	0.805	(0.750)	0.716	(0.673)
English not primary language at home	0.315	(0.277)	0.467	(0.306)	0.384	(0.242)
<i>Marital status</i>						
Divorced or separated	5.457	(0.163)	1.693	(0.315)	3.040	(0.127)
Never married	3.727	(0.422)	0.328	(0.070)	1.105	(0.913)
Single parent	8.975	(0.117)	1.225	(0.670)	3.316	(0.130)
<b>Household socioeconomic status</b>						
Income	1.073	(0.508)	0.990	(0.883)	1.030	(0.695)
<i>Maximum educational attainment</i>						
HS diploma or less only	1.430	(0.621)	2.336	* (0.015)	1.827	(0.194)
College diploma	1.512	(0.573)	1.801	(0.061)	1.650	(0.284)
Urban residence	0.716	(0.604)	0.757	(0.382)	0.736	(0.470)
<i>Geographic region of residence</i>						
Midwest	0.178	* (0.030)	0.492	(0.076)	0.296	* (0.018)
West	1.273	(0.766)	1.143	(0.729)	1.206	(0.718)
South	1.646	(0.568)	1.066	(0.867)	1.324	(0.601)
<b>Adolescent demographics</b>						
Grade	1.203	(0.132)	1.213	* (0.013)	1.208	* (0.025)
Male	1.069	(0.886)	0.847	(0.492)	0.952	(0.876)
<i>Race/ ethnicity</i>						
Black	1.290	(0.757)	0.352	(0.199)	0.674	(0.520)
Hispanic	0.442	(0.281)	0.929	(0.908)	0.641	(0.488)
<b>Religiosity</b>						
Parent church attendance	2.409	* (0.024)	1.171	(0.505)	1.679	(0.053)
Adolescent church attendance	0.744	(0.373)	0.965	(0.849)	0.847	(0.463)
<b>Parent attitudes about sex &amp; abstinence</b>						
<i>General attitudes</i>						
Sex before marriage against values	1.187	(0.740)	1.209	(0.583)	1.198	(0.623)
Sex for married people only	0.134	* (0.002)	0.947	(0.887)	0.356	* (0.014)
<i>Permissible adolescent behavior</i>						
Sex good thing to do	0.511	(0.624)	0.824	(0.832)	0.649	(0.670)
Sex okay if adolescent & partner think so	2.621	(0.477)	1.656	(0.602)	2.083	(0.483)
Sex would make life difficult	1.677	(0.523)	0.779	(0.639)	1.143	(0.827)
Sex okay if dating +1 year	0.044	(0.135)	0.298	(0.093)	0.114	(0.082)
Sex okay before finish HS	5.839	* (0.002)	1.576	(0.240)	3.034	* (0.005)
Sex okay if birth control used	0.410	(0.359)	0.624	(0.364)	0.506	(0.277)
Sex okay if plan to marry	5.805	* (0.031)	2.520	(0.078)	3.825	* (0.026)
Perceived parental control	1.370	(0.060)	1.510	* (0.002)	1.438	* (0.003)

**Table C-14.****Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for General Frequency of Communication (N=735)**

<i>Association with odds that parent...</i>	<i>Ever talked about sex or sexual issues with adolescent</i>		<i>Talked about sexual values with adolescent in past year</i>		<i>Average association with frequency of parent-adolescent communication</i>	
	OR	p-value	OR	p-value	OR	p-value
<b>Relationship quality</b>						
<i>Parent assessment</i>						
Frequency sharing enjoyed activities with adolescent	2.093	(0.067)	1.432	(0.124)	1.731 *	(0.047)
Closeness of relationship	1.080	(0.855)	1.187	(0.512)	1.132	(0.666)
Overall relationship quality	1.302	(0.597)	1.094	(0.757)	1.193	(0.609)
<i>Adolescent assessment</i>						
Frequency sharing enjoyed activities with adolescent	1.150	(0.616)	1.162	(0.377)	1.156	(0.446)
Closeness of relationship	0.895	(0.750)	1.173	(0.438)	1.025	(0.921)
Overall relationship quality	1.566	(0.271)	1.037	(0.895)	1.274	(0.403)
<b>Exposure to Information in Class or Program</b>						
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	2.409	(0.058)	1.637	(0.068)	1.986 *	(0.030)
<i>Adolescent exposure to specific topics</i>						
How babies are made	3.860	(0.072)	1.328	(0.538)	2.265	(0.138)
Good romantic relationships	4.418 *	(0.002)	1.714	(0.080)	2.752 *	(0.002)
How to behave on dates	0.389	(0.065)	1.095	(0.735)	0.652	(0.202)
Resisting pressure to have sex	0.459	(0.310)	0.925	(0.849)	0.651	(0.417)
Waiting till marriage to have sex	1.522	(0.480)	0.861	(0.642)	1.145	(0.743)
Religious values and sex	0.862	(0.777)	1.209	(0.496)	1.020	(0.955)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-15.****Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for General Frequency of Communication (N=734)**

(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent...	Ever talked about sex or sexual issues with adolescent		Talked about sexual values with adolescent in past year		Average association with parent-adolescent communication	
	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>						
Age	0.901	* (0.003)	0.949	* (0.022)	0.925	* (0.002)
Male	1.045	(0.954)	0.880	(0.698)	0.959	(0.933)
<i>Race/ ethnicity</i>						
Black	3.284	(0.195)	7.753	(0.073)	5.046	* (0.033)
Hispanic	0.593	(0.609)	0.903	(0.870)	0.732	(0.670)
English not primary language at home	0.466	(0.597)	0.633	(0.530)	0.543	(0.536)
<i>Marital status</i>						
Divorced or separated	5.171	(0.162)	1.706	(0.339)	2.970	(0.139)
Never married	2.340	(0.628)	0.237	* (0.040)	0.745	(0.764)
Single parent	11.274	(0.093)	1.198	(0.738)	3.675	(0.116)
<b>Household socioeconomic status</b>						
Income	1.100	(0.424)	0.991	(0.906)	1.044	(0.608)
<i>Maximum educational attainment</i>						
HS diploma or less only	1.562	(0.543)	2.563	* (0.005)	2.001	(0.140)
College diploma	1.780	(0.416)	2.058	* (0.024)	1.914	(0.152)
Urban residence	0.625	(0.508)	0.763	(0.426)	0.691	(0.418)
<i>Geographic region of residence</i>						
Midwest	0.101	* (0.005)	0.339	* (0.011)	0.185	* (0.002)
West	1.415	(0.716)	0.911	(0.821)	1.136	(0.834)
South	1.171	(0.867)	0.777	(0.537)	0.954	(0.935)
<b>Adolescent demographics</b>						
Grade	1.275	(0.056)	1.277	* (0.005)	1.276	* (0.006)
Male	0.754	(0.525)	0.740	(0.237)	0.747	(0.339)
<i>Race/ ethnicity</i>						
Black	0.599	(0.624)	0.234	(0.124)	0.375	(0.172)
Hispanic	0.461	(0.283)	0.856	(0.794)	0.628	(0.434)
<b>Religiosity</b>						
Parent church attendance	2.118	(0.094)	1.028	(0.914)	1.476	(0.195)
Adolescent church attendance	0.923	(0.832)	1.105	(0.627)	1.010	(0.969)
<b>Parent attitudes about sex &amp; abstinence</b>						
<i>General attitudes</i>						
Sex before marriage against values	1.215	(0.735)	1.317	(0.441)	1.265	(0.545)
Sex for married people only	0.125	* (0.008)	0.834	(0.638)	0.322	* (0.019)
<i>Permissible adolescent behavior</i>						
Sex good thing to do	0.278	(0.354)	0.787	(0.800)	0.468	(0.456)
Sex okay if adolescent & partner think so	1.782	(0.665)	1.114	(0.906)	1.409	(0.729)
Sex would make life difficult	4.235	(0.077)	1.218	(0.691)	2.271	(0.154)
Sex okay if dating +1 year	0.118	(0.219)	0.434	(0.223)	0.226	(0.158)
Sex okay before finish HS	6.322	* (0.011)	1.626	(0.237)	3.206	* (0.014)
Sex okay if birth control used	0.205	(0.199)	0.706	(0.565)	0.380	(0.220)
Sex okay if plan to marry	8.104	* (0.028)	3.024	(0.055)	4.950	* (0.021)
Perceived parental control	1.372	(0.128)	1.486	* (0.004)	1.428	* (0.013)

