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# Impact of Religiosity on the Sexual Risk Behaviors of Young Men who have Sex with Men

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## Abstract

Young men who have sex with men (YMSM), particularly Black YMSM, bear a disproportionate burden of new HIV infections in the U.S. Several studies support the positive and protective role of religion in health and the prevention of morbidity and mortality. However, little empirical research has been conducted looking at religion with the context of YMSM and HIV prevention. We examined the impact of religious attendance and faithfulness on sexual risk among a community-based sample of 450 YMSM in Chicago ages 16 to 20. Participants were mostly racial/ethnic minorities, i.e., Black (53.4%) and Latino (19.9%). Multivariate logistic regression indicated that faithfulness in combination with frequent formal religious attendance was associated with a decrease in reported number of unprotected anal sex acts, including unprotected receptive anal sex with male partners. These association trends were also found for the Black YMSM in our sample suggesting that religious involvement and faithfulness is a potential protective factor for the acquisition of HIV among this high-risk population.

### Keywords

HIV prevention; religiosity; sexual behavior; adolescents; young men who have sex with men

Now in its third decade, over 1 million people in the United States (U.S.) live with HIV (Center for Disease Control and Prevention [CDC], 2012b). Although present in virtually all U.S. communities, HIV incident cases are unevenly spread across demographic groups with well-documented disparities by age, gender, race/ethnicity and socioeconomic status (CDC, 2012b). HIV disproportionately affects gay men and other men who have sex with men (MSM), particularly from communities of color (CDC, 2012b). Although MSM represent 4% of the male population in the U.S., in 2010 they accounted for 78% of new HIV infections among males and 63% of all new infections (CDC, 2012a; CDC, 2013). The estimated numbers of new HIV infections was greatest among young MSM aged 13–24, and

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in particular Black young MSM (CDC 2012b; Purcell et al., 2012). In 2010, young Black MSM age 13–24 accounted 4,800 new HIV infections, more than any other age or race category of MSM (CDC, 2012a). Despite ongoing educational efforts, YMSM continue to engage in high-risk sexual behaviors placing them at risk for HIV infection (Mustanski, Newcomb, Du Bois, Garcia, & Grov, 2011). Although considerable research has been conducted on risk factors associated with HIV transmission, much less research has examined factors that may be protective in preventing HIV infection in YMSM and how such protective factors might be integrated into comprehensive prevention efforts targeting this high-risk group of young men (Mustanski et al., 2011).

## Background

### Religiosity, YMSM, and HIV Prevention

To maximize effectiveness of HIV prevention programming among YMSM, approaches should resonate with their cultural practices and the social context of their daily lives, as well as build upon existing community strengths, infrastructure and institutions (Foster, Arnold, Rebchook, & Kegeles, 2011). Religiosity and its institutionalized practice within faith-based organizations (FBO) may hold considerable promise in HIV prevention efforts targeting adolescents and young adults. Strict doctrinal interpretation by some FBO and their religious leaders have often created discomfort in openly discussing sexual topics or have created a culture of silence, stigma, and homophobia that alienate men who have sex with men and persons living with HIV (Foster et al., 2011; Francis & Liverpool, 2009). Perhaps as a result, little empirical primary HIV prevention research has been conducted in the U.S. exploring the role of religion or religious institutions among YMSM. However, as cases of HIV continue to climb among YMSM, it is clear that we need to engage communities in new ways and develop novel approaches to prevention geared toward this high-risk demographic group, including reaching out in creative ways to non-traditional health partners such FBO and religious leaders. In line with such thinking, faith leaders and religious institutions have been identified in the National HIV/AIDS Strategy as having a vital role in reducing the number of new HIV infections in YMSM by promoting non-judgmental support and by serving as trusted information resources for their communities (The White House Office of National AIDS Policy, 2010). The Center for Disease Control and Prevention have also prioritized partnering with communities of faith in addressing the HIV epidemic, recognizing that religious institutions may be uniquely positioned to intervene with youth on both individual and community levels (CDC, 2006). Given the traditional importance of religion and spirituality in the Black community and the epidemic proportions of HIV among U.S. non-Hispanic Blacks, particularly MSM, interest and attention has been specifically focused on religion and the role of the Black church in future community-based HIV prevention efforts (Boyd-Starke, Hill, Fife, & Whittington, 2011; Foster et al., 2007; Francis & Liverpool, 2009; Lightfoot et al., 2012).

