Lower Use of Sexual and Reproductive Health Services Among Women with Frequent Religious Participation, Regardless of Sexual Experience

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Abstract

Purpose: To investigate associations between religious characteristics and sexual and reproductive health (SRH) service use among young women in the United States.

Methods: We combined two cycles of data from the U.S. population-based reproductive health survey, The National Survey of Family Growth (2002 and 2006–2008). Our analysis was restricted to young women aged 15–24 years ($n=4421$). We tested relationships between religious characteristics, including religious affiliation, service participation, and importance of religion in daily life, and use of SRH services for contraception, sexually transmitted infection (STI) testing/treatment, and routine gynecologic examination care within the last year.

Results: Nearly all young women identified a current religious affiliation (82%), with 46% identifying Protestant and 28% Catholic. Three quarters (75%) of young women reported current religious service participation, the majority of whom had experienced sexual intercourse (70%); 31% reported weekly religious service participation. Over half (59%) had used SRH services recently. In unadjusted analyses, young women with current religious affiliation who participated in services weekly and deemed religion important had lower proportions of SRH service use than their counterparts (all $p < 0.001$). In multivariate regression models, young women with less-than-weekly religious service participation were 50% more likely to use services than those participating weekly (odds ratio [OR] 1.5, confidence interval [CI] 1.3, 2.1, $p < 0.001$), even among sexually experienced women.

Conclusions: Increasing frequency of current religious service participation was negatively associated with SRH service use among young women, despite sexual experience. Religiously and sexually active young women in the United States may have an unmet need for SRH care.

Introduction

RELIGION PLAYS AN INTEGRAL ROLE in life and health, especially for women in the United States.^{1–4} For adolescents and young women who are at a critical point in their social, psychologic, and physical development, religion may shape health decision making and behavior.¹ In regard to young women's sexual and reproductive health (SRH), sex is often an issue of moral and religious values as much as it is a normal developmental process that contributes to health and well-being.¹ Approaches to sex, including expectations learned before and after menarche, attitudes toward coitarche, and views on relationships, childbearing, marriage, contraception, pregnancy, and abortion, are often influenced by religious beliefs, dedication, and practices.^{1,4,5}

Religious young women indeed do have sexual relations, and characteristics of religion, such as affiliation with a reli-

gious denomination, religious service participation, or value attributed to religion in daily life, appear to influence sexual behaviors.^{1,6–8} Research has examined the role of these religious characteristics (as both protective and risk factors) for a variety of SRH outcomes, including sexual initiation, sexual education, contraceptive use, unintended pregnancy, and abortion.^{5–22} An analysis of 50 studies examining religiosity and sexual behavior conducted as part of the National Campaign to Prevent Teen Pregnancy suggested that religion might not always act as a gatekeeper to risky sex and related outcomes, as was previously thought.¹⁸ Collectively, the comprehensive review found that many religious characteristics were not associated with less frequency of sex, lower number of sexual partners, increased contraceptive use, or lower pregnancy rates.¹⁵

Some have argued that young women with strong religious beliefs and more active involvement or those affiliated with

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certain denominations are actually at risk for negative SRH outcomes,^{1,9,12,15,17,23} in part because they are less likely to receive comprehensive sex education²⁰ and less likely to use contraception despite becoming sexually active.^{9–12} A study by Kramer et al.⁵ used U.S. population-based data to determine contraceptive practices of adolescent women at risk for unintended pregnancy according to religious affiliation. The authors found that Catholic and fundamentalist Protestant teens had a 9-fold and 5-fold increased odds of not using contraception, respectively, compared to mainstream Protestants.⁵ In another study based on state data on birth rates and religious beliefs from multiple sources in the United States, Strayhorn and Strayhorn⁹ found that states with increased religiosity of residents had higher teen birth rates ($r=0.73$, $p<0.005$), even when controlling for socioeconomic status.

Religious young women who are sexually active and potentially at risk for poor reproductive outcomes may have particular needs for SRH care. Inadequate SRH care is believed to be one of the many complex reasons for poor SRH outcomes among adolescent and young adult women more broadly,^{24–29} and religion may influence attitudes and behaviors around SRH care seeking. Whether and how young women's religious characteristics relate to their use of family planning, sexually transmitted infection (STI), and even routine gynecologic healthcare services, however, is unknown.

Purpose

We examined associations between characteristics of religiosity and SRH service use among adolescent and young adult women in the United States from 2002 to 2008.