**Table C-15.****Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for General Frequency of Communication (N=734)**

(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent...	<i>Ever talked about sex or sexual issues with adolescent</i>		<i>Talked about sexual values with adolescent in past year</i>		<i>Average association with parent-adolescent communication</i>	
	OR	p-value	OR	p-value	OR	p-value
<b>Relationship quality</b>						
<i>Parent assessment</i>						
Frequency sharing enjoyed activities with adolescent	2.123	(0.113)	1.562	(0.066)	1.821	(0.054)
Closeness of relationship	0.860	(0.743)	1.130	(0.648)	0.986	(0.962)
Overall relationship quality	1.911	(0.241)	1.077	(0.814)	1.435	(0.346)
<i>Adolescent assessment</i>						
Frequency sharing enjoyed activities with adolescent	1.305	(0.393)	1.285	(0.162)	1.295	(0.209)
Closeness of relationship	0.620	(0.218)	1.021	(0.922)	0.795	(0.387)
Overall relationship quality	1.194	(0.628)	0.837	(0.512)	1.000	(0.999)
<b>Exposure to Information in Class or Program</b>						
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	3.245 *	(0.013)	1.850 *	(0.026)	2.450 *	(0.005)
<i>Adolescent exposure to specific topics</i>						
How babies are made	2.926	(0.131)	1.283	(0.594)	1.938	(0.209)
Good romantic relationships	5.701 *	(0.001)	1.807	(0.066)	3.210 *	(0.001)
How to behave on dates	0.372	(0.061)	0.951	(0.861)	0.595	(0.128)
Resisting pressure to have sex	0.444	(0.314)	0.906	(0.825)	0.634	(0.412)
Waiting till marriage to have sex	1.594	(0.492)	0.952	(0.878)	1.232	(0.641)
Religious values and sex	0.691	(0.424)	1.283	(0.388)	0.942	(0.853)
<b>Comfort Levels Talking about Sex</b>						
Parent comfort level	2.636 *	(0.000)	2.509 *	(0.000)	2.572 *	(0.000)
Adolescent comfort level	2.115 *	(0.016)	1.569 *	(0.002)	1.822 *	(0.003)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-16.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Frequency of Communication about Specific Topics (N=734)**