### Conceptualizing the Dimensions of Religion

Religion can be defined in many ways including as an organized set of beliefs, practices and rituals to facilitate closeness to the sacred or transcendent (e.g., God, higher power, etc.) (Ellison & Levin, 1998; Seybold & Hill, 2001; Sutton & Parks, 2013). Religion often entails

membership, attendance and participation in activities taking place in churches, mosques, synagogues or other venues of worship (Ellison & Levin, 1998; Seybold & Hill, 2001; Sutton & Parks, 2013). Religion can play an important role in the daily lives of many people living in the U.S. Of the major racial/ethnic groups, Black Americans are most likely to report a formal religious affiliation (Foster et al., 2007). An estimated 88% of Black Americans report a formal religious affiliation in comparison to 86% of Latinos and 78% of non-Hispanic whites. Even a large percentage (70%) of Black Americans who report being unaffiliated with any particular religious denomination say faithfulness is somewhat or very important in their lives (Pew Forum on Religion & Public Life 2008). This strong faith and spiritual foundation for Black Americans (and Latinos as well) often translates into regular attendance at a faith-based institution according to their religious affiliation (Pew Forum on Religion & Public Life, 2008).

In conceptualizing religion, researchers rely on a variety of frameworks that distinguish public domains of religion (e.g., formal religious practice, attendance at worship services, etc.) from more private domains (e.g., importance of religion, faithfulness or personal beliefs) (Ellison & Levin, 1998; Masters, 2008; Seybold & Hill, 2001).Several studies support the positive and protective role of religion and/or faithfulness in health, healing, coping and the prevention of morbidity and mortality (Ellison & Levin, 1998; Masters, 2008; Seybold & Hill, 2001). Both public domains of religion (e.g., formal religious involvement) and private domains of religion (e.g., a personal sense of faithfulness) have been shown to be modestly associated with better health status in a variety of published studies with samples of men and women, from numerous racial/ethnic groups, in persons from a wide range of religions and among individuals at various stages of the life cycle and persons from diverse social class backgrounds (Ellison & Levin, 1998). Several studies have shown associations between both public and private domains of religiosity and a reduction in a range of adolescent risk behaviors (Cotton et al., 2006; Nonnemaker, McNeely, & Blum, 2003). Although the underlying mechanisms are not fully understood, existing literature postulates several possible explanatory mechanisms by which aspects of religious involvement or faithfulness may be associated with predict positive health outcomes. These are comprised of a variety of behavioral and psychosocial processes commonly encountered in health education theory and practice including: (1) the provision of social resources and support (George, Larson, Koenig, & McCullough, 2000; Holt & McClure, 2006), (2) the promotion of positive self-perceptions and self-esteem (Ellison, 1993; Ellison & Levin, 1998), (3) the provision of specific coping resources (i.e., responses to stress) (Pargament et al. 1990), (4) the promotion of healthy beliefs that regulate individual lifestyles and risk behaviors (Krause, Shaw, & Liang, 2011). In recent years increasing evidence has emerged regarding the role of spirituality and religion in the prevention of HIV. Several published studies suggest that for a variety of populations, religiosity is protective against risky sexual risk behavior. McCree, Wingood, DiClemente, Davies, and Harrington (2003) found that religious identification was protective against early initiation of sexual activity with a male partner among Black females. Among Black youth, Beckwith and Morrow (2005) found negative correlations between religiosity and sexual permissiveness and sexual practices; whereas Poulson, Bradshaw, Huff, Peebles, and Hilton (2008) found that religiosity was negatively correlated with risky sexual behaviors. Dowshen et al. (2011) reported that distal

or public domains of religion, specifically engagement in formal religious practice (e.g., service attendance, formal engagement in worship services) served as a protective asset among young transgender women aged 16–24 in Chicago.

