

## Original Study

# Associations between Religiosity and Sexual and Contraceptive Behaviors

Melanie A. Gold, DO<sup>1,2</sup>, Anya V. Sheftel, BA<sup>2</sup>, Laurel Chiappetta, MS<sup>2</sup>, Amanda J. Young, PhD<sup>3</sup>, Allan Zuckoff, PhD<sup>4</sup>, Carlo C. DiClemente, PhD<sup>5</sup>, and Brian A. Primack, MD, EdM, MS<sup>2,6,7</sup>

<sup>1</sup>Division of Student Affairs, University of Pittsburgh Student Health Service, Pittsburgh, Pennsylvania; <sup>2</sup>Division of Adolescent Medicine, Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; <sup>3</sup>Department of Communication, University of Memphis, Memphis, Tennessee; <sup>4</sup>Department of Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; <sup>5</sup>Department of Psychology, University of Maryland, Baltimore, Maryland; <sup>6</sup>Division of General Internal Medicine, Department of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; <sup>7</sup>Center for Research on Health Care, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, USA

**Abstract.** *Study Objective:* To determine associations between religiosity and female adolescents' sexual and contraceptive behaviors.

*Design:* We conducted a secondary analysis on data from a randomized controlled trial comparing interventions designed to prevent pregnancy and sexually transmitted diseases (STDs). Multivariable modeling assessed the association between a religiosity index consisting of items related to religious behaviors and impact of religious beliefs on decisions and sexual outcomes.

*Participants:* 572 female adolescents aged 13 to 21, recruited via a hospital-based adolescent clinic and community-wide advertisements.

*Main Outcome Measures:* Sexual experience, pregnancy, STDs, number of lifetime partners, frequency of sexual activity, previous contraceptive use, and planned contraceptive use.

*Results:* Mean participant age was  $17.4 \pm 2.2$  years and 68% had been sexually active. Most (74.1%) had a religious affiliation and over half (52.8%) reported that their religious beliefs impact their decision to have sex at least "somewhat." Multivariate analyses showed that, compared with those with low religiosity, those with high religiosity were less likely to have had sexual intercourse (OR = 0.23, 95% CI = 0.14, 0.39). Among sexually active participants, those with high religiosity were less likely to have been pregnant (OR = 0.46, 95% CI = 0.22, 0.97), to have had an STD (OR = 0.42, 95% CI = 0.22, 0.81), or to have had multiple ( $\geq 4$ ) lifetime partners (OR = 0.38, 95% CI = 0.21, 0.68) compared to those with low religiosity. Levels of religiosity were not significantly associated with frequency of intercourse, contraception use at last intercourse, or planned contraceptive use.

*Conclusion:* In this cohort, religiosity appeared to be a protective factor rather than a risk factor with regard to sexual behavior and was not associated with contraception use.

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**Key Words.** Adolescent—Religion—Religiosity—Sexual behavior—Contraception—Abstinence—Virginal—Sexual decision making—Pregnancy—Sexually transmitted disease

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## Introduction

Recent data indicate that 47.8% of female high school students have had sex at least once in their lives, and 35.0% are currently sexually active.<sup>1</sup> High risk behavior is problematic in this age group: 14.9% of female high school students have had sexual intercourse with four or more partners over their lifetimes, 7.1% have initiated sex at age 12 or below, and 38.5% of currently sexually active students report using no contraception at last intercourse.<sup>1</sup> These behaviors confer high risk for sexually transmitted diseases (STDs) and unintended pregnancy.<sup>1</sup>

A number of risk and protective factors are associated sexual risk-taking behaviors. Those who initiate sex at a younger age are more likely to have a higher number of lifetime sexual partners.<sup>2</sup> Higher socioeconomic status (SES) and elevated maternal level of education play an important role in delaying coitarche.<sup>2–7</sup> Racial differences have also been associated with the frequency of sexual intercourse; the Youth Risk Behavior Surveillance System survey found that African-American female adolescents are