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>																
Age	0.964 *	(0.030)	0.963	(0.053)	0.978	(0.101)	0.980	(0.089)	0.925 *	(0.000)	0.936 *	(0.000)	0.954 *	(0.004)	0.957 *	(0.000)
Male	0.585	(0.070)	0.556 *	(0.036)	0.484 *	(0.014)	0.535 *	(0.039)	0.802	(0.421)	0.921	(0.763)	1.080	(0.766)	0.680	(0.061)
<i>Race/ ethnicity</i>																
Black	1.205	(0.796)	1.921	(0.459)	0.926	(0.923)	0.866	(0.894)	0.602	(0.534)	1.737	(0.458)	2.672	(0.172)	1.265	(0.706)
Hispanic	0.382	(0.143)	0.519	(0.354)	0.336	(0.078)	0.266 *	(0.044)	0.714	(0.567)	0.780	(0.603)	1.035	(0.961)	0.520	(0.190)
English not primary language at home	1.764	(0.450)	1.133	(0.852)	0.431	(0.068)	1.882	(0.349)	0.724	(0.586)	0.425	(0.226)	0.789	(0.729)	0.875	(0.790)
<i>Marital status</i>																
Divorced or separated	2.191	(0.076)	1.162	(0.743)	0.871	(0.693)	2.364 *	(0.011)	1.387	(0.321)	1.433	(0.377)	0.798	(0.527)	1.353	(0.256)
Never married	1.642	(0.356)	1.027	(0.964)	0.661	(0.446)	0.776	(0.720)	1.360	(0.613)	0.397	(0.098)	0.578	(0.319)	0.829	(0.672)
Single parent	0.614	(0.265)	1.014	(0.976)	0.749	(0.407)	0.339 *	(0.001)	0.649	(0.192)	0.870	(0.716)	1.050	(0.888)	0.713	(0.198)
<b>Household socioeconomic status</b>																
Income	1.071	(0.270)	1.095	(0.089)	1.009	(0.873)	0.955	(0.442)	0.973	(0.606)	1.018	(0.770)	1.093	(0.139)	1.029	(0.481)
<i>Maximum educational attainment</i>																
HS diploma or less only	1.239	(0.437)	2.156 *	(0.002)	0.790	(0.432)	0.801	(0.434)	1.454	(0.157)	2.001 *	(0.018)	1.225	(0.438)	1.292	(0.161)
College diploma	0.821	(0.472)	1.290	(0.323)	1.025	(0.930)	0.825	(0.507)	1.046	(0.856)	1.112	(0.713)	1.008	(0.978)	1.007	(0.969)
Urban residence	0.693	(0.272)	0.945	(0.856)	0.907	(0.733)	0.774	(0.312)	0.773	(0.311)	0.892	(0.684)	0.863	(0.571)	0.831	(0.345)
<i>Geographic region of residence</i>																
Midwest	1.079	(0.820)	0.582	(0.098)	0.569	(0.095)	0.825	(0.584)	1.065	(0.866)	0.578	(0.145)	0.404 *	(0.005)	0.688	(0.150)
West	1.102	(0.780)	0.922	(0.798)	1.003	(0.992)	0.962	(0.896)	1.594	(0.145)	1.303	(0.452)	0.939	(0.848)	1.097	(0.682)
South	1.195	(0.532)	0.906	(0.740)	0.867	(0.645)	1.401	(0.251)	1.356	(0.324)	1.759	(0.098)	1.037	(0.908)	1.184	(0.440)
<b>Adolescent demographics</b>																
Grade	1.293 *	(0.000)	1.265 *	(0.000)	1.290 *	(0.000)	1.441 *	(0.000)	1.243 *	(0.002)	1.142	(0.115)	1.380 *	(0.000)	1.290 *	(0.000)
Male	0.833	(0.423)	1.167	(0.504)	1.295	(0.242)	2.244 *	(0.000)	0.691	(0.093)	0.945	(0.790)	0.660	(0.068)	1.028	(0.857)
<i>Race/ ethnicity</i>																
Black	0.668	(0.569)	0.567	(0.483)	0.457	(0.297)	0.665	(0.687)	0.921	(0.916)	0.349	(0.163)	0.296	(0.082)	0.525	(0.286)
Hispanic	0.590	(0.309)	1.339	(0.624)	1.289	(0.672)	1.364	(0.635)	0.516	(0.176)	0.750	(0.454)	0.583	(0.384)	0.847	(0.688)
<b>Religiosity</b>																
Parent church attendance	1.235	(0.295)	1.020	(0.912)	1.117	(0.527)	1.038	(0.830)	1.307	(0.128)	1.611 *	(0.019)	2.938 *	(0.000)	1.370 *	(0.019)
Adolescent church attendance	0.795	(0.174)	0.770	(0.123)	1.099	(0.627)	1.029	(0.869)	0.971	(0.868)	1.008	(0.970)	1.421 *	(0.035)	0.995	(0.965)
<b>Parent attitudes about sex &amp; abstinence</b>																
<i>General attitudes</i>																
Sex before marriage against values	1.117	(0.707)	0.645	(0.182)	1.037	(0.894)	0.873	(0.672)	0.966	(0.908)	1.934 *	(0.019)	2.369 *	(0.001)	1.163	(0.449)
Sex for married people only	0.629	(0.129)	1.167	(0.597)	1.060	(0.840)	0.968	(0.907)	0.807	(0.450)	1.935 *	(0.023)	1.656 *	(0.049)	1.100	(0.625)
<i>Permissible adolescent behavior</i>																
Sex good thing to do	1.428	(0.608)	1.469	(0.613)	1.284	(0.738)	0.483	(0.223)	1.070	(0.917)	1.894	(0.288)	0.632	(0.468)	1.076	(0.885)
Sex okay if adolescent & partner think so	1.688	(0.531)	0.481	(0.389)	0.659	(0.525)	0.905	(0.872)	1.150	(0.844)	0.487	(0.288)	0.478	(0.207)	0.747	(0.600)
Sex would make life difficult	0.472	(0.174)	0.957	(0.925)	0.736	(0.404)	0.939	(0.881)	0.864	(0.725)	0.476	(0.108)	0.579	(0.198)	0.690	(0.261)
Sex okay if dating +1 year	1.205	(0.746)	2.111	(0.310)	1.478	(0.423)	0.943	(0.911)	1.988	(0.192)	3.692 *	(0.036)	5.411 *	(0.005)	2.028	(0.080)
Sex okay before finish HS	1.018	(0.963)	1.550	(0.218)	1.194	(0.577)	1.883 *	(0.037)	2.324 *	(0.018)	2.908 *	(0.003)	1.064	(0.834)	1.588 *	(0.047)
Sex okay if birth control used	0.338 *	(0.011)	0.446	(0.069)	0.665	(0.363)	0.587	(0.135)	0.418 *	(0.033)	0.458	(0.088)	0.377 *	(0.033)	0.458 *	(0.004)
Sex okay if plan to marry	3.138 *	(0.002)	2.057 *	(0.044)	1.113	(0.740)	1.772	(0.111)	1.491	(0.317)	1.619	(0.161)	2.164 *	(0.039)	1.821 *	(0.012)
Perceived parental control	1.141	(0.274)	0.869	(0.210)	1.180	(0.164)	1.142	(0.257)	1.072	(0.508)	1.277 *	(0.042)	1.585 *	(0.000)	1.164	(0.054)

**Table C-16.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Frequency of Communication about Specific Topics (N=734)**

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Relationship quality</b>																
<i>Parent assessment</i>																
Frequency sharing enjoyed activities with adolescent	0.838	(0.457)	0.690	(0.106)	0.856	(0.471)	0.991	(0.967)	1.177	(0.437)	1.060	(0.786)	1.011	(0.960)	0.934	(0.673)
Closeness of relationship	1.288	(0.222)	1.341	(0.114)	1.214	(0.331)	1.762 *	(0.005)	1.005	(0.980)	1.036	(0.885)	0.908	(0.688)	1.196	(0.185)
Overall relationship quality	1.177	(0.518)	1.479	(0.090)	1.281	(0.335)	0.803	(0.392)	1.335	(0.182)	1.262	(0.325)	1.122	(0.679)	1.190	(0.291)
<i>Adolescent assessment</i>																
Frequency sharing enjoyed activities with adolescent	1.108	(0.478)	1.352	(0.057)	1.231	(0.152)	1.150	(0.391)	1.132	(0.361)	0.955	(0.759)	0.799	(0.108)	1.090	(0.395)
Closeness of relationship	1.093	(0.617)	1.128	(0.490)	0.904	(0.640)	0.983	(0.924)	0.921	(0.609)	1.247	(0.218)	1.101	(0.576)	1.048	(0.713)
Overall relationship quality	1.417	(0.160)	1.065	(0.786)	1.312	(0.324)	1.246	(0.366)	1.282	(0.273)	1.107	(0.627)	1.478	(0.151)	1.265	(0.162)
<b>Exposure to Information in Class or Program</b>																
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	1.503	(0.095)	1.564	(0.060)	1.498	(0.059)	1.822 *	(0.003)	1.606 *	(0.026)	2.102 *	(0.001)	2.004 *	(0.001)	1.714 *	(0.001)
<i>Adolescent exposure to specific topics</i>																
How babies are made	1.093	(0.785)	1.388	(0.406)	1.555	(0.217)	1.586	(0.184)	1.718	(0.119)	1.017	(0.970)	0.684	(0.363)	1.238	(0.401)
Good romantic relationships	1.018	(0.945)	0.997	(0.989)	1.200	(0.448)	1.068	(0.772)	0.774	(0.258)	0.664	(0.134)	0.770	(0.284)	0.909	(0.570)
How to behave on dates	0.760	(0.252)	0.842	(0.465)	0.880	(0.576)	1.430	(0.128)	1.087	(0.702)	1.083	(0.767)	0.984	(0.949)	0.990	(0.952)
Resisting pressure to have sex	0.886	(0.707)	0.706	(0.383)	1.010	(0.978)	0.914	(0.799)	1.473	(0.211)	1.578	(0.234)	0.884	(0.744)	1.025	(0.922)
Waiting till marriage to have sex	1.931 *	(0.019)	1.181	(0.486)	0.902	(0.736)	0.738	(0.255)	1.262	(0.404)	1.155	(0.622)	1.822	(0.064)	1.220	(0.288)
Religious values and sex	0.838	(0.513)	1.169	(0.517)	1.185	(0.498)	1.257	(0.324)	0.901	(0.674)	1.271	(0.334)	1.494	(0.152)	1.140	(0.440)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.



