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Family Religiosity, Parental Monitoring, and Emerging Adults' Sexual Behavior

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Abstract: The processes through which families play a role in the religious and sexual socialization of children are varied and complex. Few studies have considered the impact of parental or family religiosity on young people's sexual behaviors, either directly or through influence on adolescents' own religiosity. This study of college students at a large, public university in the mid-Atlantic uses multidimensional measures to examine the relationships among family religiosity, parental monitoring during adolescence, students' religiosity, and students' specific sexual behaviors. Results suggest that greater family religiosity is associated with a decreased likelihood of engaging in certain sex acts, but for students who do engage, family religiosity is not associated with any differences in the timing of sexual onset or in the numbers of partners with whom students engaged. Results also suggest that parental monitoring may mediate the relationship between family religiosity and some sexual risk behavior. Greater individual religiosity is associated with a lower likelihood of having engaged in any sexual activity, and a higher likelihood of condom use for students who have had vaginal sex. This study offers valuable insights into the role that religiosity, at both the family and the individual level, plays in college students' sexual behavior.

Keywords: family; religiosity; emerging adults; sexual behavior

1. Introduction

Religion plays an important role in many people's lives, and can impact both physical and mental health. A growing body of research has examined potential links between religiosity and health behaviors, particularly sexual risk behaviors, in adolescents and young adults. Risky sexual behavior is common among college students, as campus "hook-up" culture promotes casual and unplanned sexual encounters (Burdette et al. 2009; Grello et al. 2006). Students often perceive certain risky behaviors, such as oral and/or anal sex, to be less intimate (and therefore more allowable) than vaginal sexual intercourse (Chambers 2007; Kelly and Kalichman 2002; Lyons et al. 2013). It is important to note that oral and/or anal sex are not inherently riskier than vaginal sex; they are classified in most studies as risk behaviors specifically because of the high likelihood that they will occur without protection against STIs (American College Health Association 2015; Boekeloo and Howard 2002; Brückner and Bearman 2005; Moore and Smith 2012).

Parents have consistently been identified as the most important source of religious influence, both in childhood and adolescence, and into adulthood (Lambert and Dollahite 2010; Smith 2003a; Smith and Denton 2005; Smith et al. 2003). Parental religiosity in particular has been associated with adolescents being less involved in problematic risk behaviors such as alcohol and drug use (Foshee and Hollinger 1996; Hayatbakhsh et al. 2014; Pearce and Haynie 2004). In terms of sexual risk,

overall family environment has been shown to play a protective role in adolescent reproductive health decisions (Manlove et al. 2008). However, few studies have considered the specific impact of parental or family religiosity on adolescent sexual behavior, either directly or through influence on adolescents' own religiosity. Those that do exist have used single variables, such as parents' report of religious involvement or of specific beliefs, as a proxy for family religiosity (Manlove et al. 2008; Manlove et al. 2006). Further research is needed to inform a more complete understanding of the mechanisms by which multiple dimensions of family religiosity may impact adolescents' own religiosity and their sexual health decision-making.

The current study extends the literature in order to improve our understanding of the relationships between multi-dimensional aspects of family and college students' religiosity and sexual behavior. This study contributes to existing literature in several unique ways. First, it identifies multiple dimensions of potential religious influence, rather than the one-dimensional measure of religious attendance that is typically used. Second, it considers multiple indicators within the broader context of sexual behavior, allowing for the possibility to observe different avenues of influence by specific sexual act or practice. And third, it considers both family-level and individual-level influences on college students' behavior, acknowledging that these different spheres may be congruent or may contradict one another.

2. Background

2.1. Religion and the Family

Existing literature suggests that the most important determinant of adult religiosity is religious beliefs and participation between the ages of 18 and 20 (Stolzenberg et al. 1995; Wilson and Sherkat 1994), and that parents are one of the strongest socialization influences on adolescent religiosity (Smith and Denton 2005). Religious upbringing is perhaps the most important source of an individual's religious capital (familiarity with a religion's doctrine, rituals, traditions, and members), and is a major determinant of religious belief and behavior (Iannaccone 1990). Most of children's religious capital is built up in a context regulated and favored by their parents; this capital enhances individual satisfaction with religious participation, and so increases the likelihood of later participation (Iannaccone 1990; Stolzenberg et al. 1995). The importance that parents attach to religion is a significant predictor of adolescents' attendance at religious services, the importance they place on religion, their frequency of prayer, and their sense of their religion's doctrine as sacred (Bader and Desmond 2006). College students' retrospective views of their childhood faith activities have been found to be related to their current religious orientations, prayer frequency, and prayer meaning; family faith practices in the home during a child's upbringing are ingrained in each family member, even after they leave the home (Lambert and Dollahite 2010). In a qualitative study of highly religious families from a range of religious denominations, families identified religious conversations as the most meaningful religious activity, even when compared with service attendance or family prayer. Parents and adolescents both named religious conversation as the primary method of sharing their faith (Dollahite and Thatcher 2008). The current study further illuminates pathways between family religiosity during childhood and early adolescence and college students' reports of their current religiosity.