Materials and Methods

Design and sample

The National Survey of Family Growth (NSFG), a population-based survey of women and men residing in the United States, provided data for this study.^{30–32} The survey assesses factors of family life, marriage and divorce, pregnancy, infertility, use of contraception, and health. Household in-person interviews were conducted with women and men aged 15–44 years ($n=12,571$; in 2002; $n=13,495$ in 2006–2008). The study oversampled black and Hispanic U.S. residents. The response rates in cycle 6 and 7 were 75% and 79%, respectively.

We restricted our study population to adolescent (aged 15–19 years) and young adult women (aged 20–24 years), whom we refer to collectively as young women ($n=5,164$). Young women who were pregnant ($n=269$) or who had received prenatal or postpartum care in the previous year ($n=473$) were excluded from the main analysis, as we hypothesized these women would have different needs in terms of health services than the general population. Our primary sample ($n=4,421$) included 2,157 adolescent and young adult women from 2002 and 2,264 from 2006–2008. Princeton University's Institutional Review Board approved this study.

Measures

A series of NSFG questions assessed religious characteristics, including past and current religious affiliation, religious service participation, and importance attributed to religion in daily life. Of 30 specific and nonspecific religious denomina-

tions most commonly reported in the United States (including none and other), young women were asked in what religion they were raised (childhood/family religious affiliation) and what religion they most identify with now (current religious affiliation). Those whose current affiliation was a Christian denomination were further asked if they identified as a type of fundamental Christian (including a born again Christian, charismatic, evangelical, fundamentalist, or none of the above). Young women were asked how often they attended religious services at age 14 and how often they attend now. We categorized these variables on a 3-point scale on which we focused for primary analyses: once per week or more frequently, less than weekly, or never. Finally, women were asked on a 3-point scale how important religion currently is in their daily life (very, somewhat, or not at all).

In regard to SRH service use, young women were asked if they had visited a medical provider within the 12 months preceding the survey and how many visits were made. Questions assessed types of services used, including contraceptive services (contraceptive method provision, contraceptive evaluation/checkup, contraceptive counseling, and emergency contraceptive (EC) provision and counseling), STI testing/treatment services, and other routine gynecologic examination services (Pap smear, pelvic or other gynecologic examination). For our primary outcome, we considered young women to have had received SRH services if they had visited a provider for one or more of these service types within the last year.

We examined several key demographic, socioeconomic, and reproductive history variables as potential confounders based on our previous related work on SRH service use.³³ Variables of interest included race/ethnicity (Hispanic, non-Hispanic white, non-Hispanic black, other), education obtained (less than high school diploma, i.e., discontinued high school, high school diploma or GED, at least some college education, still in high school), income category (<\$25,000, \$25,000–49,999, \$50,000–74,999, ≥\$74,999), poverty level (above or below 200% poverty level), employment situation (employed, unemployed, still in school or at home/other), insurance status (uninsured/gaps in insurance vs. full coverage in the last year), birthplace (U.S. native or foreign-born), place of residence (urban, suburban, or rural), mother's education level (<high school, high school diploma or GED, or at least some college), childhood family situation (intact vs. disrupted), age of mother at first birth, age at menarche, sexual intercourse experience (had vaginal sex vs. never had sex), age at coitarche, number of male sex partners within last year (0, 1, ≥2), cohabitation or marital experience (grouped together because of small numbers—yes/no), pregnancy (ever pregnant vs. never pregnant), parity (0, 1, ≥2 births), previous diagnosis of gynecologic problems—yes/no (including ovulation problems, ovarian cysts, uterine fibroids, endometriosis, or pelvic inflammatory disease), nonuse of contraception at coitarche, and any episodes of sexual intercourse without contraceptive use in the last year—yes/no.

Data analysis

We first used univariate statistics to describe religious characteristics. We used bivariate chi-square tests to compare religious characteristics across sociodemographic groups and SRH service use groups (used services vs. no use). We

performed multivariable logistic regression modeling to estimate relationships between each religious characteristic as independent variables and SRH service use as the outcome variable, while adjusting for sociodemographic factors. We first tested for independent effects of each religiosity variable using separate regression models, followed by combined models with religious characteristics entered together. Covariates were considered for inclusion in regression models if their p value in bivariate models was <0.25 . In final reduced multivariate regression models, we retained only those covariates that were significantly associated with the outcome ($p < 0.05$). We tested for changes in associations over time between religiosity characteristics and service use using interaction terms for survey year when needed. We also attempted to stratify results by sexual experience (ever had sexual intercourse vs. never had intercourse), by specific types of SRH service use (contraceptive, STI, and routine gynecologic examination), and by age group (adolescents vs. young adults).

