

Running Head: RELIGIOSITY AND CAMPUS SEXUAL ASSAULT

Geographical Variation in the Relationship Between Religiosity and Campus Sexual Assault:
Differences in Prevalence or Reporting?

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Authors' Note

All data used in this study are publicly available for purposes of replication. We have not received any external funding for this project and do not have any conflicts of interest.

Abstract

In this study, we use the 2014 Pew Religious Landscape Study and Clery Act institution-level data to investigate the relationship between state-level religiosity and campus sexual assault rates in the U.S. We found a strong negative correlation ($r = -0.54$, $p < 0.001$) between the reported rates of campus sexual assault and religious service attendance in the 50 U.S. states. Two possible explanations for the correlation, along with their divergent implications, are discussed: differences in reporting and differences in prevalence. In exploratory analyses, we used the 2007-2014 National Crime Victimization Survey to examine regional differences in rape incident victimization and reportage, but we could not rule out the explanation that there are genuine prevalence differences across geographical regions. We argue that, due to the significant policy issues at stake, a campus sexual assault victimization survey that includes state-level geographical data for the entire U.S. is needed.

Key Words: campus sexual assault; rape; religiosity; Clery Act; rape reportage gap; social ecology; moral community hypothesis; violence prevention

Geographical Variation in the Relationship Between Religiosity and Campus Sexual Assault: Differences in Prevalence or Reporting?

Sexual assault is a widespread social and public health problem in the U.S. (e.g., Elliott, Mok, & Briere, 2004; Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007; Krebs, Lindquist, Warner, Fisher, & Martin, 2007), and hundreds of studies have investigated its prevalence, correlates, and aftermath. Although men do experience sexual assault, the prevalence of victimization is substantially higher for women compared with men—ranging, in the following studies, from 2.4 to 6.2 times greater (Banyard, Ward, et al., 2007; Baum & Klaus, 2005; Flack et al., 2008; Krebs et al., 2007). Approximately 18% to 20% of women in the United States experience an attempted or completed rape during their lifetimes (Breiding et al., 2014; Kilpatrick et al., 2007; Tjaden & Thoennes, 2000). Campus sexual assault is of particular concern to a variety of stakeholders, including college administrators, parents, students, and researchers, especially in light of prevalence research documenting that between 11.5% (Kilpatrick et al., 2007) and 19% (Krebs et al., 2007) of female students are sexually assaulted during their college years.¹

Meanwhile, religion plays a substantial role in the lives of over 160 million Americans (Pew Research Center, 2015), with more than half (53%) of Americans claiming that religion is “very important” in their lives (Pew Research Center, 2015). Sociologists and psychologists of religion have long documented the many positive correlations between religiosity, well-being, and prosocial behaviors (e.g., Diener, Tay, & Myers, 2011; Donahue & Benson, 1995; Monsma, 2007). In the past, there was significant debate regarding the relationship between religion and crime, although there is currently a general consensus that a negative correlation exists (e.g., Baier & Wright, 2001; Johnson & Jang, 2012). However, the possible relationship between sexual assault and religion remains understudied.

In this study, we examine the associations between religiosity and campus sexual assault rates in the U.S. In addition, we explore whether these correlations reflect geographical differences in the reporting of sexual assault or differences in the prevalence of the behaviors themselves. This research is important because meso-level, social ecology factors—specifically, aggregate religious involvement—may be significant, yet frequently overlooked, components in the effort to reduce sexual assault. Moreover, the implications of this research highlight the crucial roles that social workers and other helping professionals may play with regard to the prevention and reporting of campus sexual assault.