2.2. Religion and Adolescent Sexual Beliefs and Behavior

Religious affiliation has frequently been associated with moral and behavioral attitudes. Multiple studies have found that greater religious participation, irrespective of denomination, is associated with negative attitudes about sex (McKelvey et al. 1999; Pearce and Thornton 2007). Among college students at a large public university in the Eastern US, individuals for whom religion was more a part of their daily lives, and those who adhered to their religion's teachings on sexual behaviors, tended to have more conservative sexual attitudes, were less likely to believe that condoms could prevent negative outcomes such as pregnancy or STIs, and tended to perceive more barriers to condom use (Lefkowitz et al. 2004). Interestingly, the same study found that students who attended services more

frequently had less fear about HIV, but students who reported religion playing a more important role in their daily lives tended to have more fear about HIV, implying that attendance at religious services and the 'importance of religion' may be completely separate phenomena, at least in relation to sexual knowledge and attitudes (Lefkowitz et al. 2004).

A large body of research offers evidence that religiosity, both family and individual, is related not only to sexual attitudes but also to sexual behavior. Higher levels of family religiosity and parental religious attendance have been associated with delayed sexual onset (Manlove et al. 2006) and having fewer sexual partners (Manlove et al. 2008). Religious adolescents are less likely to ever have had sex than non-religious adolescents (Adamczyk and Felson 2006), while frequent attendance at religious services has a strong effect on delaying first intercourse (Jones et al. 2005). Emerging adults with high levels of personal religiosity were the least likely to engage in sexual intercourse, even within a committed (non-marital) relationship (Barry et al. 2015). Data from the National Longitudinal Survey of Youth (NLSY) suggest that denominational affiliation is not as important a predictor of adolescent sexual behavior as religious attendance (Manlove et al. 2006), supporting the idea that religious networks reinforce moral directives and discourage risky behaviors (Regnerus 2010).

The abovementioned research suggests that religiosity is protective against sexual activity, in particular early sexual onset and number of sexual partners. Previous work also suggests, however, that religiosity may increase young adults' sexual risk-taking. Certain religious traditions advocate for the delay of sexual initiation until marriage; popular 'virginity pledge' programs, which constitute a promise by the pledger to remain abstinent until marriage, are on the rise (Landor and Simons 2014; Regnerus 2007). Research demonstrates that though they do tend to be older than non-pledgers at sexual debut, a significant number of virginity pledgers still engage in premarital sex (Bearman and Bruckner 2001; Landor and Simons 2014), and may be at greater risk of negative sexual consequences (e.g., unplanned pregnancy or STIs) due to a lack of condom use at first sex and a higher likelihood of engaging in unprotected non-coital sexual encounters, including oral and anal sex (Brückner and Bearman 2005; Landor and Simons 2014). Other studies have found that strong parental religious beliefs and participation in family religious activities are associated with lower odds of using contraception at first sex (Manlove et al. 2006), and that frequent religious service participation is associated with a reduced likelihood of young women accessing contraceptive or STI services (Hall et al. 2012).

Existing evidence is strong that family religiosity influences individual adolescent and emerging adult religiosity, and that individual religiosity can play a role in sexual decision-making. What remains unknown, however, is how these constructs interact. Based on our understanding of college students as belonging to the unique developmental stage of emerging adulthood, characterized by burgeoning independence, intellectual experimentation, and physical and emotional sensation-seeking (Arnett 2000, 2007, 2011), we hypothesize that the impact of family religiosity on sexual behavior will be stronger when emerging adults have strong ties to those family values and teachings (that is, when they are more religious themselves).

2.3. Parental Monitoring

Parental monitoring, defined as rule-setting and vigilant oversight of a child's friend group and activities (Barnes et al. 2006; Chilcoat and Anthony 1996; Li et al. 2000), has been identified as protective against adolescent risk behaviors. Among parents, weekly attendance at religious services is associated with a higher likelihood of monitoring their children's friendships and imposing higher expectations about sexual morality (Kim and Wilcox 2014). Adolescents who report higher levels of parental monitoring are more likely than others to delay sexual onset (DiIorio et al. 2004; Karofsky et al. 2001), and to have fewer partners if they are sexually active (DiClemente et al. 2001; Huebner and Howell 2003). Higher levels of parental monitoring are also associated with less favorable adolescent attitudes about initiating sexual intercourse, and lower intentions to engage in intercourse (Sieverding et al. 2005).

Family religiosity has also been associated with parental monitoring. Data from the National Survey of Parents and Youth suggest that greater religious participation increases parents' supervision of their adolescent children (Smith 2003b). An examination of late adolescents' perceptions of parental religiosity and parenting behavior found that adolescents who perceived their parents as more religious also reported higher levels of parental monitoring behavior (Snider J.B. and Vazsonyi 2004). And data from the National Longitudinal Survey of Youth found that more frequent engagement in family religious activities was associated with higher parental monitoring (Farmer et al. 2008). These prior findings suggest that parental monitoring may play a role on the pathway between family religiosity and adolescent sexual behavior.