We used weighted data and the *svy* series of commands in Stata 11.0 for computation of standard errors and tests of significance given the complex sampling survey design of the NSFG (Stata Corporation, College Station, TX).

Results

Description of sample

The mean age of the sample was 19 years, with 53% adolescents (15–19 years) and 47% young adults (20–24 years). White race/ethnicity accounted for over half of young women (56%); 18% identified as black, 20% identified as Hispanic, and 6% identified as other. Forty-two percent were still in secondary school, and 35% reported having had at least some college education. Over half the sample (52%) was below 200% of the federal poverty level; 25% were uninsured at some point during the previous year. Nearly two thirds of young women (63%) had experienced vaginal sexual intercourse.

Description of religious characteristics

In Table 1, we present young women's characteristics of religiosity. The majority reported an affiliation with a religious denomination (82%). Nearly half the sample identified as Protestant (46%), and of those, Baptist or Southern Baptist was the most commonly reported current denomination (16%). Nearly one third of the sample (28%) affiliated with Catholicism. Among women who affiliated with a Christian denomination, over half (52%) did not consider themselves to be a type of fundamental Christian, and 23% identified as a born again Christian.

For frequency of current religious service participation (Table 1), one third of young women (31%) reported attending services weekly or more often, and one quarter (25%) reported no service attendance in the last year. Religious service participation was greater at age 14, with over half (54%) reporting weekly or more frequent service attendance and 16% reporting no service attendance. Over one third (34%) saw a decrease in frequency of participation from age 14 to current. Finally, 41% of young women with a current affiliation deemed religion very important in their daily lives, whereas 35% considered it somewhat important.

TABLE 1. RELIGIOUS AFFILIATION AND PARTICIPATION AMONG ADOLESCENT AND YOUNG ADULT WOMEN IN THE UNITED STATES, 2002 AND 2006–2008

Characteristics of religiosity	n = 4,421 %
Current religious denomination affiliation	
None	18
Catholic	28
Protestant	
Baptist/Southern Baptist	16
Methodist/Lutheran/Presbyterian/	11
Episcopal	
Fundamentalist Protestant	5
Other Protestant	14
Other non-Christian religion	8
Fundamental Christian identification ^a	
Born again Christian	23
Charismatic	1
Evangelical	1
Fundamentalist	1
None of the above	52
Not applicable	22
Childhood/family religious affiliation	
None	11
Catholic	33
Protestant	48
Baptist/Southern Baptist	17
Methodist/Lutheran/Presbyterian/	13
Episcopal	
Fundamentalist Protestant	6
Other Protestant	12
Other non-Christian religion	8
Current religious service participation	
≥ Weekly	31
< Weekly	44
Never	25
Religious service participation at age 14 years	
≥ Weekly	54
< Weekly	30
Never	16
Importance of religion in daily life ^b	
Very	41
Somewhat	35
Not at all	6
N/A	18
Change in religious service participation from age 14 years to current	
No change	58
Decreased participation	34
Increased participation	8

Data are pooled from 2002 and 2006–2008 cycles of the National Survey of Family Growth. Results are presented as weighted percentages.

^aAsked only of those who identified a current Christian religious denomination affiliation.

^bAsked only of those who reported a religious affiliation.

N/A, not applicable.

Current religious service participation varied by religious affiliation and by nearly all demographic and social characteristics, with the exception of residence, birthplace, and mother's education level (Table 2). Fundamentalist Protestants, other non-Christian religions, and Baptist/Southern Baptists had the highest rates of weekly religious service participation ($p < 0.001$). Among Christian women, evangelicals and born again Christians had the highest rates of weekly

TABLE 2. KEY DEMOGRAPHIC AND SOCIAL CHARACTERISTICS OF ADOLESCENT AND YOUNG ADULT WOMEN IN THE UNITED STATES, 2002 AND 2006–2008, BY CURRENT RELIGIOUS SERVICE PARTICIPATION