Theoretical and Empirical Background

Campus Sexual Assault: Correlates and Explanations

Explanations regarding the high rate of sexual assault among college students span the micro- to macro-level continuum, with factors at the various levels impacting one another. At the micro-level, a substantial body of research has examined individual characteristics and behaviors. Among college women, experiencing sexual assault is positively correlated with alcohol use (Abbey, Ross, McDuffie, & McAuslan, 1996; Krebs et al., 2007; Lawyer, Resnick, Bakanic, Burkett, & Kilpatrick, 2010), higher numbers of dating partners and more frequent consensual sexual experiences (Abbey et al., 1996; Krebs et al., 2007), low sexual assertiveness skills (Kelley, Orchowski, & Gidycz, 2016), a prior history of sexual victimization (Katz, May,

Sörensen, & DelTosta, 2010; Krebs et al., 2007), and having a lower grade point average (Gardella et al., 2015). Among college men, perpetrating sexual assault is positively correlated with having early and frequent sexual experiences (Abbey, McAuslan, & Ross, 1998; Malamuth, Sockloskie, Koss, & Tanaka, 1991), “rape supportive beliefs,” frequent and heavy alcohol consumption, and frequent misperception of women’s sexual intent (Abbey et al., 1998).

At the meso-level, researchers have investigated campus characteristics, high-risk settings, and community characteristics. Regarding campus characteristics, campus crime rates, in general, are positively associated with such factors as higher levels of student enrollment, students residing on-campus, and full-time students (Fernandez & Lizotte, 1995). Armstrong, Hamilton, and Sweeney (2006) argued that university practices (e.g., enforcing strict penalties for drinking in residence halls) and characteristics (e.g., inadequate amounts of comfortable public space) impact campus sexual assault. Other researchers have examined specific contexts, such as partying-oriented fraternities, that pose greater risk of sexual assault to female students (Boswell & Spade, 1996; Humphrey & Kahn, 2000; Martin & Hummer, 1989). Regarding community characteristics, Fernandez and Lizotte (1995) examined 530 colleges and communities, and they concluded that college and community crime rates were largely unrelated.

At the macro-level, there are three key theoretical emphases in the violence against women literature that we will highlight here. First, the contemporary U.S. remains a patriarchal society—with pervasive, structural systems of inequality that systematically privilege men and disadvantage women (Dobash & Dobash, 1979; Hunnicutt, 2009). Second, both women and men are bombarded with gendered messages—from such sources as television shows, movies, music, commercials, internet sites, social media, and video games—regarding male power, authority, aggressiveness, and sexual dominance, as well as female objectification, sexualization, passiveness, and subservience (e.g., Coltrane & Adams, 1997; Dill & Thill, 2007; Stubbs-Richardson, Rader, & Cosby, 2018). And finally, the interactions of women and men at the micro level are substantially impacted by larger social structures, social institutions, and social norms that affirm, reinforce, and reify men’s power, authority, and control over women (Adams-Curtis & Forbes, 2004; Heise, 1998).

One example of an important line of research that connects these larger theoretical principles to the perpetration of sexual assault is the research on rape culture. “Rape culture” refers to a set of beliefs and values that creates a cultural environment that promotes rape (Buchwald, Fletcher, & Roth, 1993). Rape culture reduces the likelihood that bystanders will intervene in incidents of sexual assault, provides perpetrators with culturally-legitimated excuses for their behavior, makes it more difficult to hold offenders accountable, decreases the likelihood that survivors will recognize that they were criminally victimized, increases the likelihood that police officers will question a survivor’s credibility, and shifts the responsibility and blame from perpetrators to victims (Burt, 1980; Lonsway & Fitzgerald, 1994; O’Neal, 2019).

It is noteworthy that most studies on campus sexual assault overlook the important differences in campus sexual assault rates between U.S. states. In addition, there is a dearth of research regarding meso- to macro-level variables that are a part of the specific social ecology or social environment in which those college campuses—with varying levels of sexual assault—are located. Our study begins to address this important gap in the literature.