The above research supports the conclusion that religiosity (both family and individual) is associated with emerging adults' sexual behavior; however, there remain substantial gaps in our understanding of how these various constructs are related. Existing studies fail to distinguish between different sex acts, implicitly equating sexual activity or involvement (ever having had sex, age at sexual debut, and number of sexual partners) with risk behavior, often while ignoring avenues of actual sexual risk (inconsistent contraceptive use, ever having had oral and/or anal sex, and frequency of condom use for each of these behaviors). In addition, much of this research is more than a decade old. Adolescents and college students today may be less well-informed about the specific sexual values of their individual religions, and younger people, even those who identify as religious, may not adhere to their faiths' doctrines on human sexuality as strictly as older generations (Prothero 2007; Regnerus 2007).

The current study examined potential pathways of influence from family religiosity to emerging adults' religiosity and sexual behaviors. We hypothesized that: (1) greater family religiosity would be associated with decreased sexual activity (early sexual onset and number of sexual partners) and increased sexual risk (including lack of contraceptive use at last vaginal sex, and higher likelihood of students' having had unprotected oral, vaginal, or anal sex) among college students,; (2) that parental monitoring would mediate the relationship between family religiosity and students' sexual behavior; and (3) that students' current religiosity would act as a moderator, strengthening the relationship between family religiosity and students' sexual behavior.

3. Methods

3.1. Sample

This study used a cross-sectional survey design to explore the relationships among family religiosity, parental monitoring, students' religiosity, and students' sexual behavior. Participants were a convenience sample of undergraduate students at a large, public university in the mid-Atlantic. Previous studies have shown the validity of adolescents' self-reported sexual behavior (Davoli et al. 1992; Orr et al. 1997; Schrimshaw et al. 2006; Shew et al. 1997), but a review of the literature calls attention to multiple recommendations for improving the reliability of adolescents' self-report. The current study integrates many of these recommendations. To reduce socially desirable responding, the survey was administered through an anonymous online link. A guarantee of participant confidentiality was repeated before each set of 'sensitive' questions, and the need for accurate reporting for the improvement of knowledge about college students' health was stressed multiple times throughout the survey (Alexander et al. 1993; DiClemente 2015; DiClemente et al. 2013; Weinhardt et al. 1998). All study procedures were reviewed and approved by the university's Institutional Review Board before data collection began. Anonymous online surveys were collected from 684 undergraduate students; cases with too many missing data were removed (n = 72), as were four cases representing outliers in terms of age (and therefore, for the purposes of this study, not in the developmental stage of interest), resulting in the final analytic sample, n = 608.

3.2. Measures

3.2.1. Family Religiosity

Family religiosity was measured by the 9-item Faith Activities in the Home Scale (FAITHS - short version) (Lambert and Dollahite 2010). Each of 9 family faith activities (e.g., family prayer, family religious conversations) was rated for frequency (0–6, 'never or not applicable' to 'more than once a day') and importance (0–4, 'not important or not applicable' to 'extremely important'). The two summed total scores were highly correlated in this sample (r = 0.852, $p < 0.001$), so subsequent analyses used only the frequency score (Lambert and Dollahite 2010). Because the continuous FAITHS frequency score was positively skewed, we transformed it into a categorical variable with two groups (Never/Infrequent and Frequent) for subsequent analyses.

3.2.2. Parental Monitoring

Parental monitoring was measured using a 9-item scale (Arria et al. 2008) that assesses respondents' perceptions of the level of monitoring and supervision they received during their last year of high school (Pinchevsky et al. 2012). A total parental monitoring score was constructed by summing a participant's responses on all 9 items, with higher scores representing a higher level of parental monitoring.

3.2.3. Student Religiosity

Student religiosity was measured using 4 domains from the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS), a tool developed specifically for use in health research (John E. Fetzer Institute 2003): (1) Overall self-ranking/Religious Intensity (e.g., to what extent do you consider yourself a religious person?), (2) Private Religious Practices (e.g., how often do you pray privately in places other than at church, synagogue, or other place of worship?), (3) Forgiveness (e.g., I know that God forgives me), and (4) Organizational Religiousness (e.g., how often do you go to religious services?). Each item in the BMMRS uses Likert scale response options, with lower scores indicating a greater 'amount' of the item being measured (e.g., closeness to God). Each subscale receives a separate score; for analytic purposes, the subscale scores can be used individually, or summed together for a total religiosity score. For ease of interpretation, scores on each domain were recoded so that lower scores indicate a lower 'amount' of the item being measured.

3.2.4. Student Sexual Behaviors

The primary outcome variables of student sexual activity and risk were measured using the 9-item sexual behaviors scale from the 2015 *Youth Risk Behavior Survey (YRBS)* (CDC 2015), which evaluates sexual behaviors that contribute to unintended pregnancy and sexually transmitted infections (CDC 2016); students reported age at first sex, number of sexual partners, substance use before last sex, and condom use and/or contraceptive use at last vaginal sex. Participants were asked additional questions about ever having had oral sex or anal sex; if they answered yes, participants were prompted to report whether or not they had ever had the previously reported sexual encounter (oral and/or anal sex) without using a condom.

3.2.5. Covariates

Demographic variables that are theoretically or empirically related to emerging adults' sexual behaviors, including gender, race, religion, sexual relationship status, parents' education, parents' birthplace, and household composition (i.e., single or dual-parent household), were assessed as potential covariates.