Demographic and social characteristics	Religious service participation			p value
	≥ Weekly %	< Weekly %	Never %	
Current religious denomination affiliation				<0.001
None	5	23	72	
Catholic	29	57	14	
Protestant				
Baptist/Southern Baptist	46	44	10	
Methodist/Lutheran/Presbyterian/Episcopal	30	58	12	
Fundamentalist Protestant	61	31	8	
Other Protestant	42	44	14	
Other non-Christian religion	48	36	17	
Fundamental Christian identification ^a				<0.001
Born again Christian	57	37	6	
Charismatic	21	63	16	
Evangelical	54	41	5	
Fundamentalist	35	50	15	
None of the above	32	53	15	
Age group				<0.001
Younger adolescents (<i>n</i> =1,416)	41	37	21	
Older adolescents (<i>n</i> =910)	31	43	26	
Young adults (<i>n</i> =2,092)	29	50	22	
Race/ethnicity				<0.001
Hispanic (<i>n</i> =894)	34	45	22	
White (<i>n</i> =2476)	31	44	25	
Black (<i>n</i> =784)	42	46	12	
Other (<i>n</i> =264)	32	46	23	
Education				0.002
< High school (<i>n</i> =389)	28	42	31	
High school (<i>n</i> =608)	25	46	29	
Any college (<i>n</i> =1,559)	31	50	19	
Still in school (<i>n</i> =1,862)	38	39	22	
Residence				0.60
Urban (<i>n</i> =1,907)	35	43	22	
Suburban (<i>n</i> =1,693)	31	45	24	
Rural (<i>n</i> =818)	32	46	21	
Birthplace				0.29
U.S. (<i>n</i> =3,938)	33	44	23	
Outside the U.S. (<i>n</i> =487)	37	43	20	
Federal poverty level				0.01
>200% (<i>n</i> =2,135)	30	46	24	
<200% (<i>n</i> =2,283)	36	43	21	
Employment situation				0.04
Employed (<i>n</i> =2,414)	31	47	22	
Unemployed (<i>n</i> =232)	26	48	25	
In school (<i>n</i> =1,005)	36	43	21	
Other (<i>n</i> =767)	39	37	24	
Insurance status last year				0.008
Full coverage (<i>n</i> =3,275)	34	45	21	
Uninsured anytime (<i>n</i> =1,089)	29	44	27	
Childhood family situation				<0.001
Intact (<i>n</i> =2,472)	36	45	19	
Disrupted (<i>n</i> =1,946)	29	43	28	
Mother's education level				0.10
< High school (<i>n</i> =774)	30	46	24	
High school diploma or GED (<i>n</i> =1,349)	30	44	26	
> High school (<i>n</i> =2,272)	36	44	20	
Cohabitation or marital experience	22	47	31	<0.001
No cohabitation or marital experience	37	43	20	
Sexual intercourse experience				<0.001
Has had sex (<i>n</i> =2,779)	23	50	27	
Never had sex (<i>n</i> =1,639)	48	36	16	

Results are presented as weighted percentages. *p* values from chi-square comparisons of sociodemographic characteristics across categories of religious service participation.

^aAsked only of those who identified a current Christian denomination.

service participation ($p < 0.001$). Adolescents ($p < 0.001$), African Americans ($p < 0.001$), those still in high school ($p = 0.002$), and those below 200% of federal poverty level ($p = 0.01$), with full insurance coverage ($p = 0.008$), from an intact childhood family situation ($p < 0.001$), and with no cohabitation or marital experience ($p < 0.001$) had higher rates of weekly religious service participation than did their counterparts.

Over half of young women reporting a current religious affiliation as Catholic or Protestant (60%) reported sexual intercourse experience; those with at least some current religious participation accounted for 70% of the sexually experienced sample. Although sexual experience was less common among young women with the most frequent current religious service participation (weekly or more frequently, 23%), 50% of those with active but less than weekly participation had experienced sexual intercourse (Table 2). Eighty-five percent of young women with current religious participation reported having one or more sexual partners in the last year.

SRH service use and its relationship with religious characteristics

Over half the sample (59%) reported having used SRH services one or more times during the previous 12 months, including contraceptive (48%), gynecologic examination (47%), and STI testing/treatment (17%) services.