Religiosity and Crime

Researchers have long been interested in the effects of religiosity upon human behavior and well-being. Religious involvement is positively associated with such prosocial behaviors as

charitable giving and volunteering (Donahue & Benson, 1995; Hodgkinson & Weitzman, 1996; Monsma, 2007), as well as with subjective well-being (Diener et al., 2011), life satisfaction (Hackney & Sanders, 2003; Ozmen, Brelsford, & Danieau, 2018), and physical and mental health (George, Larson, Koenig, & McCullough, 2000). It is negatively associated with depression and anxiety (Koenig & Larson, 2001; Steffen, Masters, & Baldwin, 2017), positively associated with life optimism (Ozmen et al., 2018), and appears to have stress-buffering effects (Lechner & Leopold, 2015).

In the past, there was substantial debate regarding the relationship between religiosity and crime. In their frequently cited study, Hirschi and Stark (1969) found no association between religious beliefs and adolescent delinquency. Over the next three decades, researchers reported a range of findings—from little or no relationship (e.g., Ellis & Thompson, 1989) to a strong relationship (e.g., Chadwick & Top, 1993)—between religiosity and crime. In 2001, Baier and Wright conducted a meta-analysis with 60 studies and found that religion (whether operationalized using behavioral or attitudinal measures) had a moderate, deterrent effect upon individuals' criminal behavior. Religiosity is associated with decreased delinquency (Baier & Wright, 2001), substance abuse (Jang, 2018; Yeung, Chan, & Lee, 2009), financial crimes (Jang, 2018), and violent offending (Jang, 2018; Salas-Wright, Vaughn, & Maynard, 2014). Religiosity is also an indirect predictor of violent victimization, such that individuals with high religiosity experience lower levels of victimization (Schreck, Burek, & Clark-Miller, 2007). In the most comprehensive review to date, Johnson and Jang (2012) reviewed 270 studies published between 1944 and 2010 and found that 90% of the studies found a negative correlation between religious involvement and crime. And, in a rare community-level analysis, Lee (2006) documented that counties with more churches per capita had lower rates of rural violence.

Less is known regarding the relationship between religiosity and intimate partner violence (IPV). Some religious beliefs (e.g., regarding marriage, divorce, and gender roles), as well as the responses that battered women receive from clergy, family members, friends, and their faith community, have been shown to serve as a barrier to women's help-seeking (Beaulaurier, Seff, Newman, & Dunlop, 2007; Popescu et al., 2009; Pyles, 2007). However, several scholars have found religion's effects upon abused women to be mixed. For example, Beaulaurier et al. (2007) found that spiritual beliefs gave some women the strength to leave their abusive spouses, while Pyles (2007) found that religious institutions and networks can be important sources of support.

Regarding the relationship between religiosity and IPV prevalence, Jung and Olson's (2017), cross-national study of 55,523 people in 49 countries found an inverse relationship between individual religiosity and the acceptability of wife-beating. Within the U.S., Ellison, Anderson, and colleagues have repeatedly documented that weekly attendance at religious services is strongly and inversely associated with domestic violence (DV) perpetration among both men and women (Ellison & Anderson, 2001; Ellison, Bartkowski, & Anderson, 1999; Ellison, Trinitapoli, Anderson, & Johnson, 2007). Similarly, the frequency of religious service attendance is negatively correlated with DV victimization (Ellison et al., 2007; Wang, Horne, Levitt, & Klesges, 2009). In contrast, although Cunradi, Caetano, and Schafer (2002) found that weekly attendance at religious services was associated with lower rates of IPV perpetration among men, as well as lower victimization among both men and women, these associations appeared to be mediated by alcohol problems in their multivariate models. In short, religious involvement appears to have a protective effect against experiencing or perpetrating domestic violence.

Currently, the question of whether religiosity impacts sexual assault prevalence or reporting is understudied. Vanderwoerd and Cheng (2017) found lower, self-reported incidence rates of sexual violence at eight private, Christian colleges in Canada compared with the rates reported on secular campuses in other studies with similar methodologies. Despite increasing attention to the relationship between religiosity and IPV, the current study is the first to specifically investigate the relationship between religiosity and sexual assault in the U.S.