3.3. Analyses

Preliminary frequencies and descriptive statistics were performed. We conducted chi-square tests of association and simple logistic regressions to examine the relationships between family and student religiosity, parental monitoring, and student sexual behaviors. Independent variables with a significant bivariate association ($p < 0.05$) with the outcome variables were included in a series of multivariate logistic regression models which produced adjusted odds ratios (aORs). To assess mediation, we first assessed the relationships among family religiosity, parental monitoring, and sexual behavior outcomes; we then used Hayes' PROCESS tool (Hayes 2017) to estimate the indirect effect of parental monitoring on sexual behavior outcomes. Bias-corrected accelerated bootstrapping with 1000 replications was used to obtain 95% confidence intervals (CIs) around the indirect effects. To assess moderation, we created centered interaction terms between family religiosity and each of five possible student religiosity scores (four domain scores and one total score); we then built hierarchical models to test the effect of each interaction term on the relationship between family religiosity and each sexual behavior outcome. Data analyses were conducted in SPSS v25 (IBM Corp 2017).

4. Results

Demographic characteristics of the analytic sample are presented in Table 1. Nearly 77 percent (n = 467) of the sample identified as female, and slightly more than half (n = 318, 52.3%) as White, with a median age of 21 years old. Religious affiliation was distributed across six separate groups, with a majority of the sample identifying as Christian (non-Catholic) (n = 158, 26.2%), Roman Catholic (n = 136, 22.5%), or Atheist/Agnostic (n = 130, 21.4%). Students were most likely to describe themselves as being currently uninvolved in a sexual relationship (n = 253, 41.6%) or involved with one serious (monogamous) sexual partner (n = 244, 40.1%) (for reference, only 8 students reported being married).

Students reported high levels of sexual activity and sexual risk behaviors; students' participation in certain sex acts and use of pregnancy and STI prevention methods are highlighted in Figures 1 and 2. Among students who have participated in any sexual activity (oral, vaginal, or anal), more students (n = 282, 57%) delayed their first sexual activity until age 17 or later and slightly more than half (n = 276, 56%) have had four or more sexual partners.

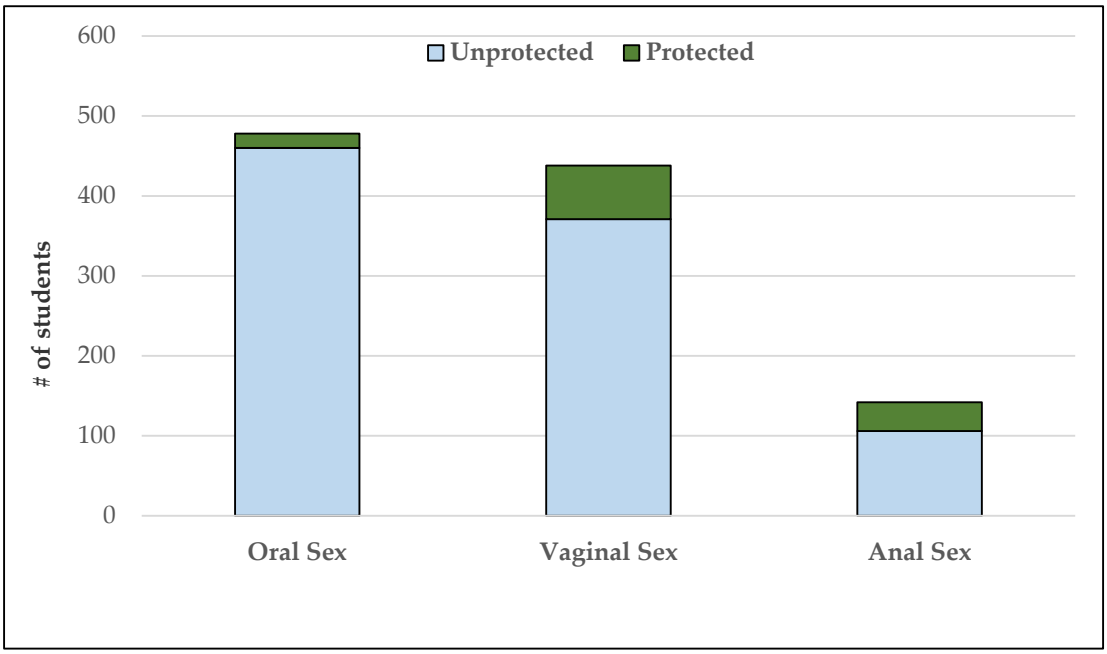

Figure 1. Students' Sexual Activity: Ever Unprotected vs. Always Protected (n = 608).

Table 1. Characteristics (%) of Analytic Sample (n = 608).

