

# Religious Involvement and Transitions into Adolescent Sexual Activities\*

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*Using two waves of data from the National Survey of Youth and Religion (2002, 2005), a national probability sample of 3,290 adolescents ages 13 to 17, we test whether religious involvement (church attendance, religious salience, private religiosity, and family religiosity) is associated with delayed transitions into sexual activities (sexual touching, oral sex, and sexual intercourse). We also consider whether the rate of these transitions varies according to important social characteristics (age, gender, and race/ethnicity). Our results suggest that multiple indicators of religious involvement (especially religious salience) are associated with delayed transitions into selected sexual activities. We also find that the rate of transition into sexual activities associated with private and family religiosity varies according to key social characteristics.*

Studies show that religious involvement is associated with delayed sexual activity (Cvetkovich and Grote 1980; Thornton and Camburn 1989; Beck, et al. 1991; Brewster, et al. 1998; Lammers, et al. 2000; Hardy and Raffaelli 2003; Meier 2003; Nonnemaker, et al. 2003; Jones, et al. 2005; Regnerus 2007) and fewer sexual partners (Thornton and Camburn 1989; Miller and Gur 2002) in adolescence. Although these patterns suggest that religion plays an important (and favorable) role in shaping sexual activities in adolescence, this body of research has progressed slowly in terms of theoretical and

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methodological development (Whitehead, et al. 2001; Regnerus 2003; Smith 2003).

Existing research on religious involvement and sexual activity in adolescence is limited in several respects. Although social scientists have long recognized that religiosity is a multidimensional phenomenon (Stark and Glock 1968; Levin, et al. 1995), several studies of religion and adolescent sexual behavior examine only a single indicator of religious involvement, namely attendance at religious services. When studies include multiple measures of religious involvement, these indicators are frequently combined into indices (Whitehead, et al. 2001; Rostosky, et al. 2004). This strategy is suboptimal for two reasons. First, various indicators of religious involvement may be differentially associated with adolescent sexual behaviors. Second, the strategy of combining measures of religious involvement into indices may maximize reliability, but it also conceals potentially meaningful associations (and processes) among these indicators.

Research on religion and adolescent sexual activity is also typically limited to the study of sexual intercourse. Direct linkages with teenage pregnancy and sexually transmitted diseases highlight sexual intercourse as an important area of study; however, other types of sexual activity (e.g., sexual touching and oral sexual behavior) also pose health risks and act as precursors to intercourse (Remez 2000). Although evidence suggests that oral sex does not substantially increase the risk of acquiring HIV, this activity has been shown to transmit a range of other sexually transmitted infections, including chlamydia, gonorrhea, and herpes (Edwards and Carne 1998).

Finally, while most studies tend to emphasize the main effects of religious involvement on adolescent sexual activity, little is known about potential interaction patterns. To this point, it is unclear whether the association between religious involvement and adolescent sexual activity (particularly nonintercourse behaviors) varies according to important social characteristics (e.g., age, gender, and race/ethnicity). If we are to advance our understanding of the association between religious involvement and sexual activity in adolescence, we must begin to specify for whom this relationship is more or less prominent. Indeed, the identification of significant moderators would facilitate the theoretical development of research on religious involvement and sexual activity in adolescence.

With these limitations in mind, we employ two waves of data from the National Survey of Youth and Religion (NSYR 2002, 2005), a large national probability sample of adolescents, to test whether four indicators of religious involvement (church attendance, religious salience, private religiosity, and family religiosity) delay transitions into three sexual behaviors (sexual touching, oral sex, and sexual intercourse). We also consider whether the rate of these transitions varies according to important social characteristics (age, gender, and race/ethnicity).

## THEORETICAL BACKGROUND

*Religious Involvement, Religious Affiliation, and Adolescent Sexual Activity*

Studies consistently show that religious involvement, as measured by church attendance (Thornton and Camburn 1989; Beck, et al. 1991; Brewster, et al. 1998; Lammers, et al. 2000; Hardy and Raffaelli 2003; Jones, et al. 2005; Regnerus 2007), general religiosity (Hardy and Raffaelli 2003; Meier 2003; Nonnemaker, et al. 2003), and, to a lesser extent, religious salience (Cvetkovich and Grote 1980; Regnerus 2007) and family religiosity (Manlove, et al. 2006a, 2006b), is associated with delayed sexual intercourse in adolescence. Although several studies have considered the association between religious involvement and sexual intercourse, our review of the literature revealed little or no research on other sexual activities. There is some evidence to suggest that religious attendance is associated with delayed oral sexual behavior (Regnerus 2007). To the best of our knowledge, there is no prior research on the association between religious involvement and sexual touching.

Why might religious involvement be associated with delayed sexual activity in adolescence? Church attendance and family religiosity might reduce or delay sexual activity by exposing adolescents to messages and norms concerning sexual morality and by embedding adolescents within sexually conservative contexts, where parental monitoring is high (Smith 2003; Smith and Lundquist Denton 2003) and informal social sanctions are regularly enforced against persons suspected of non-marital sexual activity (Thornton and Camburn 1989; Adamczyk and Felson 2006). While frequency of church attendance indicates exposure to moral messages, religious salience may indicate the degree to which these messages have been internalized (Rohrbaugh and Jessor 1975). Like church attendance, private religiosity indicates exposure to religious doctrines and reinforces religious teachings in the areas of obedience, self-control, and sexual morality (Smith 2003).