**Table C-17.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Frequency of Communication about Specific Topics (N=734)**  
(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>																
Age	0.962 *	(0.016)	0.961 *	(0.032)	0.978	(0.101)	0.980	(0.081)	0.922 *	(0.000)	0.937 *	(0.000)	0.953 *	(0.003)	0.956 *	(0.000)
Male	0.749	(0.308)	0.799	(0.416)	0.577	(0.062)	0.621	(0.120)	1.049	(0.862)	1.162	(0.587)	1.128	(0.652)	0.840	(0.391)
<i>Race/ ethnicity</i>																
Black	1.335	(0.712)	1.832	(0.487)	0.894	(0.896)	0.848	(0.892)	0.568	(0.467)	1.747	(0.497)	2.848	(0.155)	1.267	(0.730)
Hispanic	0.458	(0.229)	0.560	(0.399)	0.348	(0.097)	0.298	(0.066)	0.786	(0.705)	0.843	(0.724)	1.153	(0.837)	0.573	(0.271)
English not primary language at home	2.870	(0.191)	1.783	(0.390)	0.524	(0.154)	2.097	(0.270)	1.010	(0.987)	0.525	(0.390)	0.815	(0.771)	1.135	(0.806)
<i>Marital status</i>																
Divorced or separated	2.492 *	(0.027)	1.250	(0.589)	0.927	(0.823)	2.392 *	(0.011)	1.571	(0.186)	1.462	(0.378)	0.832	(0.606)	1.446	(0.154)
Never married	1.666	(0.378)	0.962	(0.953)	0.673	(0.510)	0.787	(0.751)	1.338	(0.637)	0.385	(0.135)	0.591	(0.358)	0.824	(0.695)
Single parent	0.470	(0.067)	0.851	(0.682)	0.669	(0.247)	0.307 *	(0.001)	0.547	(0.073)	0.808	(0.607)	0.975	(0.941)	0.621	(0.065)
<b>Household socioeconomic status</b>																
Income	1.076	(0.270)	1.100	(0.103)	1.007	(0.907)	0.950	(0.399)	0.975	(0.645)	1.010	(0.872)	1.094	(0.141)	1.029	(0.509)
<i>Maximum educational attainment</i>																
HS diploma or less only	1.171	(0.558)	2.130 *	(0.003)	0.775	(0.394)	0.771	(0.349)	1.399	(0.205)	1.952 *	(0.021)	1.241	(0.405)	1.260	(0.189)
College diploma	0.829	(0.493)	1.333	(0.271)	1.055	(0.854)	0.850	(0.582)	1.046	(0.856)	1.107	(0.721)	1.061	(0.832)	1.029	(0.878)
Urban residence	0.694	(0.257)	1.014	(0.961)	0.911	(0.741)	0.797	(0.361)	0.810	(0.387)	0.912	(0.747)	0.896	(0.671)	0.856	(0.400)
<i>Geographic region of residence</i>																
Midwest	0.943	(0.869)	0.473 *	(0.040)	0.518	(0.061)	0.779	(0.493)	0.962	(0.921)	0.527	(0.103)	0.390 *	(0.004)	0.621	(0.082)
West	1.063	(0.868)	0.780	(0.480)	0.940	(0.852)	0.898	(0.718)	1.480	(0.237)	1.205	(0.611)	0.934	(0.841)	1.022	(0.927)
South	1.103	(0.763)	0.810	(0.530)	0.817	(0.535)	1.329	(0.352)	1.254	(0.492)	1.674	(0.162)	1.012	(0.972)	1.109	(0.670)
<b>Adolescent demographics</b>																
Grade	1.350 *	(0.000)	1.293 *	(0.000)	1.306 *	(0.000)	1.460 *	(0.000)	1.287 *	(0.001)	1.171	(0.076)	1.389 *	(0.000)	1.320 *	(0.000)
Male	0.790	(0.308)	1.167	(0.488)	1.293	(0.261)	2.227 *	(0.000)	0.679	(0.090)	0.926	(0.719)	0.650	(0.063)	1.012	(0.941)
<i>Race/ ethnicity</i>																
Black	0.545	(0.433)	0.498	(0.389)	0.438	(0.314)	0.655	(0.709)	0.872	(0.854)	0.328	(0.171)	0.275	(0.073)	0.483	(0.271)
Hispanic	0.457	(0.124)	1.191	(0.776)	1.214	(0.753)	1.288	(0.704)	0.458	(0.147)	0.698	(0.371)	0.548	(0.319)	0.762	(0.527)
<b>Religiosity</b>																
Parent church attendance	1.109	(0.641)	0.936	(0.733)	1.062	(0.737)	0.981	(0.913)	1.239	(0.250)	1.540 *	(0.045)	2.924 *	(0.000)	1.293	(0.069)
Adolescent church attendance	0.856	(0.412)	0.822	(0.282)	1.157	(0.467)	1.077	(0.666)	1.048	(0.809)	1.063	(0.787)	1.459 *	(0.024)	1.052	(0.707)
<b>Parent attitudes about sex &amp; abstinence</b>																
<i>General attitudes</i>																
Sex before marriage against values	1.198	(0.535)	0.627	(0.114)	1.027	(0.923)	0.906	(0.756)	0.949	(0.859)	1.913 *	(0.025)	2.445 *	(0.000)	1.176	(0.398)
Sex for married people only	0.573	(0.060)	1.116	(0.690)	1.024	(0.935)	0.913	(0.745)	0.757	(0.305)	2.001 *	(0.014)	1.591	(0.064)	1.054	(0.777)
<i>Permissible adolescent behavior</i>																
Sex good thing to do	1.583	(0.510)	1.577	(0.502)	1.330	(0.688)	0.538	(0.282)	1.121	(0.849)	1.939	(0.272)	0.653	(0.516)	1.142	(0.775)
Sex okay if adolescent & partner think so	1.291	(0.746)	0.401	(0.232)	0.559	(0.347)	0.751	(0.636)	1.009	(0.990)	0.413	(0.195)	0.459	(0.185)	0.635	(0.377)
Sex would make life difficult	0.621	(0.344)	1.285	(0.558)	0.869	(0.681)	1.081	(0.845)	1.141	(0.752)	0.587	(0.237)	0.619	(0.255)	0.846	(0.577)
Sex okay if dating +1 year	1.656	(0.426)	2.579	(0.133)	1.566	(0.358)	1.102	(0.855)	2.272	(0.126)	4.124 *	(0.031)	5.750 *	(0.004)	2.351 *	(0.034)
Sex okay before finish HS	1.118	(0.760)	1.696	(0.120)	1.206	(0.563)	1.891 *	(0.033)	2.447 *	(0.012)	2.880 *	(0.003)	1.066	(0.829)	1.644 *	(0.027)