Age, Mean (SD) [a]	**20.64 (1.79)**
Race	
White	52.3
Black/African American	15.3
Hispanic/Latino	6.1
Asian	15.3
Other (includes Multiple Races)	11
Gender	
Female	76.8
Male	22.7
Transgender	0.5
Which of the following best describes you?	
Heterosexual (straight)	89.6
Gay or Lesbian	2
Bisexual	6.9
Not Sure	1.5
Sexual Relationship Status	
No current sexual relationship	41.6
One casual partner	12.2
One serious (monogamous) partner	40.1
Multiple partners	6.1
Religious Affiliation [b]	
Roman Catholic	22.5
Christian (non-Catholic)	26.2
Jewish	14.5
Muslim	4.4
Other Non-Christian	10.7
Atheist/Agnostic	21.4
First Generation College Student [c]	
No	78.1
Yes	21.9
Parents' Birthplace [d]	
Both parents born in the U.S.	55.7
One or both parents born outside the U.S.	44.2
Single Parent Household (during HS)	
No	81.4
Yes	18.6

SD, standard deviation; HS, high school. [a] n = 3 missing; [b] n = 4 missing; [c] n = 10 missing; [d] n = 1 missing.

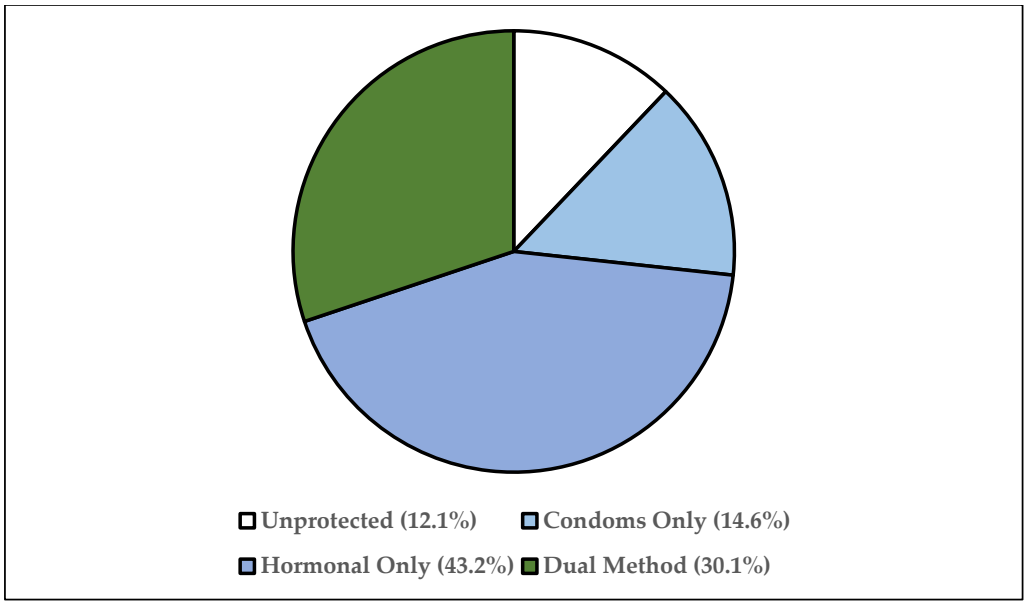

Figure 2. Pregnancy and STI Prevention at Last Vaginal Sex (n = 438).

Overall, students reported low family religiosity during their childhood and adolescence (Table 2). The mean *FAITHS* frequency score was 10.56 (possible scores ranged from 0 to 54, with a higher score indicating greater frequency. Average scores in the 'never' or 'yearly' category were categorized as 'infrequent' (61%); average scores in the 'monthly' category or higher were categorized as 'frequent' (39%). Scores on each of the four domains of student religiosity, as well as total student religiosity scores, were low to moderate, indicating a low overall degree of current religiosity in this sample. However, students reported a moderate to high degree of parental monitoring during high school, with female students reporting significantly greater parental monitoring than male students.

Table 2. Summary score statistics (n = 608).

	M	SD	Min	Max
Family Religiosity (Frequency) [a]	10.56	11.31	0	54
Parental Monitoring [b]	23.29	6.78	0	36
Student Religiosity—Overall Self-Ranking	2.61	1.75	0	6
Student Religiosity—Private Practice [c]	9.0	8.337	0	35
Student Religiosity—Forgiveness [d]	4.95	2.95	0	9
Student Religiosity—Organizational Religiousness	2.79	2.79	0	10
Student Religiosity—Total Score [e]	19.41	14.03	0	60

SD, standard deviation. [a] n = 22 missing; [b] n = 148 missing; [c] n = 1 missing; [d] n = 5 missing; [e] n = 6 missing.

Bivariate results. Unadjusted associations between family religiosity and sexual behaviors were computed first for the total sample (Table 3) and then stratified by religious group (tables not shown). Subsequent analyses consider degree of religiosity across groups for the total sample, rather than by denomination. Students who reported frequent family religiosity were less likely ever to have had oral sex, vaginal sex, and anal sex than were those who reported infrequent family religiosity. Among students who reported ever having had vaginal sex, students who reported frequent family religiosity were less likely ever to have had it unprotected.