The Clery Act

In 1998, the U.S. Congress passed the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (“Clery Act”), which superseded the original Crime Awareness and Campus Security Act of 1990. The Clery Act requires federally funded institutions of higher education to report incidents of specific categories of campus crime, distribute an annual security report, and publish their policies regarding crime prevention programs and post-incident procedures (20 U.S.C. § 1092(f), 1990). These data are submitted to the Department of Education and are publicly available. The Department of Education has the authority to audit tertiary institutions’ crime statistics and to levy fines against non-compliant institutions (Department of Education, 2016). The Clery Act has been amended several times, most recently via the Violence Against Women Reauthorization Act of 2013. The latest amendments, effective as of July 1, 2015, included the expansion of reported crimes to include dating violence, domestic violence, and stalking (Department of Education, 2014). Thus, in its current form, the Clery Act requires colleges and universities to report crimes that occur on-campus in the following categories: murder, manslaughter, rape, fondling, incest, statutory rape, robbery, aggravated assault, burglary, motor vehicle theft, arson, hate crimes, dating violence, domestic violence, and stalking (Department of Education, 2016).

The Present Study

In this study, we explored the following research questions: 1) What is the relationship between state-level religiosity and campus sexual assault rates in the U.S.? 2) Does this relationship vary by denominational affiliation or lack of religious affiliation? 3) What is the relationship between state-level religiosity and other categories of campus crime? and 4) If the hypothesized negative correlation between state-level religiosity and campus sexual assault rates exists, is the correlation due to geographical differences in reporting sexual assault or differences in the prevalence of the behaviors themselves?

We tested three hypotheses: 1) States’ religious service attendance rates will be negatively correlated with campus sexual assault rates; 2) There will be a positive correlation between states with higher percentages of nonreligious persons and campus sexual assault rates; and 3) States’ religious service attendance rates will be negatively correlated with non-sexual campus crime rates. Due to the lack of previous research in this area, we did not have any hypotheses regarding possible denominational differences, potential geographical variation in the rape reportage gap (i.e., the difference between the number of attempted or completed rapes self-reported by the National Crime Victimization Survey sample and the incidents those respondents reported to the police), or the relationship between regional religious service attendance and the regional rape reportage gap. We use the terms “religiosity” and “religious involvement” interchangeably to refer to a common indicator of religious engagement: the frequency of

religious service attendance.

Method

To explore the relationship between religiosity and campus sexual assault rates, we analyzed data from two sources: the Pew Religious Landscape Study (RLS; Pew Research Center, 2015) and Clery Act campus crime data (Department of Education, Office of Postsecondary Education, 2015). Since the most recent RLS data are from 2014, we chose to use campus crime data from that same year.

The measure of religiosity used in this article is the rate of religious service attendance. The RLS gathered religious service attendance data through the question: “Aside from weddings and funerals how often do you attend religious services ... more than once a week, once a week, once or twice a month, a few times a year, seldom or never?” (Pew Research Center, 2015, p. 132). Each state’s attendance rate is the combination of the two most frequent attendance categories (“more than once a week” and “once a week”); thus, religious service attendance in this study should be considered to be weekly attendance. It is important to note that this variable describes religious service attendance in general, regardless of religious affiliation.