### Religiosity and Sexual-Risk Behavior among YMSM

Religion has often been described in commentaries and editorials as a potential focal point for community-based HIV prevention interventions targeting communities of Black MSM, which are disproportionately affected by HIV (Millett & Peterson, 2007; Peterson & Jones, 2009). However, to-date limited research or empirical data have examined the role of either faithfulness or formal religious involvement on HIV-related sexual risk in MSM. In fact, Millet and Peterson, in a 2007 commentary on the HIV epidemic among Black MSM, called for a greater research emphasis to gain a better understanding of how constructs such as spirituality and religion may inhibit high-risk behaviors and, subsequently, to incorporate those factors into HIV prevention interventions that encourage or sustain preventive behaviors. In one qualitative study with 31 Black MSM aged 18–30 in the San Francisco-Oakland area, formal religious practice and spirituality were both centrally important in the lives of these men from early childhood, and had an impact on their sense of personal empowerment and coping abilities (Foster et al., 2011). In addition, many of these men "struggled" with tensions that often arose from being men who have sex with men in the context of and in contrast to sexual mores reflected in Christian doctrine. The authors conclude that integrating spiritual practice into HIV prevention may help programs be more culturally grounded, and they specifically suggest that targeting pastors and other church leaders through anti-stigma curricula may be a critically important component of any future religious-based HIV prevention intervention approaches for MSM.

However, despite some preliminary formative work there remains a paucity of public health research examining the significance of religion and religiosity in the lives of YMSM, and the role of each in moderating HIV-related sexual risk behavior in MSM and YMSM. In an effort to fill the gap in the existing HIV prevention literature, this study examines the impact of public and private domains of religion on sexual risk among a community-based sample of very YMSM aged 16–20 in Chicago. The main hypothesis was that, similar to other populations, religious attendance and faithfulness will be protective assets for these young men and mitigate engagement in high-risk sexual activities.

## Method

### Participants

Data for the study were collected from the baseline sample of Crew 450, an ongoing longitudinal cohort study of YMSM recruited from Chicago and the Chicagoland area beginning December 2009 (N=450). This research initiative was developed to study the prevalence, course, and predictors of a syndemic of psychosocial health issues linked to HIV among YMSM (Mustanski, Garofalo, Herrick, & Donenberg, 2007). To be eligible for the study, at the baseline interview participants had to be between ages 16 and 20, born male, and English-speaking. All participants had to have a history of sex with other men or identify as gay/bisexual, and be available for follow-up visits for 2 years. The sample was

recruited using a modified form of respondent-driven sampling that allowed for a higher proportion of the sample to be initial recruits (i.e., “seeds”). Seeds were recruited through community- and school-based outreach as well as posting flyers in community settings frequented by the target population. Participants completed an interview that consisted of both interviewer- and self-administered components as well as HIV/STI testing, with data collected over two study visits (i.e., approximately 7-days apart) each lasting approximately 2–3 hours. The interview questions included measures of individual characteristics as well as factors theorized to be related to risk and protection for HIV infection, including “syndemic” components, such as sexual risk behavior and substance use, and other psychosocial factors. The study was approved by the Institutional Review Boards (IRB) of the participating institutions. Participants were compensated a total of $70 for completion of both visits.

## Measures

**Religious attendance and faithfulness—**The measures of religious attendance and faithfulness were taken from the National Longitudinal Study of Adolescent Health, Wave II Adolescent In-Home Questionnaire. These measures have been previously used in published literature (Harris et al., 2009). Public domain of religion was measured with the item, “In the past 6 months, how often did you attend religious services?” with responses on a 5-point frequency scale (i.e., 1=“Never” to 5=“Once a week or more”); whereas faithfulness a more private domain of religion was measured with the item, “How important is religion to you?” scored on a 4-point Likert Scale (e.g., 1=Not important at all, 4=Very important).