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Address correspondence to: Brian A. Primack, MD, University of Pittsburgh School of Medicine, 230 McKee Place, Suite 600, Pittsburgh, PA 15213; E-mail: bprimack@pitt.edu

more likely than their Caucasian counterparts to engage in sexual intercourse.<sup>1</sup> Additionally, those adolescents who live with both parents are more likely to delay coitarche.<sup>3,4,8</sup>

Religiosity is another factor that may influence adolescents' decisions about sex and contraception use; however, the direction of its effect is not clear. Some studies have shown that religious affiliation, behavior, or attitudes may be a protective factor associated with delay of coitarche.<sup>2-4,8-14</sup> Religiosity also has been associated with decreased frequency of sexual activity and a lower number of sexual partners.<sup>11,12,15-17</sup> However, other researchers have found little association between religiosity and sexual behavior<sup>18</sup> and some have reported a *positive* correlation between importance of religion and sexual activity.<sup>19</sup> Additionally, a number of studies have shown religiosity to be associated with *less* frequent use of condoms and/or hormonal contraception.<sup>8,20,21</sup>

One potential limitation of previous research involves measurement of religiosity. Prior studies have commonly assessed religiosity by capturing constructs such as attendance at religious services and youth groups; importance of religion overall; frequency of praying; talking to religious leaders; and belief in a higher power.<sup>2,3,5,9,11,12,15,19,22-29</sup> Other researchers have distinguished between an "extrinsic" domain related to religious practice and an "intrinsic" domain associated with spiritual beliefs.<sup>12,21</sup> However, in each of these studies researchers have examined domains of religiosity without asking the participants directly whether religious beliefs made an impact on sexual and contraceptive decisions. A religiosity measure that included this potential aspect may be a helpful tool in assessing more directly the relationship between religiosity and sexual and contraceptive behaviors.

Furthermore, it is particularly important to continue research into the relationship between religiosity and sexual behaviors among young, predominantly African-American females of low SES. As noted above, compared with those of other races, African-Americans currently have higher risk for sexual risk taking behaviors, STDs, and early teenage pregnancy.<sup>30,31</sup> Despite this fact, research incorporating the influence of religiosity on African-American adolescents' sexual behaviors is uncommon. Furthermore, those studies that have addressed these issues have found that the sexual behaviors of poor, predominantly African-American females are less likely to be impacted by religiosity compared with their wealthier, non-African-American counterparts.<sup>13</sup>

The purpose of our study was to examine the role of religiosity as a protective or risk factor for sexual initiation and contraceptive behaviors among a sample of predominantly African-American female

adolescents. We used a new measure of religiosity that included the influence of religious beliefs on decisions about sexual and contraceptive behaviors. Based on prior studies, we hypothesized that high religiosity would be independently associated with lower odds of having had sexual intercourse (Hypothesis 1). Among sexually active participants, we hypothesized that higher religiosity would be independently associated with ever having been pregnant (Hypothesis 2), ever having had an STD (Hypothesis 3), fewer lifetime partners (Hypothesis 4) and less frequent sexual intercourse (Hypothesis 5). Consistent with prior research, we also hypothesized that higher religiosity would be associated with less use of contraception at last intercourse (Hypothesis 6) and lower odds of having a future contraceptive plan (Hypothesis 7).

## Methods

### Setting and Participants

The study protocol was approved by the Institutional Review Board of the Children's Hospital of Pittsburgh and the University of Pittsburgh. A waiver of parental consent was obtained, since under Title X adolescents can consent to contraceptive counseling services without parental consent. As part of a larger randomized controlled trial to compare a computer-assisted motivational intervention with didactic counseling to prevent pregnancy and STDs, we recruited female adolescents from (1) a hospital-based adolescent clinic; (2) advertisements posted on college campuses, at hospitals, community centers and local businesses; and (3) word of mouth.<sup>32</sup> Participants were eligible to enroll if they were aged 13 to 21 years and were able to return to the study office every 3 months for 18 months. Participants could enroll in the study regardless of their sexual history or contraceptive use history. Exclusion criteria included: (1) inability to speak English; (2) being currently pregnant or intending pregnancy in the next 18 months; (3) being medically or surgically sterile; (4) having a contraceptive implant or intrauterine contraceptive device; (5) planning exclusively same-gender sexual relationships in the future; (6) being in jail or on house arrest; (7) being in foster care; or (8) having visual or hearing impairment that would interfere with counseling and study interviews.