Parental monitoring differed significantly by family religiosity, with students reporting frequent family religiosity also reporting a higher degree of parental monitoring (M = 24.98, SD = 6.484) than students who reported infrequent family religiosity (M = 22.18, SD = 6.680), $t(443) = -4.317$, $p < 0.001$. Students who reported greater parental monitoring were less likely to have had four or more lifetime partners (OR = 0.959, 95% CI: 0.929, 0.989), less likely ever to have had anal sex (OR = 0.950, 95% CI: 0.920, 0.980), and less likely ever to have had unprotected vaginal sex (OR = 0.921, 95% CI: 0.874, 0.971). They were more likely to have used any effective method of pregnancy prevention at last vaginal sex (OR = 1.075, 95% CI: 1.023, 1.131), and more likely specifically to have used a condom at last vaginal sex (OR = 1.049, 95% CI: 1.014, 1.084).

Associations were also computed between the independent variable of family religiosity and the potential moderator of student religiosity (Table 4); students who reported frequent family religiosity scored significantly higher on every domain of individual religiosity than did students who reported infrequent family religiosity.

Table 3. Unadjusted associations between family religiosity, parental monitoring, and student religiosity and emerging adults' sexual behaviors (n = 608).

Sexual Behavior Outcomes	Family Religiosity (Frequent)			Key Predictors Parental Monitoring			Student Religiosity (Total Score)		
	OR	95% CI	p Value	OR	95% CI	p Value	OR	95% CI	p Value
Age at first sex (oral, vaginal, or anal) (17 or older)	1.167	0.795, 1.714		1.009	0.979, 1.039		1.012	0.997, 1.026	
Four or more lifetime sexual partners	0.848	0.579, 1.241		0.959	0.929, 0.989	0.008	0.978	0.965, 0.992	0.003
Ever had oral sex [a]	0.333	0.221, 0.503	<0.001	0.993	0.959, 1.029		0.949	0.935, 0.963	<0.001
Ever had unprotected oral sex	0.788	0.299, 2.075		0.995	0.910, 1.089		0.980	0.948, 1.014	
Ever had vaginal sex	0.390	0.270, 0.564	<0.001	0.984	0.953, 1.015		0.956	0.944, 0.969	<0.001
Ever had unprotected vaginal sex [b]	0.563	0.329, 0.962	0.036	0.921	0.874, 0.971	0.002	0.982	0.963, 1.002	
Ever had anal sex	0.601	0.399, 0.908	0.015	0.950	0.920, 0.980	0.001	0.972	0.957, 0.986	<0.001
Ever had unprotected anal sex	1.107	0.475, 2.581		0.993	0.928, 1.063		1.003	0.971, 1.036	
Substance use before last sex (oral, vaginal, or anal)	0.762	0.511, 1.134		0.987	0.957, 1.018		0.989	0.974, 1.003	
Condom use at last vaginal sex [c]	1.438	0.953, 2.168		1.049	1.014, 1.084	0.005	1.017	1.002, 1.033	0.031
Pregnancy prevention [d] at last vaginal sex	1.307	0.649, 2.633		1.075	1.023, 1.131	0.005	0.990	0.967, 1.014	

OR, unadjusted odds ratio; CI, confidence interval; p values reported only for variables significant at $p < 0.05$. [a] n = 607; [b] n = 438 (only students who report having had vaginal sex); [c] n = 415 (only students who report having had vaginal sex, n = 23 missing); [d] Pregnancy prevention at last vaginal sex includes condom use and/or use of hormonal birth control methods (pill, patch, ring, intrauterine device, or implant).

Table 4. Student religiosity by family religiosity (frequency).

	Infrequent Family Religiosity		Frequent Family Religiosity			
	M	**SD**	**M**	**SD**	***t*-Test**	***df***
Overall self-ranking/religious intensity	1.80	1.441	3.76	1.472	−15.885 ***	584
Private religious practices	5.97	5.560	15.68	8.066	−17.235 ***	583
Forgiveness	4.01	2.994	6.28	2.277	−9.783 ***	579
Organizational religiousness	1.55	1.920	4.55	2.824	−15.309 ***	584
Student Religiosity Total Score	12.36	9.983	29.25	12.49	−18.010 ***	578

*** $p < 0.001$.

Multivariate results. Tables 5 and 6 present the results of multivariate analyses. After controlling for relevant individual- and family-level covariates, we found that students who reported frequent family religiosity were significantly less likely ever to have had oral sex (aOR = 0.429, 95% CI: 0.239, 0.771) and ever to have had vaginal sex (aOR = 0.551, 95% CI: 0.323, 0.942) (Table 4). Among students who reported having had vaginal sex, students with frequent family religiosity remained significantly less likely ever to have had unprotected vaginal sex (aOR = 0.470, 95% CI: 0.262, 0.841).

Table 5. Binary logistic regression models predicting emerging adults' sexual behaviors.