**Sexual risk behaviors—**Items assessing engagement in high-risk sexual activities in the 6 months prior were adapted from the HIV-Risk Assessment for Sexual Partners (H-RASP) (Newcomb, Ryan, Garofalo, & Mustanski, 2014). The items administered assessed the participants’ frequency of engaging in sexual behaviors most associated with HIV infection among YMSM including unprotected receptive and insertive anal sex. Example items are, “How many times were you the top during anal sex with (insert partner #1 initials) during the past 6 months?” and, “How often did you use a condom during anal sex (where you were the top) with (insert partner #1 initials)?” The relationship status as it pertained to the sexual partner was also measured.

**Alcohol and drug use—**Items pertaining to alcohol use were adopted from among those recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and assessed the frequency of binge drinking in the 6 months prior. Items assessing the frequency of illicit drug use in the 6 months prior were taken from the AIDS Risk Behavior Assessment (ARBA) as well as the Youth Risk and Behavior Survey (YRBS). Hard drugs included cocaine, heroin, methamphetamines, opiates, depressants/downers, stimulants/uppers, psychedelics, ecstasy, GHB, ketamine, and inhalants. Items assessing marijuana use were also taken from the HIV-Risk Assessment for Sexual Partners (H-RASP) and assessed the frequency of marijuana use in the 6 months prior (Newcomb et al., 2014). An example item is, “During the past 6 months, how many times did you use marijuana?”

**HIV status—**HIV infection was determined by OraQuick/Orasure™ testing for those with unknown status and by self-report for those with known status (self-reported HIV-positive status was confirmed for 74% of self-reported cases via Orasure™, medical records or HIV-related medication prescription verification).

## Analysis

For the purposes of analysis, age (based on date of birth, calculated in years) was dichotomized into 16 to 18 and 19 to 20 years old. Race/ethnicity was categorized into Black, Latino, White, and other (i.e., categories based on the 2099 YRBS). The principal exposure of interest was religiosity, indicated by both a public (e.g. formal worship attendance) and private (e.g. faithfulness) measure. The frequency of worship service attendance was dichotomized into “less than once a month” (not attending) and “once a month or more” (attending). Faithfulness was also dichotomized into “faithful” (religion is important or fairly important) and “not faithful” (religion is unimportant or fairly unimportant). The outcomes of interest were six sexual risk behaviors in the prior 6 months, including unprotected anal sex acts, unprotected insertive anal sex acts, and unprotected receptive anal sex acts with all male and casual male partners, more specifically. Binge drinking was defined as having 5 or more drinks within a 2-hour period at least weekly during the past 6 months. Regular marijuana use was defined as at least weekly use over the past 6 months. Respondents who reported having used any hard drug(s) in the past 6 months were categorized as a hard drug user. Cases with missing data for sexual risk behaviors (n = 3; < 1%) were excluded from the analysis.

Multivariable logistic regression models were used to predict the likelihood of sexual risk behaviors by each domain of religiosity. If the outcome variable of interest was associated with either attendance or faithfulness in bivariate analyses ($p < 0.10$), it was selected to fit a multivariable logistic regression model. Due to a high correlation between worship service attendance and faithfulness, a dummy variable for religiosity was created (not attending/not faithful [reference group], attending/not faithful, not attending/faithful, and attending/faithful). All logistic regression models were adjusted for age group and race/ethnicity. Covariates, including binge drinking, regular marijuana use, and hard drug use, and HIV status were included in the final model only if associated with the outcomes of interest ($p < 0.10$). We controlled for substance use in these analyses given its potential association with both religiosity and sexual risk and thus to confound the primary relationships of interest. We also conducted sensitivity analysis for the sub-sample of Black participants to examine whether the associations held for this population at particularly high risk of HIV. Finally, we explored whether the type of religion (Protestant, Catholic, other religions, and no religion) is associated with sexual risk behaviors. Odds ratios (ORs) and 95% confidence intervals (CIs) were obtained for all logistic regression models. All analyses were performed using the SAS 9.3 (Cary, NC).