### Procedures

After completing the informed consent process and an eligibility assessment, participants were randomized by age (13-17 or 18-21 years), race (Caucasian or non-Caucasian), and sexual history (ever sexually active or virginal) to one of two counseling groups: a computer-assisted motivational intervention or

didactic counseling modules on abstinence, contraception and STD prevention. Prior to each of the three 30-minute counseling sessions, participants completed a 60 to 90-minute computerized assessment. This study utilized data from participants' baseline computerized assessment prior to intervention. Data was collected using a 60-90 minute computerized assessment that was designed by two of the authors (M.A.G. and A.J.Y.) and administered on Macintosh™ computers using the HyperCard™ authoring system.

### Measures

**Demographic Data.** We analyzed age as a continuous variable. Race/ethnicity was recorded as African-American, Caucasian, or Other. We used maternal education to approximate SES (1 = mother did not graduate high school; 2 = mother graduated high school but not college; 3 = mother graduated college). Because it has been shown to be related to sexual behaviors, we also analyzed "living arrangement" as a dichotomous variable: (1 = Lives with parent(s); 2 = Other living arrangement).

**Sexual and Contraceptive Behaviors (Outcome Variables).** All participants who reported ever having sexual intercourse were asked more detailed questions about their sexual, contraceptive, pregnancy, and STD history including age at first intercourse (coitarche), number of lifetime partners, frequency of sexual intercourse over the past month, contraceptive method used at last intercourse, and contraceptive plans for first or next intercourse. For this study, we used this data to create seven dichotomous outcome variables: (1) Ever had sex (Yes/No); (2) Ever been pregnant (Yes/No); (3) Ever had an STD (Yes/No); (4) Has had multiple lifetime partners (Yes/No); (5) Had frequent sex in the past month (Yes/No); (6) Used any contraception at last intercourse (Yes/No); and (7) Plan to use contraception at next sex (Yes/No). We defined multiple lifetime partners as  $\geq 4$ , the definition used by the Centers for Disease Control and Prevention.<sup>33</sup> We defined frequent sex as  $\geq 7$  times in the past month, since it has been established that the risk of pregnancy increases substantially at two times per week.<sup>34</sup> Because participants used a variety of contraceptive methods at last intercourse and planned to use a variety of methods at next intercourse, we dichotomized contraceptive method use into "any use" vs "no use." We defined use of any contraception at last intercourse or next sex as using a condom, oral contraceptive, Depo-Provera®, transdermal patch, vaginal contraceptive ring, or a vaginal spermicide.

**Religiosity Index (Independent Variable).** We used four items to assess religiosity created for this study:

(1) religious affiliation; (2) frequency of attendance at religious services; (3) the influence of religious beliefs on decisions about having sex; and (4) the influence of religious beliefs on using something to prevent pregnancy. Response options for religious affiliation included: None, Catholic, Presbyterian, Methodist, Lutheran, Episcopalian, Baptist, Jewish, Islam, and Other. When "Other" was selected, the computer provided a text box to enter a specific affiliation. Participants were asked to report how often they attended religious services from the following options: never, once or twice a year, about 6 times a year, once a month, once a week, a few times a week, and daily. Two items asked how much religious beliefs affected decisions about sex and contraception with a Likert scale of four options: not at all, somewhat, quite a bit, and completely. In order to create an overall measure of religiosity, we summed the values from responses to all four of the previous items: affiliation (none = 1, any = 2), frequency of attendance (never = 1 to daily = 7), and two items on the impact of religious beliefs on decisions about sex and contraception (not at all = 1 to completely = 4), resulting in an index with a range of 4 to 17. We then categorized scores into low, medium, and high religiosity groups by tertiles. The religiosity index showed good internal consistency (Cronbach's alpha = 0.65).