**Table C-17.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Frequency of Communication about Specific Topics (N=734)**  
(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent had more frequent conversations with adolescent about...	<i>The basics of how babies are made, pregnancy, or birth</i>		<i>Sexually transmitted diseases or HIV/AIDS</i>		<i>How to have good romantic relationships</i>		<i>How to behave on dates</i>		<i>How to resist pressures to have sexual intercourse</i>		<i>Waiting to have sexual intercourse until married</i>		<i>How religious values relate to sexual intercourse</i>		<i>Average association across topics</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
Sex okay if birth control used	0.316	* (0.009)	0.484	(0.096)	0.721	(0.473)	0.589	(0.150)	0.412	* (0.037)	0.472	(0.111)	0.375	* (0.031)	0.465	* (0.006)
Sex okay if plan to marry	3.486	* (0.001)	2.319	* (0.012)	1.175	(0.610)	1.812	(0.093)	1.748	(0.157)	1.698	(0.133)	2.151	* (0.040)	1.957	* (0.004)
Perceived parental control	1.115	(0.388)	0.836	(0.120)	1.166	(0.200)	1.123	(0.331)	1.039	(0.736)	1.282	* (0.048)	1.557	* (0.000)	1.142	(0.113)
<b>Relationship quality</b>																
<i>Parent assessment</i>																
Frequency sharing enjoyed activities with adolescent	0.849	(0.505)	0.664	(0.102)	0.868	(0.520)	1.001	(0.997)	1.222	(0.362)	1.063	(0.776)	1.031	(0.885)	0.942	(0.719)
Closeness of relationship	1.169	(0.486)	1.303	(0.168)	1.199	(0.379)	1.752	* (0.006)	0.976	(0.914)	1.010	(0.970)	0.893	(0.640)	1.159	(0.293)
Overall relationship quality	1.129	(0.667)	1.466	(0.128)	1.269	(0.378)	0.780	(0.347)	1.358	(0.194)	1.282	(0.317)	1.093	(0.759)	1.176	(0.368)
<i>Adolescent assessment</i>																
Frequency sharing enjoyed activities with adolescent	1.176	(0.260)	1.429	* (0.029)	1.263	(0.106)	1.180	(0.314)	1.169	(0.240)	0.964	(0.812)	0.808	(0.128)	1.125	(0.248)
Closeness of relationship	0.934	(0.733)	0.904	(0.632)	0.814	(0.354)	0.919	(0.656)	0.779	(0.146)	1.104	(0.608)	1.121	(0.517)	0.932	(0.609)
Overall relationship quality	1.347	(0.239)	0.961	(0.874)	1.248	(0.423)	1.183	(0.488)	1.183	(0.503)	1.068	(0.757)	1.473	(0.170)	1.199	(0.303)
<b>Exposure to Information in Class or Program</b>																
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	1.635	* (0.044)	1.618	* (0.035)	1.565	* (0.037)	1.855	* (0.002)	1.708	* (0.013)	2.249	* (0.000)	2.057	* (0.001)	1.798	* (0.000)
<i>Adolescent exposure to specific topics</i>																
How babies are made	0.964	(0.909)	1.215	(0.613)	1.472	(0.278)	1.452	(0.292)	1.457	(0.284)	0.995	(0.990)	0.661	(0.312)	1.133	(0.616)
Good romantic relationships	0.968	(0.902)	0.993	(0.978)	1.242	(0.381)	1.100	(0.677)	0.793	(0.312)	0.673	(0.154)	0.759	(0.271)	0.914	(0.593)
How to behave on dates	0.658	(0.107)	0.727	(0.198)	0.819	(0.401)	1.339	(0.231)	0.986	(0.952)	0.998	(0.995)	0.978	(0.928)	0.907	(0.580)
Resisting pressure to have sex	0.928	(0.847)	0.737	(0.426)	1.003	(0.993)	0.935	(0.856)	1.539	(0.200)	1.548	(0.277)	0.913	(0.819)	1.049	(0.863)
Waiting till marriage to have sex	2.289	* (0.005)	1.327	(0.265)	0.938	(0.842)	0.766	(0.320)	1.389	(0.274)	1.198	(0.536)	1.871	(0.052)	1.315	(0.155)
Religious values and sex	0.794	(0.397)	1.067	(0.789)	1.140	(0.609)	1.234	(0.369)	0.808	(0.420)	1.139	(0.607)	1.576	(0.097)	1.081	(0.651)
<b>Comfort Levels Talking about Sex</b>																
Parent comfort level	2.104	* (0.000)	1.664	* (0.004)	1.417	(0.070)	1.395	(0.051)	1.706	* (0.002)	1.357	(0.069)	1.352	(0.109)	1.552	* (0.002)
Adolescent comfort level	1.573	* (0.004)	1.801	* (0.000)	1.273	(0.052)	1.204	(0.157)	1.538	* (0.001)	1.332	* (0.026)	0.938	(0.627)	1.354	* (0.002)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-18.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Communication of Specific Messages (N=735)**