Of note, no weighting was used in these analyses. Although data collected via RDS may be inter-correlated due to the networked nature of the sample, we did not find evidence of such clustering. Intraclass correlations by recruitment chain for variables of interest, including unprotected anal intercourse (UAI), unprotected receptive anal intercourse (URAI), religious

attendance and religious faithfulness were not significant (ps≥.5) and approximately 0 in terms of strength. This is likely attributable to the larger than normal number of seeds in our sample (i.e., 38%), the dominance of short recruitment chains (i.e., only 4 chains of > 5 waves), and low to moderate homophily index values (i.e., <0.6) for key characteristics such as race/ethnicity, age, and HIV status.

## Results

### Religiosity, Race, and Denomination

As shown in Tables 1 and 2, a higher proportion of Black participants reported that they attend worship service once a month or more (36.1% Blacks) and that religion is important (70.5% Blacks), compared to any other racial/ethnic groups ($p < 0.01$). In terms of religious denomination, 46.8% of participants reported being Protestant, 14.4% Catholic, 10.2% other religions, and 28.6% denied a religious denomination. Black participants were more likely to be Protestant (68.0% Blacks; $p < 0.01$) and Latino participants were more likely to be Catholic (37.8% Latinos; $p < 0.01$), compared to any other racial/ethnic groups. Religious denomination was not significantly associated with any of the sexual risk behaviors investigated (data not shown).

### Religious Attendance, Faithfulness, Drug & Alcohol Use and HIV status

Participants who reported frequent worship service attendance (i.e. once a month or more) tended not to be regular marijuana users, compared to those who reported attending worship service less often (i.e., less than once a month; $p = 0.07$). Faithful participants reported significantly less hard drug use, compared to unfaithful participants ($p < 0.01$). Neither binge drinking nor HIV status was related to the religious attendance or faithfulness. The two religiosity indicators, worship attendance and faithfulness, were positively and significantly associated ($p < 0.01$; Table 3). Only 4.9% participants were categorized in the attending/not faithful group.

### Religious Attendance, Faithfulness, and High-Risk Sexual Activities

In multivariable logistic analysis regressing sexual risk indicators on these factors, neither binge drinking, regular marijuana use, nor hard drug use was associated with high-risk sexual behaviors; therefore, these variables were not included in the final models. As presented in Table 4, adjusted for age and race/ethnicity, those who reported both frequent worship service attendance and being faithful were less likely to report unprotected anal sex acts with a male partner (OR = 0.58; 95% CI = 0.35, 0.97) and unprotected receptive anal sex acts with a male partner (OR = 0.57; 95% CI = 0.33, 0.98), compared to those who reported less frequent worship service attendance and not being faithful. Worship service attendance was not a significant factor in relationship to sexual risk behaviors, without faithfulness (attending/not faithful vs. not attending/not faithful; Table 4). In sub-population analyses for Black participants, the association trends were consistent: attendance did not matter in sexual risk behaviors, without faithfulness (attending/not faithful vs. not attending/not faithful; age-adjusted OR of unprotected anal sex acts = 0.96 [95% CI = 0.39, 2.34], and age-adjusted OR of unprotected receptive anal sex acts = 1.17 [95% CI = 0.48, 2.86]). However, Black YMSM characterized as faithful and attending worship service once

a month or more tended to report less sexual risk behavior, compared to those who were faithful but attending worship service less than once a month (age-adjusted OR of unprotected anal sex acts = 0.70 [95% CI = 0.37, 1.30], and age-adjusted OR of unprotected receptive anal sex acts = 0.66 [95% CI = 0.34, 1.30]).