### Data Analysis

We first performed a descriptive analysis of the data by computing the number of responses to each categorical variable and calculating the means and standard deviations for the continuous variable (age). We computed these figures in the total sample and among those who had and had not had sexual intercourse. We then used chi-square tests (for categorical variables) and a *t*-test (for age) to determine which covariates were significantly different among those who had had sexual intercourse versus those who had not. Next, we used bivariate and multivariable regression techniques to assess the association between each of the dependent variables (sexual and contraceptive behaviors) and the independent variable (religiosity). We used stepwise backward logistic regression for the multiple regression analyses because each involved a dichotomous outcome. Outcome variables included ever having had sex (Hypothesis 1), ever having been pregnant (Hypothesis 2), ever having had an STD (Hypothesis 3), lifetime sex with 4 or more partners (Hypothesis 4), 7 or more episodes of sex in the past 30 days (Hypothesis 5), having had a plan for contraception at last intercourse (Hypothesis 6), and having a plan for contraception at next intercourse (Hypothesis 7).

Variables that were included in all models initially included age, race, SES, and living arrangement.

Educational level was not included because it replicated the information from the age variable. In all cases, we used  $P < 0.15$  as the criterion for removal of variables from the model. We also ran analyses with all measured covariates to test the robustness of our results. The tests for all effects were considered significant at  $P < 0.05$ .

## Results

The mean age of the 572 participants was 17.4 (SD = 2.2) years. The majority of participants described their race as African-American (59%) with about one third Caucasian (32%). Sixty-eight percent ( $n = 288$ ) had been sexually active, with mean age at first intercourse of 15 (SD = 1.8) years. Among those who had been sexually active, approximately 12% had ever been pregnant and 17% ever had an STD. Also among those who had been sexually active, the mean number of episodes of sex in the past month was 3.8 times (SD = 5.6; range = 0–50) and mean number of lifetime sexual partners was 5.3 partners (SD = 6.9; range = 1–54). Among sexually active participants, contraceptive methods used at last intercourse included: 60% condom used with a steady partner, 36% dual method (condom plus either vaginal spermicide or a hormonal method), 28% oral contraceptive, 27% withdrawal, 19% condom used with a non-steady partner, 18% Depo-Provera®, 10% nothing, 9% transdermal patch, and 3% vaginal spermicide. Among sexually active participants, contraceptive plans for the next intercourse included: 73% condom use with steady partner, 53% dual method use, 39% oral contraceptive, 26% condom use with non-steady partner, 24% withdrawal, 18% Depo-Provera, 14% abstinence, 12% transdermal patch, 6% vaginal spermicide, and 4% nothing.

Religiosity index scores ranged from 4 to 17 with a mean score of 8.6 (SD = 3.2) and a median of 9. As Table 1 indicates, bivariate analyses demonstrate that sexual activity was associated with low religiosity, older age, less maternal education, and living without parents.

Table 2 illustrates the results of the religiosity items by history of sexual intercourse. About one quarter (25.9%) reported having no religion. About 29% reported they were Baptist and 23% reported they were a member of another Christian denomination. Having a religious affiliation was not significantly associated with having had sexual intercourse. Nearly a third said that they attended religious services once a week or more, while 21.9% never attended religious services. Frequency of attendance at religious services was significantly associated with whether these adolescents ever had intercourse ( $P < 0.001$ ). Regarding the influence of

religious beliefs on decisions about having sex, few reported that their religious beliefs affect them completely, while 47.2% reported no influence. Similarly, 12.8% reported that their religious beliefs affected their decisions regarding preventing pregnancy completely, while 55.8% reported no effect. Those who never had intercourse were more likely to report that their religious beliefs affected their decisions regarding sex ( $P < 0.001$ ). Those who never had intercourse were somewhat more likely to report that their religious beliefs affect their decisions about preventing pregnancy, but the trend was not statistically significant ( $P = 0.06$ ).