Table 3 describes the young women who used and did not use SRH services across religious characteristics. Young women with a current religious affiliation, women who deemed religion very important in their daily life, and women who currently participated in religious services weekly or more frequently had lower proportions of service use than their counterparts (all $p < 0.001$). Among sexually experienced young women ($n = 2,782$), proportions of SRH service use were lower for those reporting current religious service participation weekly or more frequently ($p < 0.001$) (Table 3).

In final reduced multivariable logistic regression models with each religious characteristics entered as independent variables individually (Table 4), only current religious service participation was associated with SRH service use. This finding also held in combined models, with all religiosity variables entered together. Compared to young women who currently participated in religious services weekly, those participating less than weekly were 50% more likely to have used SRH services in the last 12 months (odds ratio [OR] 1.5, confidence interval [CI] 1.3, 2.1, $p < 0.001$). Point estimates were similar and approached significance ($p = 0.07$) for women with no religious participation vs. weekly participation. Religious denomination affiliation, fundamental Christian identification, religious service participation at age 14, and importance of religion in daily life were not significant predictors of SRH service use in any models.

Positive associations between less than weekly religious participation and service use remained stable in all models,

TABLE 3. PROPORTIONS OF SEXUAL AND REPRODUCTIVE HEALTH SERVICE USE BY RELIGIOUS CHARACTERISTICS

Religious characteristics	Pooled sample (2002 and 2006–2008) n = 4,421 %			Sexually experienced only n = 2,782 %		
	Service use n = 2,587	No use n = 1,834	p value	Service use n = 2,205	No use n = 577	p value
Current religious denomination affiliation			0.002			0.43
None	61	39		77	23	
Catholic	54	46		77	23	
Protestant	59	40		81	19	
Other	41	60		78	22	
Fundamental Christian identification ^a			0.28			0.36
Born again Christian	53	47		77	23	
Charismatic	58	42		92	8	
Evangelical	44	56		68	32	
Fundamentalist	68	32		79	21	
None of the above	57	44		20	20	
Current religious participation			< 0.001			< 0.001
≥ Weekly	41	59		73	27	
< Weekly	64	36		83	17	
Never	62	38		78	23	
Importance of religion in daily life ^b			< 0.001			0.59
Very	49	51		79	21	
Somewhat	60	41		79	20	
Not at all	66	34		83	17	

Results are presented as weighted percentages and p values from chi-square comparisons between those who used sexual and reproductive health services in last 12 months and those who did not use services, across each religious characteristic.

^aAsked only of those who reported a Christian religious affiliation.

^bAsked only of those who reported a religious affiliation.