Although religious involvement is consistently associated with reduced or delayed sexual debut in adolescence, religious tradition is not. Some studies show that adolescents who are affiliated with conservative religious groups (e.g., Mormons, evangelicals, fundamentalists) are more likely to delay sexual intercourse than their mainline or unaffiliated peers (Beck, et al. 1991; Cooksey, et al. 1996; Brewster, et al. 1998). Other research suggests that adolescents who identify with evangelical Protestant denominations are actually less likely to delay sexual intercourse than are mainline and Jewish adolescents (Regnerus 2007). In our review of the literature, we could find only one study of the association between religious affiliation and oral sexual behavior. This study suggests that adolescents who identify with evangelical Protestant denominations are more likely to engage in oral sex than are black Protestants, Catholics, and Mormons (Regnerus 2007). To the best of our knowledge, the relationship between religious affiliation and sexual touching in adolescence remains unexplored.

Adolescents who identify with conservative Protestant denominations are commonly exposed to messages that emphasize sexual morality and abstinence. Interestingly, these messages often fail to translate into reduced or delayed sexual activity in adolescence. One explanation for this anomaly is rooted in the emphasis that conservative Protestant churches place on family-centered theologies, which value traditional family life over career goals and financial aspirations (Abbott, et al. 1990; Becker 1991; Pearce 2002). Evidence also suggests that some conservative Protestant denominations are hostile toward secular educational institutions, as well as educational beliefs and aspirations (Darnell and Sherkat 1997; Sherkat and Darnell 1999). As a result, adolescents who adhere to these groups may be encouraged to value personal relationships over other measures of “worldly” accomplishment. Family formation may be pursued as a goal in lieu of educational attainment and career success. It is conceivable, then, that conservative Protestant churches inadvertently create an environment that is conducive to early relationship and family formation and, as a consequence, increased adolescent sexual activity.

### ***Variations in the Association between Religious Involvement and Adolescent Sexual Activity***

Is the association between religious involvement and delayed sexual activity the same for all adolescents? Prior research suggests that this association might vary according to important social characteristics like age, gender, and race/ethnicity. Drawing on this research, we expect that this association will be stronger for older adolescents, females, and non-Hispanic Whites.

There are two main reasons to expect that the association between religious involvement and sexual activity will be stronger for older adolescents. To the extent that age serves as a proxy for frequency of exposure to religious institutions and training (i.e., religious socialization), one would expect the function of a given level of religious activity to be more pronounced among older adolescents. To the extent that parents allow older adolescents more freedom to either engage or refrain from engaging in religious activities (e.g., frequency of church attendance), a given measure of religious involvement may also represent a more precise indicator of religious identity and religious commitment for older adolescents.

Studies consistently show that religious involvement is more strongly associated with the sexual behaviors of females (Bearman and Bruckner 2001; Rostosky, et al. 2004; Regnerus 2007). Although boys and girls may be encouraged to refrain from sexual activities, virginity status may be especially important for girls. For example, the sexual status of females is often noted within Biblical texts, yet is rarely mentioned for male figures (e.g., Lev. 21:7; Luke 1:34; John 4:17–19).

Finally, there is evidence to suggest that religious involvement is only sporadically associated with reduced or delayed sexual activity among black adolescents (Billy, et al. 1994; Bearman and Bruckner 2001; McCree, et al. 2003). Scholars speculate that black churches may be more forgiving of sexual transgressions than

are predominately white churches (Hertel and Hughes 1987; Lincoln and Mamiya 1990). There is even some evidence to suggest that black churches are more likely to avoid discussing issues of sexuality altogether (Regnerus 2006). While most churches discourage sexual relations outside of marriage, white churches may be more judgmental of nonmarital sexual relations. For example, issues of “sexual purity” are often emphasized within some predominately white religious affiliations, including Southern Baptist and other conservative Protestant churches (Gay, et al. 1996; Hoffmann and Miller 1997). Thus, religious involvement may be more strongly associated with the sexual behavior of non-Hispanic white adolescents than their black counterparts. To this point, it is unclear in the literature how this association might vary between non-Hispanic white and Hispanic adolescents.

## DATA AND METHODS

The NSYR is a nationally representative telephone survey of 3,290 U.S. English-and-Spanish-speaking teenagers between the ages of 13 and 17 and their parents. Wave 1 of the NSYR was conducted from July 2002 to April 2003 by researchers at the University of North Carolina, using a random-digit-dial method to generate telephone numbers of all household telephones in the 50 United States. Eligible households included at least one teenager between the ages of 13 and 17 living in the household for at least six months of the year. In order to randomize responses within households, interviewers asked to conduct the survey with the teenager in the household who had the most recent birthday. Ninety-six percent of parent-complete households also achieved teen-completes. Diagnostic analyses comparing NSYR data with U.S. census data on comparable households and with comparable adolescent surveys—such as Monitoring the Future and the National Longitudinal Study of Adolescent Health—confirm that the NSYR provides a nationally representative sample without identifiable sampling and nonresponse biases of U.S. teenagers ages 13 to 17 and their parents living in households (Smith and Lundquist Denton 2003). Wave 2 of the telephone survey was conducted from June 2005 to November 2005. Approximately 78 percent of the original respondents were reinterviewed. All analyses are limited to those nonmarried respondents present at both waves.<sup>1</sup>