Association with odds that parent ever told adolescent...	<i>Young people should not engage in sex until marriage</i>			<i>Young people should not have sex until they are with someone they would like to marry</i>			<i>Young people should not have sex until at least finishing high school</i>			<i>It's okay for young people to have sex if they use a condom</i>		
	OR		p-value	OR		p-value	OR		p-value	OR		p-value
<b>Parent demographics</b>												
Age	0.913	*	(0.000)	1.025		(0.125)	0.985		(0.328)	0.997		(0.886)
Male	0.798		(0.536)	1.049		(0.868)	1.396		(0.239)	0.693		(0.336)
<i>Race/ ethnicity</i>												
Black	5.685	*	(0.047)	1.342		(0.687)	4.267		(0.081)	19.414	*	(0.001)
Hispanic	1.250		(0.757)	1.345		(0.585)	0.447		(0.133)	1.757		(0.466)
English not primary language at home	0.295		(0.079)	1.962		(0.265)	1.689		(0.386)	1.567		(0.539)
<i>Marital status</i>												
Divorced or separated	0.810		(0.640)	0.549		(0.175)	1.223		(0.600)	0.559		(0.257)
Never married	0.391		(0.127)	1.018		(0.975)	2.155		(0.180)	2.988		(0.104)
Single parent	1.092		(0.842)	1.042		(0.923)	0.748		(0.459)	1.135		(0.803)
<b>Household socioeconomic status</b>												
Income	0.907		(0.177)	0.859	*	(0.010)	0.876	*	(0.032)	0.810	*	(0.004)
<i>Maximum educational attainment</i>												
HS diploma or less only	1.549		(0.262)	1.111		(0.713)	1.061		(0.832)	1.447		(0.398)
College diploma	1.917		(0.115)	1.489		(0.171)	1.260		(0.406)	1.376		(0.487)
Urban residence	1.617		(0.193)	1.274		(0.421)	0.860		(0.598)	0.733		(0.378)
<i>Geographic region of residence</i>												
Midwest	0.429	*	(0.041)	0.472	*	(0.028)	0.360	*	(0.003)	0.228	*	(0.002)
West	1.150		(0.761)	0.503		(0.050)	0.996		(0.991)	0.652		(0.325)
South	1.221		(0.611)	0.463	*	(0.026)	0.474	*	(0.027)	0.259	*	(0.001)
<b>Adolescent demographics</b>												
Grade	1.092		(0.210)	1.025		(0.712)	1.074		(0.251)	1.053		(0.576)
Male	0.802		(0.441)	1.229		(0.367)	1.275		(0.283)	1.824		(0.062)
<i>Race/ ethnicity</i>												
Black	0.146	*	(0.031)	0.402		(0.210)	0.169	*	(0.032)	0.121	*	(0.013)
Hispanic	0.436		(0.159)	0.708		(0.490)	1.206		(0.702)	0.900		(0.898)
<b>Religiosity</b>												
Parent church attendance	1.900	*	(0.005)	1.158		(0.473)	1.423		(0.067)	0.860		(0.574)
Adolescent church attendance	1.319		(0.175)	0.572	*	(0.002)	0.556	*	(0.001)	0.614	*	(0.031)
<b>Parent attitudes about sex &amp; abstinence</b>												
<i>General attitudes</i>												
Sex before marriage against values	2.357	*	(0.005)	0.739		(0.292)	1.505		(0.171)	0.416	*	(0.014)
Sex for married people only	4.645	*	(0.000)	0.594		(0.083)	0.289	*	(0.000)	0.487		(0.076)

**Table C-18.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Communication of Specific Messages (N=735)**

Association with odds that parent ever told adolescent...	Young people should not engage in sex until marriage		Young people should not have sex until they are with someone they would like to marry		Young people should not have sex until at least finishing high school		It's okay for young people to have sex if they use a condom	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<i>Permissible adolescent behavior</i>								
Sex good thing to do	1.095	(0.916)	0.414	(0.270)	0.301	(0.055)	1.387	(0.694)
Sex okay if adolescent & partner think so	4.858	(0.110)	1.776	(0.442)	3.284	(0.196)	5.619 *	(0.021)
Sex would make life difficult	2.175	(0.146)	1.610	(0.255)	1.623	(0.309)	0.487	(0.183)
Sex okay if dating +1 year	1.452	(0.603)	1.026	(0.966)	2.120	(0.238)	0.180 *	(0.007)
Sex okay before finish HS	11.750	(0.000)	1.194	(0.672)	1.666	(0.143)	0.445	(0.090)
Sex okay if birth control used	0.173 *	(0.001)	0.864	(0.741)	0.473	(0.087)	0.507	(0.168)
Sex okay if plan to marry	2.475	(0.074)	0.398 *	(0.024)	0.852	(0.697)	0.849	(0.763)
Perceived parental control	0.960	(0.752)	1.133	(0.287)	1.218	(0.075)	0.973	(0.853)
<b>Relationship quality</b>								
<i>Parent assessment</i>								
Frequency sharing enjoyed activities with adolescent	1.239	(0.475)	0.949	(0.834)	0.813	(0.364)	0.959	(0.898)
Closeness of relationship	1.459	(0.213)	1.144	(0.605)	1.189	(0.465)	1.110	(0.758)
Overall relationship quality	0.686	(0.273)	0.985	(0.955)	0.838	(0.502)	2.309 *	(0.031)
<i>Adolescent assessment</i>								
Frequency sharing enjoyed activities with adolescent	0.865	(0.458)	1.144	(0.364)	1.225	(0.182)	1.203	(0.421)
Closeness of relationship	1.224	(0.360)	1.236	(0.312)	0.943	(0.780)	0.638	(0.174)
Overall relationship quality	1.219	(0.484)	0.741	(0.240)	1.012	(0.965)	0.951	(0.881)
<b>Exposure to Information in Class or Program</b>								
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	2.072 *	(0.008)	1.762 *	(0.017)	1.737 *	(0.018)	1.158	(0.643)
<i>Adolescent exposure to specific topics</i>								
How babies are made	0.818	(0.725)	1.208	(0.578)	1.445	(0.290)	0.669	(0.302)
Good romantic relationships	0.990	(0.973)	1.329	(0.313)	1.566	(0.072)	2.283 *	(0.019)
How to behave on dates	1.219	(0.537)	1.211	(0.467)	0.580 *	(0.021)	1.421	(0.305)
Resisting pressure to have sex	0.992	(0.984)	0.607	(0.165)	0.951	(0.886)	0.657	(0.306)
Waiting till marriage to have sex	1.310	(0.409)	1.439	(0.209)	1.196	(0.537)	0.318 *	(0.002)
Religious values and sex	1.405	(0.297)	0.499 *	(0.009)	0.837	(0.475)	1.832	(0.090)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-19.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Communication of Specific Messages (N=734)**  
(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent ever told adolescent...	<i>Young people should not engage in sex until marriage</i>		<i>Young people should not have sex until they are with someone they would like to marry</i>		<i>Young people should not have sex until at least finishing high school</i>		<i>It's okay for young people to have sex if they use a condom</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Parent demographics</b>								
Age	0.913	* (0.000)	1.027	(0.104)	0.986	(0.342)	0.996	(0.845)
Male	1.060	(0.877)	1.157	(0.617)	1.639	(0.089)	0.876	(0.729)
<i>Race/ ethnicity</i>								
Black	5.073	(0.056)	1.337	(0.697)	4.293	(0.108)	21.934	* (0.000)
Hispanic	1.289	(0.711)	1.277	(0.649)	0.423	(0.107)	1.843	(0.416)
English not primary language at home	0.394	(0.166)	2.434	(0.157)	2.243	(0.184)	2.141	(0.327)
<i>Marital status</i>								
Divorced or separated	0.864	(0.742)	0.542	(0.162)	1.221	(0.597)	0.540	(0.230)
Never married	0.359	(0.121)	1.010	(0.986)	2.160	(0.173)	2.951	(0.078)
Single parent	1.137	(0.765)	1.040	(0.927)	0.734	(0.421)	1.007	(0.988)
<b>Household socioeconomic status</b>								
Income	1.541	(0.252)	1.113	(0.706)	1.040	(0.887)	1.343	(0.494)
<i>Maximum educational attainment</i>								
HS diploma or less only	1.987	(0.101)	1.493	(0.169)	1.256	(0.420)	1.426	(0.434)
College diploma	1.655	(0.174)	1.284	(0.409)	0.883	(0.663)	0.773	(0.469)
Urban residence	0.359	* (0.014)	0.459	* (0.022)	0.338	* (0.002)	0.188	* (0.001)
<i>Geographic region of residence</i>								
Midwest	0.918	(0.852)	0.495	* (0.047)	0.961	(0.910)	0.610	(0.269)
West	1.017	(0.965)	0.446	* (0.021)	0.446	* (0.018)	0.240	* (0.001)
South	1.116	(0.125)	1.028	(0.674)	1.077	(0.232)	1.088	(0.352)
<b>Adolescent demographics</b>								
Grade	0.817	(0.490)	1.222	(0.382)	1.280	(0.276)	1.825	(0.068)
Male	0.141	* (0.026)	0.396	(0.215)	0.162	* (0.045)	0.111	* (0.012)
<i>Race/ ethnicity</i>								
Black	0.453	(0.142)	0.692	(0.458)	1.172	(0.747)	0.783	(0.751)
Hispanic	1.799	* (0.014)	1.136	(0.528)	1.384	(0.088)	0.790	(0.369)
<b>Religiosity</b>								
Parent church attendance	0.911	(0.196)	0.854	* (0.008)	0.869	* (0.023)	0.795	* (0.003)
Adolescent church attendance	1.456	(0.078)	0.575	* (0.002)	0.570	* (0.001)	0.621	* (0.033)