TABLE 4. ASSOCIATIONS AMONG YOUNG WOMEN'S RELIGIOUS CHARACTERISTICS
AND SEXUAL AND REPRODUCTIVE HEALTH SERVICE USE

<i>Religious characteristics^a</i>	<i>Model 1 Pooled sample (2002 and 2006–2008) (n=4,421) OR (CI) p</i>	<i>Model 2 Sexually experienced (n=2,782) OR (CI) p</i>
Current religious denomination affiliation ^b		
None	Reference	Reference
Catholic	1.0 (0.7–1.4) 0.84	1.1 (0.7–1.7) 0.63
Protestant	1.2 (0.9–1.6) 0.21	1.3 (0.9–1.9) 0.11
Other	0.6 (0.4–1.0) 0.07	1.1 (0.6–1.8) 0.84
Fundamental Christian identification ^{b,c}		
None of the above	Reference	Reference
Born again Christian	1.0 (0.7–1.3) 0.84	0.9 (0.6–1.2) 0.36
Charismatic	0.9 (0.4–2.0) 0.88	2.3 (0.5–9.6) 0.26
Evangelical	1.5 (0.6–3.6) 0.34	0.8 (0.4–1.8) 0.58
Fundamentalist	0.7 (0.2–3.0) 0.64	0.7 (0.1–3.5) 0.66
Current religious service participation ^b		
≥ Weekly	Reference	Reference
< Weekly	1.5 (1.3–2.1) <0.001	1.6 (1.2–2.2) 0.003
Never	1.3 (1.0–1.8) 0.07	1.2 (0.8–1.6) 0.43
Importance of religion in daily life ^b		
Very	Reference	Reference
Somewhat	1.1 (0.9–1.4) 0.44	1.0 (0.8–1.3) 0.96
Not at all	1.6 (0.9–2.6) 0.09	1.3 (0.7–2.4) 0.40
<i>Demographic and social characteristics</i>		
Survey year		
2002	Reference	Reference
2006–2008	0.6 (0.5–0.8) <0.001	0.7 (0.6–1.0) 0.02
Age group		
Younger adolescents (15–17 years)	Reference	Reference
Older adolescents (18–19 years)	1.5 (1.1–2.1) 0.01	1.3 (0.8–2.0) 0.25
Young adults (20–24 years)	2.1 (1.5–3.0) <0.001	1.7 (1.1–2.7) 0.02
Race/ethnicity		x
Hispanic		
Non-Hispanic white		
Non-Hispanic black		
Other		
Highest level education		
< High school	Reference	Reference
High school diploma or GED	1.5 (1.0–2.4) 0.08	1.3 (0.8–2.2) 0.29
Any college	2.1 (1.3–3.3) 0.002	2.0 (1.1–3.4) 0.02
Still in high school	1.6 (1.0–2.4) 0.03	1.1 (0.7–2.0) 0.57
Born in U.S.	Reference	Reference
Born outside U.S.	0.7 (0.5–0.9) 0.003	0.6 (0.4–0.9) 0.007
Full insurance coverage last year	Reference	Reference
Uninsured last year	0.7 (0.6–1.0) 0.02	0.7 (0.5–0.9) 0.009
Mother's education		
< High school	Reference	Reference
High school diploma or GED	1.4 (1.0–1.8) 0.03	1.4 (1.0–2.0) 0.08
> High school	1.4 (1.1–1.8) 0.02	1.4 (1.0–2.0) 0.06
Childhood family situation not intact	Reference	Reference
Intact childhood family situation	0.7 (0.6–0.9) 0.002	0.8 (0.6–1.0) 0.04
No cohabitation or marital experience	Reference	Reference
Has cohabitation or marital experience	1.3 (0.9–1.8) 0.05	1.5 (1.1–2.0) 0.008
Age at menarche (years)		
<11	Reference	Reference
11	1.0 (0.6–1.5) 0.92	0.7 (0.4–1.3) 0.24
12	0.6 (0.4–0.8) 0.002	0.6 (0.3–1.0) 0.07
13	0.6 (0.4–0.9) 0.02	0.6 (0.3–0.9) 0.02
14	0.6 (0.4–0.8) 0.002	0.5 (0.3–0.9) 0.02
>14	0.9 (0.6–1.5) 0.81	1.0 (0.6–1.7) 0.99
Never had sexual intercourse	Reference	x
Ever had sexual intercourse	2.6 (1.7–4.0) <0.001	
No sexual partners last year	Reference	Reference
1 partner	5.0 (3.3–7.4) <0.001	5.0 (3.3–7.5) <0.001
≥2 partners	4.9 (3.0–7.9) >0.001	4.9 (3.1–7.8) <0.001
No gynecologic diagnosis	Reference	Reference
Previous gynecologic diagnosis	3.8 (2.6–5.5) <0.001	2.9 (1.9–4.2) <0.001

Results are presented as odds ratios (OR) with 95% confidence intervals (CI) and *p* values from reduced multivariate logistic regression models.

^aIn combined models will all religious variables together, all point estimates stable.

^bPoint estimates of religious characteristics from separate models. Covariate point estimates from current religious service participation model but stable in all other religious characteristic models.

^cAsked only of those who identified a current Christian religious affiliation.

x, variable not included in final reduced model because not significant.

with similar point estimates in models stratified by sexual intercourse experience (Table 4). Associations were also stable across survey years (not shown), and the interaction term for survey year was not significant ($p=0.17$).

These results were also consistent in separate models for each type of SRH service: religious service participation weekly or more frequently was associated with a reduced likelihood of using contraceptive, STI, and routine gynecologic examination services (results not shown; point estimates consistent with those presented in Table 4). We were unable to stratify models by age group because of small cell sizes across sampling strata.

Discussion

In this sample, young women identifying a current religious affiliation (60%) or with active religious participation (70%) accounted for the majority of the sexually experienced participants. Regardless of sexual experience, however we found that use of SRH services was less likely among young women who reported current frequent (weekly or more often) religious service participation. Other characteristics of religiosity, including religious denomination affiliation, fundamental Christian identification, participation at age 14, and importance of religion in daily life, however, were not significantly associated with service use.