### *Dependent Variables: Sexual Behavior*

Our measure of *sexual touching* asked respondents whether they had ever willingly touched another person’s private areas or had willingly been touched

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<sup>1</sup>Attrition analysis (not shown) reveal that African Americans, Hispanics, older adolescents, those in nonbiologically intact families, and those with less educated mothers are more likely to be missing at Wave 2 than non-Hispanic whites, younger respondents, those in biological-intact families and those with more educated mothers.

under their clothes by another person in his or her private areas (1 = experienced sexual touching). Our measure of *oral sex* asked respondents whether or not they had ever engaged in oral sex (1 = had oral sex). Our measure of *sexual intercourse* asked respondents whether or not they had ever had sexual intercourse (1 = had sexual intercourse).

### **Independent Variables: Religious Involvement**

Following a modified version of the coding scheme developed by Roof and McKinney (1987), *religious affiliation* is measured with six dummy variables. These variables capture conservative Protestants (e.g., Southern Baptists, Pentecostals), mainline Protestants (e.g., Methodists, Presbyterians, Episcopalians), Catholics, other Christian affiliations (e.g., those who identify as “just Christian”, Friends, Quakers), other religious faiths (e.g., Buddhists, Jews), and nonaffiliates.

In addition to religious affiliation, several other measures of religion were included to capture various dimensions of religious behavior. Frequency of religious service attendance is measured by asking respondents how often they attend services at their particular religious congregation. Response categories for *church attendance* range from (0) “never attend” to (6) “more than once a week.”

*Religious salience* is measured using a mean index of two standardized items ( $r = 0.79$ ). Respondents were asked, “How important or unimportant is religious faith in shaping (a) “how you live your daily life?” and (b) “your major life decisions?” Response categories for both items ranged from (1) “not important at all” to (5) “extremely important.”

*Private religiosity* is measured using a mean index of two standardized items ( $r = 0.52$ ). Respondents were asked, “How often, if ever, do you pray by yourself alone?” Respondents were also asked how often they read alone from the primary scripture of their religious affiliation (in most cases the Bible). Response categories for these items ranged from (1) “never” to (7) “many times a day.”

*Family religiosity* is also measured using a mean index of two standardized items ( $r = 0.55$ ). Youths were asked, “Does your family regularly pray to give thanks before or after mealtimes, or not?” Respondents were also asked, “How often, if ever, does your family talk about God, the Scriptures, prayer or other religious or spiritual things together?” Response categories for these items ranged from (1) “never” to (6) “everyday.”

### **Sociodemographic Controls**

Numerous sociodemographic characteristics have been identified as significant correlates of adolescent sexual behavior. Previous research suggests being African American, male, older, southern, and in a family of lower socioeconomic status is associated with earlier sexual debut (Furstenberg, et al. 1987; Upchurch, et al. 1998; Browning, et al. 2004; Cubbin, et al. 2005).



Conversely, being in a biologically-intact family is associated with reduced odds of adolescent sexual activity (Browning, et al. 2004; Cubbin, et al. 2005). Therefore all subsequent analyses include controls for mother's level of education (less than a high school education is the reference category), mother's employment status (1 = *mother is employed full-time*, 0 = other employment status), *parent's income* (an 11-point scale ranging from less than \$10,000 to more than \$100,000), *biologically intact family* (1 = biological intact, 0 = other family structure), child's *age* (in years), child's *gender* (*male* = 1), child's *race/ethnicity* (includes dummy variables for *black* and *Hispanic*, non-Hispanic white is the reference category), and southern residence (1 = *southern residence*, 0 = other region).<sup>2</sup>

### **Analytic Procedures**

The analytic strategy for this study follows three steps. First, table 1 provides descriptive statistics for all variables included in the study. Second, tables 2 to 4 employ logistic regression to formally evaluate the net association between predictor variables at Wave 1 with the odds of sexual touching, oral sexual behavior, and sexual intercourse at Wave 2. Those respondents who reported participating in each of these sexual activities at Wave 1 were excluded from the analyses for that particular outcome. In tables 2 to 4, for each outcome under study, sequential regression models were estimated in which sociodemographic controls (mother's level of education, parental income, family structure, age, gender, race, and southern residence) were included in Model 1, followed by religious affiliation in Model 2. Models 3 to 6 add each of the measures of religious involvement independently. Finally, Model 7 includes all of the measures of religious involvement simultaneously.<sup>3</sup> Table 5 displays partial odds ratios for significant results from interaction analyses evaluating whether the association between religious involvement and sexual activity varies as a function of age, gender, and race/ethnicity.

## **RESULTS**

### **Sample Characteristics**

Table 1 presents descriptive statistics for selected study variables. Approximately 72 percent of our sample reported engaging in sexual touching,

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<sup>2</sup>Because we are interested in exploring variations in the association between religious involvement and adolescent sexual activity by race/ethnicity, we have limited our analyses to African Americans, Hispanics, and non-Hispanic whites. The NSYR does not include large enough numbers of any other racial/ethnic groups to provide reliable estimates.