## Discussion

This is among the first studies conducted among a racially diverse sample of YMSM to empirically support the hypothesis that religious involvement and faithfulness may protect against sexual risk-taking that may lead to transmission and acquisition of HIV. Specifically for these youth, formal religious attendance (e.g. public domain) in combination with a personal sense of faithfulness (e.g. private domain), as opposed to either attendance or faithfulness alone, was shown to decrease unprotected anal sex acts with male partners, including unprotected receptive anal sex. While it is unclear from these data why both religious attendance and faithfulness was required to reduce sexual risk taking, several authors have identified potential mediators that may explain the connection between religion and positive health or behavioral outcomes. For example the combination of social resources/support and reinforcement of positive health behaviors that have been demonstrated as benefits of religious involvement/attendance (George et al., 2000; Krause et al., 2011) in combination with positive coping strategies at a personal level via faithfulness (Pargament et al., 1990), may be particularly important resources for YMSM who often experience stress related to sexual minority status. However, clearly more work will be needed in the context of HIV and YMSM. Findings remained consistent for the subpopulation of the Black YMSM in our sample. In age-adjusted analyses, the Black YMSM who reported being both faithful and attendant were more than 30% less likely to report unprotected receptive anal sex than the rest of our sample. Of note, compared to other racial/ethnic groups, the Black YMSM in our sample reported greater religious service attendance as well as religious importance in their lives. Given the alarmingly high prevalence of HIV among Black YMSM including a growing disproportion of new infections, our findings offer promise and provide further support for the consideration and development of novel interventions that involve the Black church or other religious institutions that support YMSM more broadly (Millett & Peterson, 2007; Peterson & Jones, 2009).

A review of evidence-based interventions for HIV prevention among high-risk adolescents shows that the majority of programs with evidence of effectiveness are small group-based or individual-level interventions that focus on personal attributes such as believing in yourself and committing to change; these attributes are consistent with faithfulness and the private domain of religion (Rotheram-Borus, Swendeman, & Flannery, 2009). However, no known interventions focus attention on structural or community-level involvement in this population, such as formal religious attendance, which our findings suggest may be important for helping mitigate HIV risk among YMSM. As such, these data may offer some insight into innovative prevention strategies that have not previously been conceptualized or prioritized and which might involve faith-based organizations. Wingood, Simpson-Robinson, Braxton, and Raiford (2011) describe the design of a faith-based HIV intervention using the ADAPT-ITT model and principles of community-based participatory

research that although targeting a different high-risk population (e.g. Black women) may offer insight to the development of such programs for YMSM and specifically young Black MSM. They argue that religious institutions provide access to individuals who might not otherwise be drawn to a prevention intervention and credibility, lending legitimacy to such interventions. Perhaps more importantly, they integrate values articulated by the local congregation into the intervention approach, which provides an example of how to operationalize religious values in an HIV prevention model.

One potential challenge to operationalize religious values in HIV prevention approaches for YMSM is that negative views of homosexuality and of sexual minorities are more prevalent among those with strong religious commitment (Pew Forum on Religion & Public Life, 2003) thus congregates who are perhaps in the best position to promote such initiatives, including clergy, may be unsupportive of YMSM. This may be an even greater challenge among Black congregations as Black Americans, in particular, hold more negative views of sexual minorities than either Whites or Latinos (Pew Forum on Religion & Public Life, 2003). Given the potential of religiosity as prevention reported herein, it will be important to describe such challenges as well as opportunities and strategies to incorporate them into intervention approaches.

There are several limitations to this study. Our sample of YMSM was gathered from one geographic area and therefore our findings may not generalize to YMSM from other parts of the United States. The selected measures of religion and faithfulness, while informed by prior literature on adolescent health, were somewhat limited in scope and interpretation. Additional measures examining more nuanced aspects of religious involvement or a broader concept of spirituality may better elucidate the relationships presented as part of this study. The cross-sectional design demonstrates associations but does not allow for any interpretations related to causality. The study did not include qualitative data about the experiences of religious practices and beliefs among YMSM which, given historical tension between certain religious doctrine and sexual minorities cited above, may be very different from other youth populations.

Despite these limitations, this is one of the first studies to our knowledge that provides empirical support for the notion that religion, particularly of the combination of having both public and private involvement, is associated with decreased HIV-related sexual risk for YMSM. Although some religious communities may not be fully supportive of men who have sex with men, our data support and affirm efforts by the CDC and the National HIV/AIDS Strategy to prioritize the involvement of religious institutions in HIV prevention efforts, particularly in the Black community. The finding that both public and private religious involvement was required among these youth to attenuate risk suggests that prevention efforts may need to prioritize collaboration with faith-based organizations to develop both personal and community connections to be particularly effective. Additional qualitative and quantitative research in this area, including a component of longitudinal research, is needed to better understand the relationships presented here as well as to elucidate the underlying mechanisms by which religious involvement may lead to improved health outcomes for YMSM.