**Table C-19.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Communication of Specific Messages (N=734)**  
(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent ever told adolescent...	Young people should not engage in sex until marriage			Young people should not have sex until they are with someone they would like to marry			Young people should not have sex until at least finishing high school			It's okay for young people to have sex if they use a condom		
	OR	p-value		OR	p-value		OR	p-value		OR	p-value	
<b>Parent attitudes about sex &amp; abstinence</b>												
<i>General attitudes</i>												
Sex before marriage against values	2.417	*	(0.004)	0.702		(0.211)	1.424		(0.224)	0.417	*	(0.013)
Sex for married people only	4.940	*	(0.000)	0.612		(0.100)	0.294	*	(0.000)	0.446		(0.054)
<i>Permissible adolescent behavior</i>												
Sex good thing to do	1.178		(0.833)	0.419		(0.273)	0.312		(0.064)	1.445		(0.652)
Sex okay if adolescent & partner think so	4.391		(0.112)	1.751		(0.456)	3.182		(0.225)	5.531	*	(0.025)
Sex would make life difficult	2.866	*	(0.031)	1.698		(0.205)	1.765		(0.214)	0.563		(0.273)
Sex okay if dating +1 year	1.417		(0.635)	1.045		(0.942)	2.259		(0.186)	0.198	*	(0.014)
Sex okay before finish HS	12.554	*	(0.000)	1.194		(0.673)	1.714		(0.123)	0.457		(0.101)
Sex okay if birth control used	0.177	*	(0.002)	0.866		(0.743)	0.482		(0.085)	0.512		(0.183)
Sex okay if plan to marry	2.440		(0.067)	0.408	*	(0.027)	0.892		(0.777)	0.912		(0.868)
Perceived parental control	0.964		(0.790)	1.138		(0.270)	1.220		(0.070)	0.947		(0.716)
<b>Relationship quality</b>												
<i>Parent assessment</i>												
Frequency sharing enjoyed activities with adolescent	1.216		(0.518)	0.949		(0.830)	0.802		(0.326)	0.998		(0.995)
Closeness of relationship	1.489		(0.197)	1.163		(0.563)	1.206		(0.435)	1.101		(0.783)
Overall relationship quality	0.690		(0.301)	0.991		(0.975)	0.837		(0.506)	2.255		(0.053)
<i>Adolescent assessment</i>												
Frequency sharing enjoyed activities with adolescent	0.859		(0.467)	1.148		(0.350)	1.247		(0.141)	1.217		(0.388)
Closeness of relationship	0.981		(0.935)	1.182		(0.428)	0.855		(0.460)	0.573		(0.112)
Overall relationship quality	1.166		(0.586)	0.721		(0.201)	0.973		(0.915)	0.986		(0.965)
<b>Exposure to Information in Class or Program</b>												
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	2.163	*	(0.008)	1.787	*	(0.015)	1.761	*	(0.016)	1.293		(0.422)
<i>Adolescent exposure to specific topics</i>												
How babies are made	0.711		(0.548)	1.190		(0.608)	1.387		(0.352)	0.677		(0.328)
Good romantic relationships	1.022		(0.947)	1.321		(0.320)	1.593		(0.062)	2.304	*	(0.016)
How to behave on dates	1.139		(0.692)	1.193		(0.501)	0.555	*	(0.013)	1.332		(0.396)
Resisting pressure to have sex	0.974		(0.948)	0.618		(0.178)	0.955		(0.897)	0.627		(0.288)
Waiting till marriage to have sex	1.450		(0.267)	1.427		(0.214)	1.217		(0.491)	0.341	*	(0.003)
Religious values and sex	1.195		(0.597)	0.474	*	(0.004)	0.771		(0.294)	1.955		(0.063)

**Table C-19.**  
**Estimated Associations for Parent-Adolescent Communication — Results of Logistic Regressions for Communication of Specific Messages (N=734)**  
(Adjusted for Overall Parent and Adolescent Comfort Levels Talking about Sex and Sexual Issues)

Association with odds that parent ever told adolescent...	<i>Young people should not engage in sex until marriage</i>		<i>Young people should not have sex until they are with someone they would like to marry</i>		<i>Young people should not have sex until at least finishing high school</i>		<i>It's okay for young people to have sex if they use a condom</i>	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
<b>Comfort Levels Talking about Sex</b>								
Parent comfort level	1.284	(0.240)	0.987	(0.940)	1.041	(0.799)	1.700 *	(0.034)
Adolescent comfort level	1.747 *	(0.000)	1.122	(0.419)	1.277 *	(0.048)	1.111	(0.537)

\* indicates that estimated odds ratio is statistically significant at the 95% confidence level.