<sup>3</sup>Among our religion measures, religious salience and private religiosity are the most highly correlated (0.64). Intercorrelations between our remaining measures of religious involvement range from 0.47 to 0.54.

TABLE 1  
Descriptive Statistics for NSYR Variables (n = 2,229)

	Mean	SD	Range
<i>Sexual behavior variables</i>			
Sexual touching	0.72		0–1
Oral sex	0.53		0–1
Sexual intercourse	0.54		0–1
<i>Religious affiliation</i>			
Conservative protestant affiliation	0.31		0–1
Mainline protestant affiliation	0.12		0–1
Catholic affiliation	0.19		0–1
Other Christian affiliation	0.13		
Other religious affiliation	0.08		0–1
No religious affiliation	0.17		0–1
<i>Religious involvement</i>			
Church attendance	3.22	2.18	0–6
Scale of religious salience	0.00	0.93	–2.13–1.33
Private religiosity	0.00	0.87	–1.65–1.93
Family religiosity	0.00	0.88	–1.33–1.24
<i>Sociodemographic controls</i>			
Mother has less than high school education	0.06		0–1
Mother has high school education	0.23		0–1
Mother has some college	0.38		0–1
Mother has college degree	0.19		0–1
Mother has graduate degree	0.14		0–1
Mother works full-time	0.55		0–1
Parent’s income	6.26	2.84	1–11
Biologically intact family	0.59		0–1
Adolescents’ age	15.48	1.43	12.91–18.49
Adolescent is male	0.50		0–1
Adolescent is white	0.74		0–1
Adolescent is African American	0.16		0–1
Adolescent is Hispanic	0.10		0–1
Adolescent is a southern resident	0.41		0–1

Note: All analysis is limited to white, African American, and Hispanic respondents. Measures of sexual activity are based on reports from Wave 2, while all other measures are reported at Wave 1. Analysis is limited to those respondents present at both waves.

while 53 percent reported participating in oral sexual behavior. Roughly 54 percent of respondents reported having had sexual intercourse by Wave 2. Between Waves 1 and 2, approximately 39 percent of respondents transitioned into sexual touching 31 percent transitioned into oral sex, and nearly 36 percent transitioned into sexual intercourse. Roughly 31 percent of respondents are members of conservative Protestant groups, while 12 percent affiliate



TABLE 2  
Odds Ratios for Logistic Regression of Sexual Touching on Religious Involvement (n = 1,459)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Sociodemographics/controls</i>							
Mother has HS education	1.376	1.396	1.411	1.425	1.424	2.399	1.432
Mother has some college	1.049	1.057	1.087	1.091	1.090	1.095	1.113
Mother has college degree	0.890	0.873	0.900	0.905	0.871	0.916	0.907
Mother has graduate degree	0.969	0.942	1.006	0.966	0.941	0.972	0.990
Parent's income	1.045	1.045	1.045	1.034	1.035	1.039	1.033
Mother works full-time	1.301*	1.286*	1.271	1.277*	1.242	1.247	1.244
Biologically intact family	0.679**	0.664***	0.693**	0.684**	0.678**	0.683**	0.701**
Age	1.207***	1.207***	1.216***	1.236***	1.228***	1.208***	1.239***
Male	0.957	0.974	0.931	0.889	0.886	0.987	0.863
African American <sup>a</sup>	1.425*	1.516*	1.447*	1.626**	1.629**	1.768***	1.631**
Hispanic	0.989	0.973	0.976	1.018	1.050	1.007	1.047
Southern resident	0.908	0.913	0.918	1.007	0.953	0.929	0.988
<i>Religious affiliation</i>							
Mainline Protestant affiliation <sup>b</sup>		1.255	1.174	1.150	1.072	1.186	1.052
Catholic affiliation		1.236	1.081	1.017	0.900	1.060	0.852
Other Christian affiliation		0.724	0.662*	0.639*	0.617*	0.693*	0.590**
Other religious affiliation		0.960	0.842	0.867	0.796	0.885	0.758
No religious affiliation		1.152	0.555*	0.712	0.703	0.848	0.450**
<i>Religious involvement</i>							
Church attendance			0.848***				0.920*
Religious salience				0.663***			0.812*
Private religiosity					0.647***		0.779**
Family religiosity						0.734***	0.955
Constant	0.445	0.405	0.610	0.574	0.664	0.467	0.753
Likelihood ratio $\chi^2$	55.638	65.528	87.662***	98.538***	101.256***	84.605***	116.344***
Df	12	17	18	18	18	18	21

<sup>a</sup>Reference category is non-Hispanic white.