In our multivariate analysis that controlled for covariates (Table 3), using the low religiosity group for comparison, those in the high religiosity group were less likely to have had sexual intercourse (OR = 0.23, 95% CI = 0.14, 0.39), supporting Hypothesis 1. Among sexually active participants, compared to the low religiosity group, those in the high religiosity group were less likely to have ever been pregnant (OR = 0.46, 95% CI = 0.22, 0.97) or to have ever had an STD (OR = 0.42, 95% CI = 0.22, 0.81), supporting Hypotheses 2 and 3. Also compared to the low religiosity group, those with high religiosity were less likely to have had  $\geq 4$  lifetime partners (OR = 0.38, 95% CI = 0.21, 0.68), supporting Hypothesis 4. However, compared with those in the low religiosity group, those in the medium and high religiosity groups were no more likely to have had intercourse  $\geq 7$  times in the past month, to have used contraception at last sex, or to plan on using contraception at next sex (Table 3). Thus, Hypotheses 5, 6, and 7 were not supported.

## Discussion

This study of 572 female adolescents finds that those with higher religiosity were less likely to have ever had sex. Furthermore, among sexually active young women in our sample, religiosity appeared to be a protective factor rather than a risk factor with regard to sexual behaviors, because sexually active young women with high religiosity were less likely to have fewer reported pregnancies, fewer STDs, and fewer lifetime partners.

Our results are consistent with the majority of prior research in this area that concludes that higher religiosity is associated with delay of coitarche.<sup>2–4,8–14</sup> These results were also consistent with research associating religiosity with a lower number of sexual partners.<sup>11,12,15–17</sup> However, our results were not consistent with studies that have shown religiosity to be associated with (1) decreased frequency of sexual activity; and (2) less frequent use of condoms and/or hormonal contraception.<sup>8,20,21</sup> In fact, although they were not statistically significant, odds

**Table 1.** Description of sample by sexual history<sup>a</sup>

	Total Sample (N = 572) %	Never Had Intercourse (N = 184) %	Has Had Intercourse (N = 388) %	P
<b>Religiosity Level (Scores)</b>				
Low (4–7)	39.3	27.7	44.8	< .001
Medium (8–11)	40.4	40.2	40.5	
High (12–17)	20.3	32.1	14.7	
<b>Covariates</b>				
Age, mean in years (SD)	17.4 (2.2)	16.2 (2.1)	17.9 (2.0)	< .001
Race				
Caucasian	32.2	33.7	31.4	.66
African-American	59.1	56.5	60.3	
Other	8.7	9.8	8.3	
Educational Level				
High school	67.3	79.2	61.6	< .001
College	32.7	20.8	38.4	
SES <sup>b</sup>				
1	13.3	10.7	14.5	.42
2	27.9	27.2	28.1	
3	58.9	62.1	57.4	
Living Arrangement				
Lives With Parent(s)	66.6	75.5	62.4	.002
Other Living Arrangement	33.4	24.5	37.6	

<sup>a</sup>Percentages do not always add to 100 due to rounding. Values do not always sum to sample size due to missing data.

<sup>b</sup>SES (socioeconomic status) was approximated by participants' reported level of maternal education. 1 = mother did not graduate high school; 2 = mother graduated high school but not college; 3 = mother graduated college.

ratios demonstrated that young women with higher levels of religiosity were more likely to report using contraception at last intercourse and more likely to plan to use contraception in the future. Confidence intervals were extremely large, however, indicating that there was substantial heterogeneity in these groups in terms of their decisions and planning to use contraceptives. Effects of religiosity were more consistent for numbers of partners and sexual encounters.