**Table C-20.**

**Estimated Associations for Peer Attitudes — Results of Logistic Regressions for General Attitudes about Sex and Abstinence, with (N=928) and without (N=760) Adjustment for Adolescent Exposure to Information about Sex, Abstinence, or Sexual Values in a Class or Program**

Association with odds that adolescent reported that their peers...	...think someone should wait until marriage before having sexual intercourse		...do not think it is okay for young people their age to have sexual intercourse		Average association with peer attitudes about sex and abstinence	
Class/program info variables included?	N	Y	N	Y	N	Y
<b>Household socioeconomic status</b>						
Income	1.064 (0.213)	1.134* (0.019)	1.029 (0.567)	1.107 (0.075)	1.046 (0.271)	1.120* (0.015)
Maximum educational attainment						
HS diploma or less	0.874 (0.666)	1.198 (0.588)	0.660 (0.180)	0.784 (0.457)	0.759 (0.295)	0.969 (0.909)
Some college	0.881 (0.530)	0.891 (0.613)	0.715 (0.147)	0.836 (0.481)	0.794 (0.202)	0.863 (0.460)
College diploma	0.760 (0.242)	0.812 (0.425)	0.821 (0.407)	0.783 (0.342)	0.790 (0.247)	0.797 (0.313)
Urban residence	0.883 (0.536)	0.887 (0.584)	1.029 (0.891)	0.985 (0.947)	0.953 (0.781)	0.935 (0.726)
Geographic region of residence						
Midwest	1.182 (0.505)	1.302 (0.373)	1.027 (0.921)	1.009 (0.979)	1.102 (0.653)	1.146 (0.608)
West	1.116 (0.686)	1.404 (0.269)	0.918 (0.765)	0.835 (0.594)	1.012 (0.959)	1.083 (0.768)
South	1.564 (0.090)	1.999* (0.030)	1.227 (0.462)	1.261 (0.507)	1.386 (0.137)	1.588 (0.089)
<b>Adolescent demographics</b>						
Grade	0.733* (0.000)	0.720* (0.000)	0.596* (0.000)	0.625* (0.000)	0.661* (0.000)	0.671* (0.000)
Male	0.480* (0.000)	0.397* (0.000)	0.458* (0.000)	0.472* (0.000)	0.469* (0.000)	0.433* (0.000)
Race/ ethnicity						
Black	0.374* (0.003)	0.369* (0.008)	0.675 (0.201)	0.607 (0.173)	0.502* (0.008)	0.473* (0.016)
Hispanic	0.772 (0.289)	0.710 (0.227)	0.896 (0.660)	0.918 (0.747)	0.832 (0.391)	0.807 (0.355)
<b>Religiosity</b>						
Parent church attendance	1.495* (0.014)	1.405 (0.072)	1.334 (0.071)	1.498* (0.019)	1.412* (0.012)	1.451* (0.015)
Adolescent church attendance	1.507* (0.003)	1.544* (0.011)	1.550* (0.004)	1.547* (0.014)	1.528* (0.001)	1.546* (0.004)
<b>Exposure to Information in Class or Program</b>						
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	--	1.904* (0.002)	--	1.033 (0.865)	--	1.402* (0.033)
Adolescent exposure to specific topics						
How babies are made	--	0.885 (0.751)	--	0.355* (0.006)	--	0.560 (0.072)
Good romantic relationships	--	1.290 (0.306)	--	0.837 (0.455)	--	1.039 (0.847)
How to behave on dates	--	0.841 (0.451)	--	0.929 (0.749)	--	0.884 (0.531)
Resisting pressure to have sex	--	0.465 (0.086)	--	1.890* (0.043)	--	0.937 (0.799)
Waiting till marriage to have sex	--	1.378 (0.277)	--	1.037 (0.875)	--	1.195 (0.433)
Religious values and sex	--	1.190 (0.462)	--	0.951 (0.819)	--	1.063 (0.745)

(p values in parentheses)

\* Indicates that estimated odds ratio is statistically significant at the 95% confidence level.



**Table C-21.****Estimated Associations for Peer-Adolescent Communication — Results of Logistic Regressions for Frequency of Communication with Peers**

<i>Class/program info variables included?</i>	<i>N</i>	<i>N</i>	<i>Y</i>
<i>Peer attitudes about sex included?</i>	<i>N</i>	<i>Y</i>	<i>Y</i>
	(n=933)	(n=921)	(n=756)
<b>Household socioeconomic status</b>			
Income	0.995 (0.908)	0.994 (0.888)	0.986 (0.777)
<i>Maximum educational attainment</i>			
HS diploma or less	0.723 (0.275)	0.680 (0.198)	0.883 (0.699)
Some college	0.688 (0.082)	0.662 (0.063)	0.686 (0.145)
College diploma	0.752 (0.179)	0.772 (0.239)	0.729 (0.190)
Urban residence	1.002 (0.992)	1.014 (0.952)	1.164 (0.558)
<i>Geographic region of residence</i>			
Midwest	0.974 (0.920)	0.968 (0.904)	1.017 (0.954)
West	0.990 (0.970)	0.970 (0.910)	0.912 (0.770)
South	1.047 (0.858)	1.026 (0.921)	1.061 (0.810)
<b>Adolescent demographics</b>			
Grade	1.324* (0.000)	1.278* (0.000)	1.221* (0.000)
Male	0.738 (0.092)	0.723 (0.072)	0.510* (0.001)
<i>Race/ ethnicity</i>			
Black	1.107 (0.743)	1.134 (0.698)	1.044 (0.899)
Hispanic	0.959 (0.879)	0.971 (0.917)	0.988 (0.968)
<b>Religiosity</b>			
Parent church attendance	0.973 (0.847)	0.950 (0.726)	0.793 (0.201)
Adolescent church attendance	1.010 (0.938)	1.045 (0.750)	1.071 (0.687)
<b>Peer Attitudes</b>			
Peers think someone should wait until marriage before having sexual intercourse	--	1.130 (0.322)	1.014 (0.907)
Peers don't think it's okay for young people their age to have sexual intercourse	--	0.796 (0.080)	0.821 (0.140)

**Table C-21.****Estimated Associations for Peer-Adolescent Communication — Results of Logistic Regressions for Frequency of Communication with Peers**

Exposure to Information in Class or Program			
Adolescent participation in program teaching about waiting to have sex until marriage (parent report)	--	--	1.848* (0.003)
<i>Adolescent exposure to specific topics</i>			
How babies are made	--	--	2.703* (0.002)
Good romantic relationships	--	--	0.963 (0.884)
How to behave on dates	--	--	1.595 (0.051)
Resisting pressure to have sex	--	--	0.921 (0.798)
Waiting till marriage to have sex	--	--	0.817 (0.416)
Religious values and sex	--	--	1.114 (0.633)
Results reported as odds ratios; (p values in parentheses)			
* indicates that estimated odds ratio is statistically significant at the 95% confidence level.			

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### **Corporate Offices**

#### **Cambridge, Massachusetts**

55 Wheeler Street  
Cambridge, MA 02138-1168  
617.492.7100

[www.abtassociates.com](http://www.abtassociates.com)

#### **Bethesda, Maryland**

Bethesda One  
4800 Montgomery Lane  
Suite 600  
Bethesda, MD 20814-3460  
301.913.0500

Bethesda Two  
4550 Montgomery Avenue  
Suite 800 North  
Bethesda, MD 20814-3343  
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640 North LaSalle Street  
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Hadley, MA 01035-9462  
413.586.8635

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781.372.6500

#### **Durham, North Carolina**

4620 Creekstone Drive  
Maplewood Building  
Suite 190  
Durham, NC 27703-8062  
919.294.7700



Abt Associates Inc.