<sup>b</sup>Reference category is conservative Protestant affiliation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

TABLE 3  
Odds Ratios for Logistic Regression of Oral Sex on Religious Involvement (n = 1,737)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Sociodemographics/controls</i>							
Mother has HS education	1.066	1.055	1.050	1.073	1.050	1.062	1.063
Mother has some college	0.696	0.696	0.711	0.720	0.708	0.725	0.731
Mother has college degree	0.683	0.676	0.690	0.700	0.662	0.711	0.703
Mother has graduate degree	0.603	0.595	0.619	0.594	0.583	0.617	0.608
Parent's income	1.061**	1.061**	1.060**	1.050*	1.053*	1.053*	1.048*
Mother works full-time	1.315**	1.297*	1.273*	1.302*	1.264*	1.250*	1.260
Biologically intact family	0.672***	0.680***	0.703**	0.707**	0.693**	0.703**	0.719**
Age	1.338***	1.336***	1.342***	1.353***	1.346***	1.335***	1.351***
Male	1.048	1.046	1.012	0.954	0.964	1.054	0.951
African American <sup>a</sup>	0.578***	0.609***	0.584***	0.653**	0.640**	0.708*	0.678*
Hispanic	0.569**	0.535**	0.534**	0.560**	0.554**	0.548**	0.563**
Southern resident	0.946	0.991	1.006	1.091	1.025	1.016	1.080
<i>Religious affiliation</i>							
Mainline Protestant affiliation <sup>b</sup>		1.266	1.207	1.165	1.119	1.186	1.101
Catholic affiliation		1.307	1.185	1.095	1.035	1.136	0.981
Other Christian affiliation		0.923	0.948	0.919	0.905	0.984	0.872
Other religious affiliation		1.029	0.815	0.840	0.780	0.841	0.746
No religious affiliation		1.341	0.747	0.835	0.898	0.977	0.610*
<i>Religious involvement</i>							
Church attendance			0.872***				0.948
Religious salience				0.673***			0.790**
Private religiosity					0.698***		0.873
Family religiosity						0.721***	0.876
Constant	0.143	0.003	0.161	0.116	0.198	0.047	0.225
Likelihood ratio $\chi^2$	109.495	116.496	134.497***	152.683***	144.751***	141.229***	165.392***
Df	12	17	18	18	18	18	21

<sup>a</sup>Reference category is non-Hispanic white.

<sup>b</sup>Reference category is conservative Protestant affiliation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

TABLE 4  
Odds Ratios for Logistic Regression of Sexual Intercourse on Religious Involvement (n = 1,792)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Sociodemographics/controls</i>							
Mother has HS education	0.908	0.892	0.900	0.921	0.924	0.909	0.928
Mother has some college	0.584*	0.583*	0.600*	0.607	0.607*	0.612*	0.622
Mother has college degree	0.376***	0.371***	0.381***	0.383**	0.361***	0.390***	0.388***
Mother has graduate degree	0.308***	0.301***	0.312***	0.295***	0.299***	0.314***	0.305***
Parent's income	1.044*	1.045*	1.043	1.033	1.037	1.037	1.031
Mother works full-time	1.359**	1.346**	1.321**	1.341**	1.310*	1.312*	1.312*
Biologically intact family	0.599***	0.598***	0.625***	0.624***	0.612***	0.623***	0.640***
Age	1.460***	1.455***	1.463***	1.483***	1.466***	1.449***	1.480***
Male	0.914	0.911	0.874	0.823	0.842	0.918	0.817
African American <sup>a</sup>	1.345*	1.419*	1.370*	1.591**	1.523**	1.697***	1.616**
Hispanic	0.730	0.715	0.718	0.771	0.757	0.745	0.776
Southern resident	0.991	1.022	1.044	1.152	1.064	1.046	1.142
<i>Religious affiliation</i>							
Mainline Protestant affiliation <sup>b</sup>		1.203	1.143	1.078	1.056	1.122	1.033
Catholic affiliation		1.215	1.094	1.000	0.966	1.049	0.912
Other Christian affiliation		0.806	0.748	0.702	0.707	0.765	0.672*
Other religious affiliation		0.822	0.728	0.737	0.705	0.745	0.663
No religious affiliation		1.456*	0.728	0.853	0.989	1.054	0.587*
<i>Religious involvement</i>							
Church attendance			0.848***				0.920*
Religious salience				0.629***			0.727***
Private religiosity					0.696***		0.908
Family religiosity						0.718***	0.913
Constant	0.589	0.506	0.673	0.629	0.662	0.526	0.722
Likelihood ratio $\chi^2$	182.979	197.145*	224.225***	247.038***	226.238***	222.373***	259.432***
Df	12	17	18	18	18	18	21

<sup>a</sup>Reference category is non-Hispanic white.

<sup>b</sup>Reference category is conservative Protestant affiliation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

TABLE 5  
 Partial Odds Ratios for the Transition into Sexual Touching, Oral Sex and Sexual Intercourse as a Function of Gender, Age, and Race/  
 Ethnicity