The Pew Religious Landscape Study (N = 35,071) is a random-digit dialing telephone survey designed “to obtain a minimum of 300 interviews in each state and the District of Columbia” (Pew Research Center, 2015, p. 6). The 2014 RLS data collection process involved 561,752 landline telephone numbers and 377,101 cell phone numbers. The response rate was 11.1% for the landline sample and 10.2% for the cell phone sample (Pew Research Center, 2015, p. 97). The RLS data have been weighted to make the survey sample reflect the wider population, as shown in the Census Bureau’s American Community Survey (Pew Research Center, 2015). Our analyses regarding religious affiliation involved the four large categories identified by the RLS: Evangelical Protestants, Mainline Protestants, Catholics, and individuals who reported no affiliation (i.e., religious “nones”).^{2, 3}

In order to calculate campus sexual assault rates by state, we downloaded the institution-level crime incident files, based upon Clery Act data, from the U.S. Department of Education. The raw data included records for 11,593 campuses, which included nearly the entire enrollment of students in U.S. tertiary institutions (N = 20,350,430). However, these records included institutions that could not be used for the computation of state-level crime rates as follows: a) institutions in overseas U.S. dependencies and territories, b) institutions with campuses outside of the U.S.; and c) institutions with campuses in more than one state. A slightly smaller enrollment base (N = 18,321,367) remained after these institutions were excluded. Crimes were summed for all campuses for a given institution and then attached to the record of the main campus before the calculation of state campus crime rates.

Crime rates per state were calculated by summing the total number of crimes in each category for each institution and then for each state. Next, we totaled the number of students enrolled within each state. The crime rates we present show the number of crimes in each state per 100,000 students enrolled in that state. To the extent that colleges and universities comply with the Clery Act, the campus crime data files are a census of incidents rather than a sample. Therefore, no weighting variables were applied to the campus crime counts.

As of 2014, the Clery Act required colleges and universities to report three types of sexual assault: rape, fondling, and incest. Incest was quite rare in the Clery Act data (e.g., only two cases in 2014), so we omitted this category. The Office of Postsecondary Education’s

campus security handbook (2016) defines rape as “the penetration, no matter how slight, of the vagina or anus, with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim” (Department of Education, 2016, p. 3-6). Fondling is defined as: “the touching of the private body parts of another person for the purpose of sexual gratification, without the consent of the victim, including instances where the victim is incapable of giving consent because of his/her age or because of his/her temporary or permanent mental incapacity” (Department of Education, 2016, p. 3-6).

Since our preliminary findings indicated a negative correlation between religiosity and campus sexual assault, we next conducted exploratory analyses to determine if the association was due to geographical differences in reporting sexual assault or differences in the prevalence of the behaviors themselves. These analyses also involved data from two sources: the National Crime Victimization Survey (Bureau of Justice Statistics, 2008) and the first- and second-waves of the Pew RLS (Pew Forum on Religion and Public Life, 2008; Pew Research Center, 2015).

One of the main functions of the NCVS is to identify crime incidents that go unreported to law enforcement. Therefore, the NCVS’s sampling strategy uses a stratified, multi-stage cluster design that aims to represent residential addresses. In 2014, “90,380 households and 158,090 persons age 12 or older were interviewed,” which represents a response rate of 84% for households and 87% for eligible individuals (Truman & Langton, 2015, p. 12).

The NCVS contains data on both attempted and completed rape incidents. For each incident, respondents are asked if they made a report to the police. The NCVS does not report data at the level of the 50 states; rather, its smallest unit describes the four census regions of the U.S. The NCVS data came from a multi-year data file containing rape incidents for the years 1992-2014 (Bureau of Justice Statistics, 2016). In order to cover the same years as the Pew RLS, we examined NCVS data from 2007-2014, which included 252 rape incidents. Since the region variable was attached to the household record of the NCVS questionnaire, we used a form of the NCVS household weighting variable for our analyses (see below).

We also analyzed a subset of the 2007-2014 NCVS cases ($N = 49$) in which the respondents identified themselves as students. However, the results of this analysis should be interpreted cautiously, due to the small number of cases and the fact that the NCVS student rape incident data are not limited to incidents that occurred on-campus.

To calculate religious service attendance rates, the average of each state’s 2007 and 2014 rates was computed. These rates were then aggregated to the level of the census region. The data collection method for the 2007 RLS (Pew Forum on Religion and Public Life, 2008) also used random-digit dialing and achieved a very similar number of total responses ($N = 35,009$) as compared with the 2014 RLS.