Sexual Behavior Outcomes	**Key Predictor: Family Religiosity (Frequent)**		
	aOR	**95% CI**	***p* Value**
Age at first sex (oral, vaginal, or anal) (17 or older)	1.034	0.687, 1.556	
Four or more lifetime sexual partners	0.897	0.596, 1.348	
Ever had oral sex [a]	0.429	0.239, 0.771	0.005
Ever had unprotected oral sex	1.100	0.333, 3.004	
Ever had vaginal sex [b]	0.551	0.323, 0.942	0.029
Ever had unprotected vaginal sex [c]	0.470	0.262, 0.841	0.011
Ever had anal sex	0.693	0.431, 1.116	
Ever had unprotected anal sex	1.137	0.455, 2.838	
Substance use before last sex (oral, vaginal, or anal)	0.805	0.530, 1.222	
Condom use at last vaginal sex [d]	1.592	1.033, 2.453	0.035
Pregnancy prevention [e] at last vaginal sex	1.740	0.827, 3.661	

aOR, adjusted odds ratio; CI, confidence interval; *p* values reported only for multivariate models significant at $p < 0.05$. [a] $n = 607$; model adjusted for race, religion, sexual relationship status, parents' birthplace, and single parent household during high school. [b] $n = 608$; model adjusted for age, race, religion, sexual relationship status, parents' birthplace, first generation college student, and single parent household during high school. [c] $n = 438$ (only students who report having had vaginal sex); model adjusted for age and sexual relationship status. [d] $n = 415$ (only students who report having had vaginal sex, $n = 23$ missing); model adjusted for sexual relationship status. [e] Pregnancy prevention at last vaginal sex includes condom use and/or use of hormonal birth control methods (pill, patch, ring, intrauterine device, or implant).

Only one outcome variable, ever having had unprotected vaginal sex, had a statistically significant relationship with both the independent variable of family religiosity (OR = 0.563, 95% CI: 0.329, 0.962) and with the potential mediator of parental monitoring (OR = 0.921, 95% CI: 0.874, 0.971); subsequent tests for mediation using hierarchical logistic regression were conducted on this outcome variable. After controlling for relevant individual-level characteristics, results suggest that, as hypothesized, there was a significant indirect effect of family religiosity on college students' ever having had unprotected vaginal sex through parental monitoring ($b = -0.261$, BCa CI: −0.515, −0.085).

To test for possible moderation by student religiosity, we built separate hierarchical logistic regression models for each sexual behavior outcome and the interaction of family religiosity with each of five possible student religiosity scores (four domain scores and one total score). Results from these regressions (tables not shown) indicate that none of the five domains of student religiosity moderate the relationship between family religiosity and student sexual activity or sexual risk. Student religiosity was subsequently explored as an independent predictor of students' sexual activity and sexual risk. After controlling for relevant individual-level and family-level characteristics, higher students' total religiosity score was significantly associated with less likelihood of having had four or more sexual

partners (aOR = 0.985, 95% CI: 0.970, 1.000), ever having had oral sex (aOR = 0.972, 95% CI: 0.952, 0.993), ever having had vaginal sex (aOR = 0.973, 95% CI: 0.953, 0.993), and ever having had anal sex (aOR = 0.979, 95% CI: 0.960, 0.998). In addition, students with a higher religiosity score were more likely to have used a condom at last vaginal sex (aOR = 1.017, 95% CI: 1.001, 1.034) (Table 5).

Table 6. Binary logistic regression models predicting emerging adults' sexual behaviors.

Sexual Behavior Outcomes	Key Predictor: Student Religiosity (Total Score)		
	aOR	95% CI	*p* Value
Age at first sex (oral, vaginal, or anal) (17 or older)	1.005	0.989, 1.022	
Four or more lifetime sexual partners [a]	0.984	0.969, 1.000	0.043
Ever had oral sex [b]	0.972	0.952, 0.993	0.008
Ever had unprotected oral sex	0.990	0.949, 1.033	
Ever had vaginal sex [c]	0.973	0.953, 0.993	0.009
Ever had unprotected vaginal sex	0.985	0.965, 1.006	
Ever had anal sex [d]	0.979	0.960, 0.998	0.034
Ever had unprotected anal sex	0.999	0.963, 1.036	
Substance use before last sex (oral, vaginal, or anal)	0.992	0.977, 1.007	
Condom use at last vaginal sex [e]	1.017	1.001, 1.034	0.039
Pregnancy prevention [f] at last vaginal sex	1.007	0.982, 1.034	

aOR, adjusted odds ratio; CI, confidence interval; *p* values reported only for multivariate models significant at $p < 0.05$. [a] $n = 485$ (only students who report having had oral, vaginal, or anal sex, $n = 10$ missing); model adjusted for age, sexual relationship status, and parents' birthplace. [b] $n = 607$ ($n = 1$ missing); model adjusted for race, religion, sexual relationship status, parents' birthplace, and single parent household during high school. [c] $n = 608$; model adjusted for age, race, religion, sexual relationship status, parents' birthplace, first generation college student, and single parent household during high school. [d] $n = 585$ ($n = 23$ missing); model adjusted for age and sexual relationship status. [e] $n = 415$ (only students who report having had vaginal sex, $n = 23$ missing); model adjusted for sexual relationship status. [f] Pregnancy prevention at last vaginal sex includes condom use and/or use of hormonal birth control methods (pill, patch, ring, intrauterine device, or implant).

5. Discussion

Findings from this study suggest that religiosity, both family and individual, may play a role in emerging adults' sexual behavior. Greater family religiosity was associated with a decreased likelihood of students' engaging in certain sex acts (ever having had oral or vaginal sex), but for students who did choose to engage, family religiosity was not associated with any differences in the timing of sexual onset or in the students' number of partners. This finding confirms previous work and implies that family religiosity may influence some students' decisions whether or not to have sex; but for students who do choose to have sex, the break from religious teachings about sex may already have occurred, so family religiosity no longer had a role to play in decisions like when to begin having sex, or whether or not to have sex with more than one partner. It is also possible that students who internalized religious messages about refraining from sexual activity might be more likely to characterize their families as being highly religious than would students for whom those religious messages were less salient.