Dependent Variable	Equation	Partial slope	Odds ratio	(Odds ratio - 1 × 100)
Sexual touching	-0.434*** (Family religiosity) + 0.268* (Male = 1)	-0.166	0.847	-15.3%
	-0.434*** (Family religiosity) + 0.268* (Male = 0)	-0.434	0.648	-35.2%
Sexual touching	-0.503*** (Private religiosity) - 0.137** (Age = 13)	-2.284	0.100	-90.0%
	-0.503*** (Private religiosity) - 0.137** (Age = 15)	-2.558	0.080	-92.0%
	-0.503*** (Private religiosity) - 0.137** (Age = 17)	-2.832	0.059	-94.1%
Oral sex	-0.507*** (Family religiosity) + 0.372* (Male = 1)	-0.135	0.874	-12.63%
	-0.507*** (Family religiosity) + 0.372* (Male = 0)	-0.507	0.602	-39.77%
Oral sex	-0.388*** (Private religiosity) - 0.098* (Age = 13)	-1.662	0.190	-81.02%
	-0.388*** (Private religiosity) - 0.098* (Age = 15)	-1.858	0.156	-84.40%
	-0.388*** (Private religiosity) - 0.098* (Age = 17)	-2.054	0.128	-87.18%
Sexual intercourse	-0.387*** (Family religiosity) + 0.408* (Hispanic = 1)	0.021	1.021	2.78%
	-0.387*** (Family religiosity) + 0.408* (Hispanic = 0)	-0.387	0.679	-32.09%
Sexual intercourse	-0.396*** (Private religiosity) - 0.176*** (Age = 13)	-2.684	0.068	-93.17%
	-0.396*** (Private religiosity) - 0.176*** (Age = 15)	-3.036	0.048	-95.20%
	-0.396*** (Private religiosity) - 0.176*** (Age = 17)	-3.388	0.034	-96.60%

*Note:* Interactive models control for all sociodemographic variables as well as religious affiliation. All components of interaction terms are zero-centered, as recommended by Aiken and West (1991). Equation estimates are the natural log (LN) of the odds ratios for religiosity (family, private) and religiosity × sociodemographic characteristic (gender, age, and race/ethnicity).

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001

with mainline Protestant denominations. The remainder of the sample consists of Catholics (19%), other Christian affiliations (13%), other religious faiths (8%), and nonaffiliates (17%).

Table 1 indicates that NSYR respondents are overwhelmingly non-Hispanic white (74%), with significant numbers of African Americans (16%) and Latinos (10%). The average respondent is approximately 15 years old, lives outside of the south, resides in a biologically intact family (59%), and has a mother who has a few years of postsecondary education and who is employed full-time (55%). NSYR respondents also tend to reside in households averaging between \$50,000 and \$60,000 in annual income. Finally, the sample is composed of roughly equal numbers of male and female adolescents.

### Main Effects

Table 2 displays the results for sexual touching. Although reduced models suggest that religious affiliation is unrelated to sexual touching, the full model reveals several suppression patterns. In the final model, those with an “other” Christian affiliation and nonaffiliates display *decreased* odds of sexual touching, compared to those respondents with a conservative Protestant affiliation.<sup>4</sup> All four measures of religious involvement *decrease* the odds of transitioning to sexual touching, although family religiosity is no longer significant in the final model. For example, each one-unit increase in the index of private religiosity is associated with a 22 percent ( $[e^b - 1]100$  or  $[0.779 - 1]100 = -0.221$ ) decrease in the odds of sexual touching. Each one-unit increase in frequency of church attendance is also associated with an eight percent reduction in the odds of sexual touching.

Table 3 displays the results for oral sexual behavior. In the full model, those youth with no religious affiliation display decreased odds of oral sex as compared with conservative Protestant youth. Although each religiosity measure is associated with reduced odds of oral sex when analyzed individually, only religious salience remains significant in the final model. In the full model, each one-unit increase in religious salience is associated with a 21 percent decrease in the odds of oral sex.

Finally, table 4 displays the results for sexual debut. In the full model, not holding a religious affiliation is associated with decreased odds of virginity loss as compared to those teens with a conservative Protestant affiliation. Those

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<sup>4</sup>Ancillary analyses (not shown) generated by substituting the affiliation reference category reveal additional differences in the association between religious affiliation and transitions into sexual activity. Using the same variables included in the final model of tables 2 to 4, conservative Protestants, mainline Protestants, and Catholics display increased odds of sexual touching, oral sex, and sexual intercourse compared those respondents with no religious affiliation. Additionally, those respondents who identified as “just Christian” displayed decreased odds of sexual touching and sexual intercourse in comparison to those with a mainline Protestant affiliation. All other comparisons by affiliation were nonsignificant.

teens with an “other” Christian affiliation also displayed decreased odds of first sex as compared to their conservative Protestant counterparts.<sup>5</sup> Consistent with the results presented in table 3, each measure of religious activity is related to a decrease in the odds of sexual debut when entered independently, but only church attendance and religious salience remain significant in the final model. Specifically, each one-unit increase in church attendance is associated with an eight percent reduction in the odds of sexual debut. Each one-unit increase in religious salience is also related to a 27 percent decrease in the odds of sexual intercourse.

### *Interaction Effects*

Table 5 displays partial odds ratios describing significant interactions for religious involvement by age, gender, and race/ethnicity. In obtaining the partial odds ratios, we first calculated the partial slopes for each interaction equation. We then exponentiated the partial slopes to create partial odds ratios. Partial odds ratios are interpreted in the same way as odds ratios for main effects. The final column of our table describes the percentage difference in the odds of transitioning into sexual activity for those who are a unit apart on religious involvement for each level of the moderator (e.g., males compared to females).