Data Analysis

In order to explore the relationships between state-level religiosity and campus crime (including sexual assault rates), we calculated the campus crime rates (in six categories) per state, as well as Pearson correlation coefficients. Subsequently, to investigate if the association between religiosity and sexual assault was due to geographical differences in reporting sexual assault or differences in the prevalence of the behaviors themselves, we conducted an exploratory regional analysis of attempted and completed rape reporting. Specifically, we examined a cross-tabulation of rape reportage and census region. We next used Chi-square statistics to analyze the association between census regions and rape reportage. Finally, we

performed logistic regressions to calculate the effect of regional religious service attendance on the probability of rape reportage.

Results

With regard to our first research question, Table 1 shows, for each state, religious service attendance rates, campus rape rates, and fondling rates. Pearson correlation coefficients were calculated to show the strength of association between religious service attendance and the rates of sexual assault. Confirming our hypothesis, there were significant negative correlations between religious service attendance and the campus rape rate ($r = -0.535$, $p < 0.001$) and campus fondling rate ($r = -0.554$, $p < 0.001$).

Table 1: Sexual Assault and Religious Service Attendance Rates by State

(1) State	(2) Religious Service Attendance Rate	(3) Campus Rape Rate (incidents per 100,000 enrollees)	(4) Campus Fondling Rate (incidents per 100,000 enrollees)
Alabama	58	18.8	6.5
Alaska	31	16.1	22.5
Arizona	39	4.0	4.7
Arkansas	53	27.3	7.9
California	35	10.5	8.2
Colorado	35	24.7	12.2
Connecticut	32	76.5	26.3
Delaware	38	25.3	6.3
District of Columbia	36	110.1	35.4
Florida	40	9.4	2.8
Georgia	51	23.3	9.1
Hawaii	31	15.2	17.9
Idaho	41	16.6	5.0
Illinois	42	19.2	6.8
Indiana	44	32.5	18.8
Iowa	45	25.3	34.1
Kansas	46	19.0	13.8
Kentucky	48	14.9	11.1
Louisiana	56	8.1	2.1
Maine	27	81.5	25.2
Maryland	40	23.2	14.8
Massachusetts	29	53.2	24.6
Michigan	40	20.1	12.6
Minnesota	44	18.3	12.0
Mississippi	63	11.3	0.0
Missouri	44	20.5	9.5

Montana	36	32.4	11.4
Nebraska	45	17.6	13.9
Nevada	30	8.2	1.6
New Hampshire	26	129.5	44.2
New Jersey	38	19.1	10.9
New Mexico	43	17.2	8.3
New York	35	20.1	14.3
North Carolina	53	28.3	17.9
North Dakota	49	15.6	5.8
Ohio	41	24.4	14.0
Oklahoma	49	12.8	8.1
Oregon	31	33.5	22.9
Pennsylvania	42	38.5	21.6
Rhode Island	32	83.7	21.2
South Carolina	56	23.7	7.8
South Dakota	47	14.9	5.6
Tennessee	54	24.4	10.9
Texas	50	10.8	5.5
Utah	56	12.0	6.5
Vermont	23	147.2	36.0
Virginia	44	29.5	10.9
Washington	32	14.5	4.5
West Virginia	42	29.3	5.9
Wisconsin	40	30.6	15.3
Wyoming	34	39.4	14.1
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Correlation with Religious Service Attendance (Pearson correlation coefficient)		$r = -0.535$	$r = -0.554$
Significance		$p = 0.00005$	$p = 0.00002$

Regarding our second and third research questions, Table 2 shows a correlation matrix for a set of state-level religion variables and campus crime rates. Certain crimes reportable under the Clery Act had zero values for most of the states and have thus been omitted from the table. These crimes included murder, manslaughter, incest, statutory rape, and arson.⁴ Contrary to our hypothesis, there was little to no correlation between religiosity and non-sexual campus crime rates; the most significant correlations ($p < 0.01$) all described types of sexual assault. The proportion of people in each state who are Evangelical Protestant was negatively correlated with the rape rate and the fondling rate. The same correlations for Mainline Protestants and Catholics were not significant. As hypothesized, the proportion of people in each state reporting no religious affiliation was positively correlated with the rape rate and the fondling rate.