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## Table 1

Frequency of Worship Service Attendance in the Past 6 Months by Participant Characteristic

| | Less Than Once a Month | | Greater Than or Equal to Once a month | |
|---|---|---|---|---|
| | n | % | n | % |
| | **319** | **70.7** | **132** | **29.3** |
| Age | | | | |
| 16–18 years | 147 | 46.1 | 61 | 46.2 |
| 19–20 years | 172 | 53.9 | 71 | 53.8 |
| Race/ethnicity | | | | |
| Black | 154 | 48.3 | 87 | 65.9** |
| Latino | 76 | 23.8 | 14 | 10.6 |
| White | 61 | 19.1 | 20 | 15.2 |
| Other | 28 | 08.8 | 11 | 08.3 |
| Binge drinking | | | | |
| Yes | 35 | 11.0 | 14 | 10.6 |
| No | 284 | 89.0 | 118 | 89.4 |
| Regular marijuana use | | | | |
| Yes | 89 | 27.9 | 26 | 19.7 |
| No | 230 | 72.1 | 106 | 80.3 |
| Hard drug use | | | | |
| Yes | 50 | 15.7 | 17 | 12.9 |
| No | 269 | 84.3 | 115 | 87.1 |
| HIV status | | | | |
| Yes | 23 | 07.2 | 11 | 08.3 |
| No | 295 | 92.8 | 121 | 91.7 |
| Unprotected anal sex acts with a male partner | | | | |
| Yes | 150 | 47.5 | 50 | 37.9 |
| No | 166 | 52.5 | 82 | 62.1 |
| Unprotected insertive anal sex acts with a male partner | | | | |
| Yes | 93 | 29.4 | 31 | 23.5 |
| No | 223 | 70.6 | 101 | 76.5 |
| Unprotected receptive anal sex acts with a male partner | | | | |
| Yes | 120 | 38.0 | 40 | 30.3 |
| No | 196 | 62.0 | 92 | 69.7 |
| Unprotected anal sex acts with a casual male partner | | | | |
| Yes | 94 | 29.8 | 35 | 26.5 |
| No | 222 | 70.2 | 97 | 73.5 |
| Unprotected insertive anal sex with a casual male partner | | | | |
| Yes | 52 | 16.5 | 20 | 15.2 |
| No | 264 | 83.5 | 112 | 84.8 |
| Unprotected receptive anal sex with a casual male partner | | | | |

| | Less Than Once a Month | | Greater Than or Equal to Once a month | |
|---|---|---|---|---|
| | **n** | **%** | **n** | **%** |
| | **319** | **70.7** | **132** | **29.3** |
| Yes | 74 | 23.4 | 28 | 21.2 |
| No | 242 | 76.6 | 104 | 78.8 |

*Note*: Three missing values for sexual risk behaviors were omitted

* $p < .05$.