Contrary to our expectation, higher family religiosity was associated with a decreased likelihood of risk behaviors, rather than an increased likelihood of risk. Within the context of the previous finding, it may be that students who have chosen to be sexually active, in contradiction to family religious teachings about sexual activity, would be more likely to take extra precautions so as not to be found out (through pregnancy or STIs) by their parents or other family members. Previous research on adolescents active in their church community found that participants' parents had regularly reinforced the idea that going against biblical principles related to sexual activity would increase the likelihood of negative consequences that could derail future goals and opportunities (Moore et al. 2014). Fear that a negative consequence like unplanned pregnancy may lead to parental disappointment or shame may drive students to protect themselves from risk by avoiding unprotected vaginal sex to maintain the secrecy of sexual activity.

Though more frequent family religiosity was associated with higher student religiosity, none of the four domains of student religiosity (overall self-ranking, private practice, forgiveness, or organizational religiosity), nor the total student religiosity score, served to moderate the relationship between family

religiosity and students' sexual behaviors. The finding that higher family religiosity is associated with higher student religiosity was expected; growing up in an environment that values religious participation and religious teachings is likely to instill an appreciation for, or sense of obligation to, those religious traditions. The lack of moderation by students' current religiosity on the relationship between family religiosity and students' sexual behaviors suggests that, rather than family religiosity exerting influence in the form of a parent's voice in a student's head or memories of a family's religious teachings, a more thorough transmission of beliefs may occur in highly religious families, so that students now view those beliefs as their own, rather than as a holdover from parental influence in childhood. Having a high degree of personal religiosity is independently associated with certain student sexual behaviors, but that association does not change the original relationship between family religiosity and students' behaviors; whether or not a student has internalized religious messages remains separate from the potential internalizing of other standards of behavior or sexual expectations.

Students in more religious families report a higher degree of parental monitoring, and also a significantly lower likelihood of ever having had unprotected vaginal sex (among students who have had vaginal sex). This finding seems to support earlier findings in this study and the possibility that fear of parents finding out about sexual activity may be a strong motivator for students from highly religious families to avoid sexual risk-taking. Parents in more religious families are paying more attention to students' whereabouts and behaviors. If the family's messaging around sex is religiously motivated and focused on abstinence or 'saving oneself for marriage', it is likely that students' fear of negative consequences (like pregnancy or sexually transmitted infections) is leading them to use condoms during vaginal sex. Avoiding pregnancy or sexually transmitted infections may ensure that parents never learn about students' sexual activity or behaviors.

It is also possible that the desire to maintain individual and family reputation within a close religious community acts as further motivation to avoid risk. Hill et al. (2014) suggest that an individual may be more likely to engage in a behavior like premarital sex if feelings of shame or embarrassment associated with that behavior were lower. In a highly religious family that is part of a larger religious community, stigma around premarital sex and the potential to bring community shame upon and one's family may further motivate sexually active students to avoid unprotected vaginal sex that could result in an unintended pregnancy.

This study has certain limitations that must be considered when interpreting the results. Because participants were assessed at only one time point, causal inferences cannot be made using these cross-sectional data. In addition, because we only had access to students and not to their parents or families, family religiosity was measured by students' retrospective report. It is possible that students' recall of family religious activities may not be consistent with perceptions of other family members. Because religiosity (both family and individual) was low overall in this sample, it is possible that we may not be fully capturing the relationship between religiosity and emerging adults' sexual behaviors; however, the strength and direction of certain findings related to religiosity, despite low report overall in the sample, suggest that we may be underestimating, rather than overestimating, the potential role of religiosity in emerging adults' sexual behaviors.

A final limitation of this study relates to the fluid nature of sexual activity and sexual relationships during the developmental stages of late adolescence and emerging adulthood. An abundance of literature suggests that emerging adults develop intimate relationships and acquire new sexual experiences at a rapid pace (e.g., Alexander et al. 2015; Meier and Allen 2009; Tanner et al. 2009), often through casual hook-up encounters (Allison and Risman 2014, 2017; Stinson et al. 2014). Dating, love, and romantic exploration are different during emerging adulthood, with a focus on individual identity exploration as well as the potential for physical and emotional intimacy (Arnett 2000). Given the rapid pace of change during this developmental stage, it is important to recognize that the data reported in this study only provide one snapshot of students' sexual behaviors and do not account for the complexities inherent in emerging adult sexual encounters.

Despite these limitations, findings from this study contribute to the study of religion and family life by illuminating potential relationships between family-level influences and emerging adults' sexual behaviors and highlighting the complex nature of religiosity and its long arm of influence. Overall, there is some evidence that both family and individual religiosity are associated with emerging adults' sexual behavior, though the two play independent roles in the relationship, and parent religiosity seems to exert influence primarily through increased parental monitoring of adolescents.

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