Table 2: Correlation of State Campus Crime Rates and Religion Variables
 Pearson Correlation Coefficient
 (significance)

	Religious Service Attendance	Catholic	Evangelical Protestant	Mainline Protestant	Unaffiliated (religious "nones")
Rape	-.535** (.00005)	0.268 (.05699)	-.429** (.00167)	0.041 (.77573)	.482** (.00034)
Fondling	-.554** (.00002)	0.26010 (.06529)	-.412** (.00268)	0.11729 (.41239)	.523** (.00008)
Robbery	0.132 (.35483)	-0.145 (.31157)	-0.012 (.93140)	-.283* (.04408)	-0.138 (.33363)
Assault	0.059 (.68250)	0.243 (.08622)	-0.145 (.30972)	-0.017 (.90390)	-0.098 (.49472)
Burglary	0.102 (.47594)	-0.153 (.28449)	0.056 (.69799)	-0.013 (.92716)	-0.086 (.54804)
Vehicle Theft	-0.005 (.97497)	-0.074 (.60575)	0.105 (.46457)	-0.228 (.10812)	0.017 (.90845)

N = 51 for all cells

* $p < 0.05$ (2-tailed), ** $p < 0.01$ (2-tailed)

These correlations raise the following question: Is a lower proportion of sexual assault incidents reported to the police in geographical areas with higher levels of religious service attendance? In other words, as we query in our fourth research question, is the negative correlation between religiosity and campus sexual assault rates due to geographical differences in reporting sexual assault or differences in the prevalence of the behaviors themselves?

Using NCVS data, we next conducted exploratory analyses to investigate possible regional differences in the proportion of rapes that are reported to the police (Bureau of Justice Statistics, 2016) and compared them to regional religious service attendance rates (Pew Forum on Religion and Public Life, 2008; Pew Research Center, 2015). The NCVS household weighting variables are designed to gross up from the sample size to the national population. When these population weights were applied to the data, the coefficients of the logistic regression were significant at $p < 0.001$ due to this artificial inflation of the number of cases. To address this problem, we used a weighting method described by Hu et al. (2007): population weights scaled to preserve the original sample size. In this study, we refer to this method, which alters the proportionate effect of different cases without inflating the overall sample size, as proportional household weights.

Table 3 shows the religious service attendance and rape incident reportage (to the police) for the 2007-2014 subset of NCVS cases broken down by census region.⁵ We also examined the student-only subset of NCVS cases (table not shown), although the results should be interpreted with caution. There is considerable regional variation in the proportion of rape incidents reported to the police. However, the census region with the highest religious service attendance rate (i.e., the South) also has the highest rape incident reportage rate (47.1% among the general population,

63.2% among students). Likewise, the census region with the lowest religious service attendance rate (i.e., the Northeast) also has the lowest rape incident reportage rate (7.7% among the general population, 10.5% among students).

Table 3: Religious Service Attendance and Rape Incident Reportage by Census Region

Census Region	Weekly Religious Service Attenders Mean of 2007 & 2014 (% of Population)	Attempted and Completed Rape Incidents Reported to Police 2007-2014 (% of Incidents)
Northeast	30.4%	7.7%
Midwest	42.4%	18.3%
South	47.4%	47.1%
West	35.1%	26.9%

Sources: Pew Forum on Religion and Public Life (2008), Pew Research Center (2015), and Bureau of Justice Statistics (2016). Note: NCVS rape reportage using proportional household weights.