In the National Campaign to Prevent Teen Pregnancy review on religiosity and sexual behavior, 25 studies were included that examined religious service participation and sexual behavior. The most consistent finding with frequent religious attendance was its association with less permissive attitudes about sexual intercourse and later sexual debut among young females.¹⁵ Associations were also noted between more frequent religious service attendance and decreased frequency of intercourse and decreased contraceptive use, although these findings were based upon fewer studies. SRH care service use was not examined in any studies included in the review.

We found that women with infrequent religious participation were more likely to use SRH services than were weekly participants. It is unclear from our data exactly what facet of young women's current religious activity, including frequency of participation, contributes to their use or nonuse of SRH services above and beyond being sexually active. There are likely coexisting determinants of religious service participation that differentially influence SRH service use, and a large body of research points to a diversity of related factors, including socioeconomic factors, race and ethnicity, education level, age, relationship characteristics, attitudes toward contraception, among others.^{3,4,15,33,34} The Monitoring the Future Study, which provides a comprehensive dataset on religiosity of U.S. adolescents, has shown that religious participation and importance attributed to religion are strongest among females, adolescents, those with less education, and race/ethnicity minority groups, such as African Americans.^{15,34} We have shown that many of these same factors are also tied to SRH service use, with undereducated, poorer, immigrant, and the youngest women being less likely to use services.^{4,27,33} Although we have statistically controlled for many of these factors in our analysis, we likely failed to fully capture the complexity of social determinants of SRH service use.

Moreover, our findings do not permit understanding of features of religiosity that influence more general medical

beliefs and practices that perhaps extend beyond SRH to affect all medical care seeking.^{35,36} We focused primarily on contraceptive services, STI screening, and routine gynecologic services (Pap smear screening, pelvic examinations), SRH services commonly used among young women. Compared to young women with frequent religious participation, those who participated less were more likely to use all types of SRH services, including routine gynecologic services. It may be that the influence of frequent current religious participation acts discriminately against SRH services needed and commonly accessed by younger demographics. Whether associations exist between religious participation and general medical service use among adolescent and young adult women in the United States requires further study.

Social scientists have posited that religion has a tangential social control effect on reproductive behaviors, including sex, marital, and childbearing patterns, that may be stronger when the behavior has a strong social context.^{1,3,37} The act of seeking healthcare for SRH needs is in some ways a social admittance of sexual activity, especially for adolescents in the United States, who are confronted with conservative social mores around teenage sex.³⁷ In this regard, religious beliefs and practices may act as a social deterrent to seeking healthcare despite contraceptive needs and sexual risk behaviors. Alternatively, religiosity for some women may encourage using natural contraceptive methods or minimize STI risk exposures to lessen the need for SRH services. Additional research is needed to evaluate relationships between religious participation and SRH care use in different sociopolitical and cultural contexts.

Our findings, like the majority of others' examining religiosity and SRH outcomes, do not elucidate causal or temporal associations and fail to adequately capture the complexity of religiosity and its relationship with SRH service use.¹⁵ These data do not permit multidimensional measurement or examination of timing, intensity, quality, or content of religious activity. Moreover, data were based on potentially unreliable retrospective self-reports of young women, given the sensitive nature of content elicited. Self-selection and recall bias are of concern because young women with potentially religious conservative values may be uncomfortable discussing their SRH service use and sexual behaviors or may have poor recall of behaviors. Because of small subsample sizes across study strata for age groups and race/ethnicity, we could not adequately investigate differences in associations between religious characteristics and service use among these groups. Finally, our data were insufficient to test religious activity and service use among women affiliating with specific non-Christian religions, given the low number of women in this group.

Conclusions

Our results suggest that frequent current religious participation is negatively associated with SRH service use. Religiously active adolescent and young adult women who are sexually experienced may have an unmet need for SRH care and, thus, suffer greater risks for negative SRH outcomes.²⁴⁻²⁹ Our study has identified areas for future research in regard to religiosity and SRH service use, although more broad implications of our findings are unclear. Comprehensive sex education, improved evidence-based SRH clinical practices, and

policies to increase access to family planning services and contraceptive methods are public health approaches to teach decision-making skills, facilitate independent thinking about sexual values, change perceptions of sexual norms, and increase access to SRH information and care.¹ These strategies require further investigation to determine their impact on facilitating SRH care seeking among religious young women. Ultimately, use of SRH services (when needed) is one mechanism to help all women, regardless of religious characteristics, to achieve sexual and reproductive health and well-being.

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We have no conflicts of interest to disclose for this work.

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