While family religious behavior appears to be associated with reduced odds of sexual touching and oral sexual behavior for both boys and girls, this relationship appears to be stronger for females than for males for both sexual activities. While every unit increase in family religiosity is associated with a 15 percent decrease in the odds of sexual touching for boys, every unit increase in family religiosity is associated with about a 35 percent decrease in the odds of sexual touching among girls. A similar relationship also exists with regard to gender, family religiosity, and oral sex.

It appears that private religious activities, such as praying and reading the Bible, have a stronger association with sexual touching, oral sexual behavior, and sexual intercourse as teens move through adolescence. In other words, private religiosity is more strongly associated with the sexual behavior of older teens than with the sexual activity of younger adolescents. For example, while every unit increase in private religiosity is associated with a 93 percent reduction in the odds of sexual intercourse among 13-year-olds, every unit increase is associated with a 97 percent reduction in the odds of sexual debut among 17-year-olds. Finally, although family religiosity is clearly associated with reduced odds of sexual intercourse among white adolescents, it appears to be unrelated to the transition to first sex among Hispanic adolescents.

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<sup>5</sup>Ancillary analyses (not shown) reveal an interesting interaction pattern between Catholic affiliation and church attendance, family religiosity and private religiosity. In general, the association between religious involvement and sexual behavior is weaker among Catholics as compared to conservative Protestants.

## DISCUSSION

While scholars have long noted the impact of religion in delaying adolescent sexual behavior, research in this area has developed slowly over the years. Studies often disregard the multidimensional nature of religion and focus almost exclusively on sexual intercourse. It is unclear in the literature whether the association between religious involvement and sexual activity varies according to important social characteristics. This paper addressed these gaps by exploring the association between multiple dimensions of adolescent religious involvement (public religiosity, private religiosity, religious salience, and family religiosity) and multiple indicators of sexual activity (sexual touching, oral sex, and sexual intercourse). We also explored whether the association between religious involvement and adolescent sexual activity varies according to age, sex, and race/ethnicity.

Our results suggest that the association between religious involvement and adolescent sexual activity varies according to the measure of religious involvement and form of sexual activity under study. Of the various dimensions of religious involvement, religious salience has a particularly strong association with delayed adolescent sexual behavior. Among our measures of religious involvement, religious salience is perhaps the most proximal influence on adolescent sexual activity, and other forms of adolescent religiosity may be mediated by adolescent religious salience. Religious salience is one aspect of religious involvement that adolescents are able to control. While some teens may be unable to manage how often they attend church or their families' religious behaviors, they can control their perceptions of religion's influence in their daily lives.

Although private religiosity appears only to be associated with delayed sexual touching, higher levels of church attendance seem to be associated with delays in both sexual touching and sexual debut. However, church attendance is unrelated to oral sex, once other religion measures are included. This finding could be due in part to the lack of discussion by religious leadership concerning certain sexual behaviors. While churches may clearly define nonmarital sexual intercourse as immoral, they may not discuss other forms of sexual behavior, such as oral sex. Therefore, church attendance may have less influence on transitions into oral sexual behavior than sexual intercourse. Family religious behaviors appear to have little impact on adolescent sexual activity, once other measures of religiosity are taken into account. As noted above, family religious behaviors may be mediated by more proximal indicators of religious involvement. These findings draw attention to the dynamic and multidimensional nature of religious involvement and highlight the dangers associated with employing a single measure of religious activity or multiitem indices of religiosity.

The data also reveal several interesting findings with regard to religious affiliation. Although religious affiliation is most often unrelated to transitioning



into sexual behavior in initial models, nonaffiliates in particular are actually *less* likely to exhibit these behaviors than their conservative Protestant counterparts, once other measures of religious involvement are taken into account. These unusual findings may be due in part to the nature of religious affiliation during adolescence. Many teens may have few opportunities to explore or develop a religious identity that is separate from that of their parents, and therefore adolescent religious identity may be largely involuntary. Some teens that affiliate as conservative Protestant, Catholic, or mainline Protestant may do so because they have had some sort of contact with a particular religious group, which may or may not be meaningful. For example, teens who are minimally involved in religion may still affiliate with a certain group because members of their family are religious, simply because it is part of their cultural identity, or because they had some contact with that particular group during childhood (e.g., the teen was confirmed or baptized in a certain church). In the above cases, religious affiliation may have little salience in the life of these youths, despite their affiliation. Additionally, in some areas of the country, such as the southeastern United States, identifying as religiously unaffiliated may be viewed as nonnormative. Youth in this region, where adolescent residents also display increased risk of sexual activity compared to other regions of the country (Castronva 2004), may be reluctant to report holding no religious affiliation. Finally, some affiliated teens may even rebel against the teachings of their religious upbringing, which may include participating in sexual activity.

Conversely, unaffiliated adolescents may be socialized to avoid adolescent sexual activity for nonreligious reasons. Unaffiliated teens may receive more exposure to public health messages than religiously affiliated teens. Religiously affiliated teens may be sheltered from such messages, because religious leadership or religiously involved parents may view some public health messages as in opposition to religious principles. Indeed, one study suggests that religious parents avoid conversations about sex and birth control (Regnerus 2005). Religiously unaffiliated teens may also be more receptive to messages from public health officials concerning sexual health than religiously affiliated teens. However, it must also be acknowledged that our results regarding religious affiliation could be a statistical artifact, produced as the result of our dense models capturing various aspects of religious involvement.