An important implication of these findings is that it may be valuable for clinicians to ask about religious attendance as well as the influence of religious beliefs on sexual behaviors. These are commonly held beliefs, as 74.1% claim to have a religion, 78.1% attend religious services at least once a year, and over half state that their religious beliefs impact their decisions to have sex at least "somewhat." Assessing questions similar to those used in this study in the clinical setting may be an efficient way of collecting useful information in assessing overall risk for sexual risk-taking behaviors. This information may be valuable to busy clinicians looking to ask the most useful and salient questions and to researchers continuing to hone relevant items for religiosity indices.

Given that most organized religions advocate abstinence before marriage, it is not surprising to find that those female adolescents with higher levels of religiosity were less likely to be sexually active. However, it remains to be determined the precise mechanism by

which religion may protect against sexual risk-taking behaviors. Are religious youths internalizing the messages of religious leaders? Or are adolescents who are more religiously oriented simply more likely to have organized, supervised activities in which to engage that protect against sexual risk-taking behaviors? Our results would suggest the former, since the young women who directly stated that their religious beliefs affected their sexual behaviors were indeed less likely to have had intercourse. However, further research may help elucidate this question.

Further research may also explore the role of religious teachings about methods of contraception other than abstinence and the venues in which such teachings take place (church, temple, mosque, school, hospital, community center, etc.). Qualitative studies in a variety of locations and among adolescents of varying religious affiliations may provide richer insight into how religious beliefs affect behaviors, as well as how to incorporate religious beliefs in helping adolescents to make safer decisions. Studies could also help development of a more accurate measurement scale and more effective conversational techniques for health care providers.

One explanation for the fact that contraceptive behaviors and plans did not differ by level of religiosity is that organized religions are unlikely to emphasize the importance of contraception. However, it is important to note that the odds ratios for these

**Table 2.** Religious affiliations, attendance, and beliefs by history of sexual intercourse

	Total Sample (N = 572) %	Never Had Intercourse (N = 184) %	Has Had Intercourse (N = 388) %	P
<b>Religious Affiliation</b>				
None (1)	25.9	23.9	26.8	0.46
Any (2)	74.1	76.1	73.2	
<b>Specific Religious Affiliations</b>				
None	25.9	23.9	26.8	0.31
Catholic	16.4	13.0	18.0	
Baptist	29.0	27.2	21.6	
Other Christian <sup>a</sup>	23.4	28.9	29.3	
Other Religion <sup>b</sup>	5.2	4.6	6.5	
<b>Frequency of Attendance at Religious Services</b>				
Never (1)	21.9	17.9	23.7	<0.001
Once or twice a year (2)	19.4	12.0	22.9	
Six times a year (3)	12.2	7.6	14.4	
Once a month (4)	14.2	16.3	13.1	
Once a week (5)	23.4	34.8	18.0	
A few times a week (6)	6.5	8.2	5.7	
Daily (7)	2.4	3.3	2.1	
<b>How much do your religious beliefs affect your decisions about having sex?</b>				
Not at all (1)	47.2	35.9	52.6	<0.001
Somewhat (2)	34.1	31.5	35.3	
Quite a bit (3)	14.0	24.5	9.0	
Completely (4)	4.7	8.2	3.1	
<b>How much do your religious beliefs affect your decisions about using something to prevent pregnancy?</b>				
Not at all (1)	55.8	48.9	59.0	0.06
Somewhat (2)	19.4	21.2	18.6	
Quite a bit (3)	12.1	12.5	11.9	
Completely (4)	12.8	17.4	10.6	

<sup>a</sup>Includes: Christian (n = 51), Presbyterian (n = 21), Methodist (n = 11), Lutheran (n = 13), Non-denominational (n = 8), Episcopalian (n = 6), Jehovah's Witness (n = 5), Pentecostal (n = 4), Apostolic (n = 3), Evangelical Free (n = 2), Seventh Day Adventist (n = 2), Assembly of God (n = 1), Brethren (n = 1), Evangelical (n = 1), Full Gospel (n = 1), Jewish (n = 1; this participant had selected religion as Jewish but also wrote in Christian), Latter Day Saints (n = 1), None (n = 1), Protestant (n = 1).