** $p < .01$.

*** $p < .001$. (two-tailed tests)

## Table 2

Religious Faithfulness by Participant Characteristics

| | Religion is Unimportant or Fairly Unimportant | | Religion is Important or Fairly Important | |
|---|---|---|---|---|
| | **n** | **%** | **n** | **%** |
| | **188** | **41.7** | **263** | **58.3** |
| Age | | | | |
| 16–18 years | 92 | 48.9 | 116 | 44.1 |
| 19–20 years | 96 | 51.1 | 147 | 55.9 |
| Race/ethnicity | | | | |
| Black | 71 | 37.8 | 170 | 64.6** |
| Latino | 51 | 26.6 | 40 | 15.2 |
| White | 53 | 28.2 | 28 | 10.7 |
| Other | 14 | 07.4 | 25 | 09.5 |
| Binge drinking | | | | |
| Yes | 25 | 13.3 | 24 | 09.1 |
| No | 163 | 86.7 | 239 | 90.9 |
| Regular marijuana use | | | | |
| Yes | 47 | 25.0 | 68 | 25.9 |
| No | 141 | 75.0 | 195 | 74.1 |
| Hard drug use | | | | |
| Yes | 40 | 21.3 | 27 | 10.3** |
| No | 148 | 78.7 | 236 | 89.7 |
| HIV status | | | | |
| Yes | 10 | 05.3 | 24 | 09.2 |
| No | 178 | 94.7 | 238 | 90.8 |
| Unprotected anal sex acts with a male partner | | | | |
| Yes | 95 | 50.8 | 105 | 40.2* |
| No | 92 | 49.2 | 156 | 59.8 |
| Unprotected insertive anal sex acts with a male partner | | | | |
| Yes | 59 | 31.6 | 65 | 24.9 |
| No | 128 | 68.4 | 196 | 75.1 |
| Unprotected receptive anal sex acts with a male partner | | | | |
| Yes | 79 | 42.2 | 81 | 31.0* |
| No | 108 | 57.8 | 180 | 69.0 |
| Unprotected anal sex acts with a casual male partner | | | | |
| Yes | 58 | 31.0 | 71 | 27.2 |
| No | 129 | 69.0 | 190 | 72.8 |
| Unprotected insertive anal sex acts with a casual male partner | | | | |
| Yes | 34 | 18.2 | 38 | 14.6 |

| | Religion is Unimportant or Fairly Unimportant | | Religion is Important or Fairly Important | |
|---|---|---|---|---|
| | **n** | **%** | **n** | **%** |
| | **188** | **41.7** | **263** | **58.3** |
| No | 153 | 81.8 | 223 | 85.4 |
| Unprotected receptive anal sex acts with a casual male partner | | | | |
| Yes | 48 | 25.7 | 54 | 20.7 |
| No | 139 | 74.3 | 207 | 79.3 |

*Note*: Three missing values for sexual risk behaviors were omitted

* $p < .05$.

** $p < .01$.

*** $p < .001$. (two-tailed tests)

## Table 3

Association Between Faithfulness and Worship Service Attendance

| | Attend Less Than Once a Month | | Attend Greater Than or Equal to Once a Month | |
|---|---|---|---|---|
| | **n** | **Percentage** | **n** | **Percentage** |
| Religion is unimportant or fairly unimportant | 166 | 36.8% | 22 | 04.9% |
| Religion is important or fairly important | 153 | 33.9% | 110 | 24.4%** |

* p < .05.

** p < .01.

*** p < .001 (two-tailed tests)

## Table 4

Odds Ratios of Sexual Risk Behaviors According to Worship Service Attendance and Faithfulness

| Outcome | Unprotected anal sex acts with a male partner | | Unprotected receptive anal sex acts with a male partner | |
|---|---|---|---|---|
| | **OR** | **95% CI** | **OR** | **95% CI** |
| Age | | | | |
| 16–18 years | Reference | -- | Reference | -- |
| 19–20 years | 0.93 | 0.63, 1.36 | 1.10 | 0.74, 1.64 |
| Race | | | | |
| Black | Reference | -- | Reference | -- |
| Hispanic | 1.35 | 0.81, 2.23 | 1.38 | 0.82, 2.32 |
| White | 1.28 | 0.75, 2.18 | 1.33 | 0.77, 2.30 |
| Other | 1.17 | 0.58, 2.24 | 1.59 | 0.79, 3.24 |
| Attendance and faithfulness | | | | |
| Attending less than once a month of worship service and not faithful | Reference | -- | Reference | -- |
| Attending greater than or equal to once a month of worship service but not faithful | 1.00 | 0.41, 2.45 | 1.26 | 0.51, 3.09 |
| Attending less than once a month of worship service but faithful | 0.81 | 0.51, 1.28 | 0.76 | 0.47, 1.23 |
| Attending greater than or equal to once a month of worship service and faithful | 0.58 | 0.35, 0.97 | 0.57 | 0.33, 0.98 |

*Note*: CI = Confidence interval; OR = Odds ratio. ORs and 95% CIs were obtained from multivariable logistic regression models.