With regard to significant interactions, it appears that private religiosity is more strongly associated with sexual activity as teens move through adolescence. It may be that private religious practices are particularly effective in delaying sexual activity as youth move through adolescence because prayer and Bible reading may reinforce religious doctrines about morality and sexual restraint at a time in the life cycle when adolescents are allowed more freedom and are more likely to be involved in romantic relationships. Further, while prayer and Bible reading may be somewhat under parental control in early adolescence, participation in these behaviors in later adolescence may be at the teen's discretion. Therefore, private religiosity may be a more accurate indicator of religious

commitment among older youths than among younger adolescents. It also appears that family religiosity is associated with delayed sexual intercourse for non-Hispanic white and black youth, but not for Hispanic adolescents. Future research focused on family religious practices and adolescent sexuality among Latinos is needed to understand this interesting finding. While several studies focus on religion and family life among African American and non-Hispanic white youth (e.g., Brody, et al. 1996; Pearce and Axinn 1998; Regnerus and Burdette 2006), little research has examined these topics among Hispanics, particularly the influence of these institutions on adolescent sexual behavior.

Consistent with previous research (Bearman and Bruckner 2001; Rostosky, et al. 2004), it appears that religious involvement is more strongly associated with the sexual activity of females than for males, as least with regard to family religious behavior. This finding may be due to the emphasis that religious groups, and perhaps religious families, place on female virginity. Due to the patriarchal nature of some religious traditions, church leadership may emphasize the importance of virginity for girls. Further, the Bible often notes the sexual status or history of female characters, yet rarely does so for males, which may reiterate the importance of virginity status among girls in particular. Likewise, those families that are highly religious may stress the “sexual purity” of female adolescents in family religious discussions or in more subtle ways.

Our research is characterized by several limitations. Although examining the transition to sexual behavior is important for causal ordering, it does introduce bias into the analyses by excluding adolescents who had already engaged in sexual behavior prior to the first round of the study. As a result, we have potentially excluded some of the more economically disadvantaged teens from the analyses, given that socioeconomic disadvantage is associated with sexual activity (Browning, et al. 2004; Cubbin, et al. 2005).<sup>6</sup>

Several other possible selection effects merit brief discussion. Given that religious participation is a choice (although less so among adolescents), some scholars have suggested that an underlying personality factor may explain both religious involvement and outcomes like sexual activity. Religious individuals may be especially risk averse and conforming (Ellison and Levin 1998). For example, adolescents who are religiously involved may be less prone to engage in sexual behavior due to fears of pregnancy or sexual transmitted infections. This same “fearfulness” may also keep these adolescents religiously involved, due to fear of damnation or displeasing one’s parents. However, Regnerus and Smith (2005)—who examine the influence of a number of personality traits including risk-taking, planfulness and fearfulness—suggest that although measures of religious involvement are subject to selection effects, these effects do not explain the influence of religion on a range of outcomes. In other

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<sup>6</sup>Ancillary analyses (not shown) reveal that the differences between our results at Wave 1 and Wave 2 are minimal for all of our measures of sexual activity.

words, those adolescents who are more risk averse may be more likely to be religious; however, these personality traits do not explain the impact of religion on outcomes such as family satisfaction, health, or delinquency.

Scholars are becoming increasingly aware of the important role of biological influences on adolescent health. Scholars have noted the important influence of testosterone levels in motivating sexual activity among boys, as well as the impact of menarche on the sexual behavior of adolescent girls (Udry, et al. 1985; Bingham, et al. 1990; Manlove, et al. 2006a, 2006b). Although few studies have explored biological influences on adolescent sexual behavior in connection with religious involvement, one such study (Halpern, et al. 1994) found significant additive effects of free testosterone and frequency of attendance at religious services on the transition to first intercourse. Boys with higher levels of testosterone at study entry who never or infrequently attended religious services were the most sexually active. Conversely, those boys with lower levels of testosterone who attended services once a week or more were the least sexually active (Halpern, et al. 1994). In addition to biological influences on sexual activity, some scholars have suggested that there are hormonal and genetic components to religiosity (Miller and Stark 2002). Future research in this area should at least consider potentially important connections between biological and social influences on adolescent sexual health outcomes.

Finally, although this paper offers valuable insights into the relationship between religious involvement and sexual transitions, it does not offer information on other important sexual health outcomes. Therefore, future research in this area should investigate the association between various facets of religious attitudes and behaviors and other measures of adolescent sexual activity, such as contraceptive use, method of contraception, and number of sexual partners. It may be that while some aspects of religion are strongly associated with transitions into sexual activity, other aspects may be more salient predictors of contraceptive use and choice.

Despite these limitations, the present study makes an important contribution to the study of religion and adolescent sexual behavior by (1) exploring multiple dimensions of religious involvement, (2) employing multiple measures of adolescent sexual behavior, and (3) examining variations in the association between religious involvement and adolescent sexual behavior by age, gender, and race/ethnicity. Our results suggest that religious salience has a particularly strong association with delayed sexual activity in adolescence. We also found that the rate of transition into sexual activities associated with private and family religiosity varies according to age, gender, and race/ethnicity.

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