<sup>b</sup>Includes: Buddhism (n = 1), Native American (n = 1), Rastafarianism (n = 1), Wicca (n = 1), Wiccan/Pagan (n = 1).

analyses were high (although nonsignificant), and results could be explained by heterogeneity or lack of power within our sample. Thus, these issues should continue to be explored in larger and more diverse samples.

Our study had several limitations. This was a sample of young women who enrolled in a study comparing two types of counseling for preventing pregnancy and STDs. Even though recruitment advertisements stated that participants did not have to be sexually active to participate and nearly a third of the sample was sexually inexperienced, we may have selection bias in that we over-enrolled young women who wanted to learn more about how to prevent pregnancy and STDs. Moreover, there was over-representation of African-American and Baptist participants in our sample. Also, we did not distinguish religiosity from spirituality (or "internal" religiosity), which has been shown to be differentially related to health related outcomes.<sup>35</sup> Future investigators may wish to more

fully capture internal religiosity as a construct. Finally, our measure of religiosity is a new measure. This is a limitation in that we do not have the benefit of prior validation. However, we opted in favor of developing a new measure and beginning exploration of its psychometric properties because existing scales have not included direct assessment of young peoples' perspectives on the influence of religiosity on sexual behaviors.

In conclusion, the results of this study suggest that religiosity appears to be an independent predictor of multiple sexual behaviors directly linked to important clinical outcomes such as pregnancy and STD risk. Considering the prevalence of religious beliefs and the relationship between religiosity and sexual behaviors, clinicians may wish to integrate assessment of religiosity into sexual history taking. Future research may assist us in further elucidating the interrelationships between religiosity and sexual and contraceptive behaviors.

**Table 3.** Sexual and contraceptive behaviors by religiosity

	Level of Religiosity	OR Unadjusted (95% CI)	OR Adjusted <sup>a</sup> (95% CI)
Ever had sex (n = 572)	Low	1	1
	Medium	0.62 (0.41–0.94) <sup>c</sup>	0.50 (0.31–0.82) <sup>c</sup>
	High	0.28 (0.18–0.46) <sup>c</sup>	0.19 (0.11–0.34) <sup>c</sup>
Ever been pregnant (n = 388)	Low	1	1
	Medium	0.54 (0.30–0.98) <sup>c</sup>	0.51 (0.27–0.98) <sup>c</sup>
	High	0.79 (0.36–1.71)	0.62 (0.27–1.40)
Ever had an STD (n = 388)	Low	1	1
	Medium	0.62 (0.37–1.03)	0.56 (0.32–0.99) <sup>c</sup>
	High	0.79 (0.40–1.56)	0.52 (0.25–1.10)
Had ≥ 4 lifetime partners (n = 388)	Low	1	1
	Medium	0.70 (0.45–1.09)	0.73 (0.46–1.17)
	High	0.47 (0.25–0.90) <sup>c</sup>	0.45 (0.23–0.90) <sup>c</sup>
Had sex ≥ 7 times in past month (n = 388)	Low	1	1
	Medium	0.59 (0.34–1.02)	0.69 (0.39–1.24)
	High	0.17 (0.05–0.57) <sup>c</sup>	0.23 (0.07–0.81) <sup>c</sup>
Used any contraception at last sex <sup>b</sup> (n = 388)	Low	1	1
	Medium	1.57 (0.83–3.00)	1.56 (0.80–3.02)
	High	1.33 (0.61–2.86)	1.46 (0.65–3.26)
Plan to any contraception at next sex <sup>b</sup> (n = 388)	Low	1	1
	Medium	3.20 (1.02–10.07)	2.77 (0.86–8.99)
	High	2.12 (0.59–7.67)	1.83 (0.49–6.83)

<sup>a</sup>Final potential covariates determined by stepwise backward regression ( $P < 0.15$ ) and included age, race, mother's educational level, mother's educational level, and living arrangement.

<sup>b</sup>Any contraception included condom, oral contraceptives, Depo-Provera, Patch, Ring, or Spermicide.

<sup>c</sup> $P < 0.05$ .

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