We then computed the Chi-square statistic for a cross-tabulation of census region by police reportage for all rape incidents among the general population (table not shown). This result was statistically significant ($\chi^2 = 21.360$, 3 df, $p < 0.001$). With regard to the student-only subset, we combined the two regions with the lowest rape reportage rate in the general population (i.e., the Northeast and West), in order to satisfy the expected cell count requirements for the Chi-square procedure (table not shown). The result was statistically significant ($\chi^2 = 9.921$, 2 df, $p < 0.01$).

Tables 4 and 5 show the results of a binary logistic regression where the value one represents a police report for a given incident of attempted or completed rape, while the value zero represents all other cases. Table 4 shows an analysis containing all cases in the NCVS file from 2007-2014 ($N = 252$). The result is a significant positive coefficient of 7.056 ($p = 0.001$) for religious service attendance. Table 5 shows the same logistic regression analysis using the student-only subset ($N = 49$). The religious service attendance coefficient of 10.949 is still significant ($p = 0.028$) despite the restriction in the number of available cases.

Table 4: Logistic Regression – All Rape Incidents, Proportional Household Weights

Dependent Variable: Rape Reportage (Rape Incident Reported to Police = 1)
Independent Variable: Regional Religious Service Attendance (% of Population)

	Odds Ratio	Sig.
Regional Religious Attendance (RLS)	7.056	0.001
Constant	-3.207	0.000

N = 252

Table 5: Logistic Regression – All Rape Incidents, Proportional Household Weights – Student Subset Only

	Odds Ratio	Sig.
Regional Religious Attendance (RLS)	10.949	0.028
Constant	-4.912	0.020

N = 49

In short, the logistic regression results do not provide any support for a negative association between religious service attendance and rape reportage. Rather, these data suggest that there is a positive association between religious service attendance and the probability that an attempted or completed rape will be reported to the police. However, it is important to reiterate that the NCVS analyses are exploratory, given the lack of state-specific geographical information and the small number of student assault incidents in the dataset.

Discussion

The purpose of this study was to investigate the relationship between religiosity and campus sexual assault rates in the U.S. First, our hypothesis that states' religious service attendance rates would be negatively correlated with campus sexual assault rates was confirmed. We will discuss two possible explanations for this finding—and their vastly different implications—below. Second, our hypothesis that there would be a positive correlation between states with higher percentages of nonreligious persons (i.e., religious “nones”) and campus sexual assault rates was also confirmed. And third, our hypothesis that states' religious service attendance rates would be negatively correlated with non-sexual campus crime rates (i.e., with burglary, robbery, aggravated assault, and vehicle theft) was not supported.

The lack of a correlation between states' religious service attendance rates and other, non-sexual campus crime rates is noteworthy. One potential explanation is that, among the six crime types examined in this study, rape and fondling may be the only crimes in which the majority of perpetrators are other students. As several scholars have documented (e.g., Fisher, Cullen, & Turner, 2000), approximately 90% of campus sexual assault is perpetrated by an acquaintance of the victim. Perhaps, to the degree that religiosity in the social environment increases social control over individuals, this effect is lessened for crimes perpetrated against strangers or personal belongings. Further research is needed to examine this unexpected finding.

Geographical Variation in Campus Sexual Assault: Differences in Prevalence or Reporting?

As referenced earlier, the significant correlations between campus sexual assault and religiosity have two broad categories of explanation. The first is that the difference in campus sexual assault rates is due to less *reporting* of campus sexual assault incidents—perhaps due to these campuses being located in more socially conservative areas of the country, where there might be more victim-blaming and stigma associated with experiencing sexual assault or suppression of reports by campus administrators. The second explanation is that the difference in campus sexual assault rates is due to differences in the *prevalence* of these behaviors across

states, with less campus sexual assault occurring in states with higher levels of religious service attendance.

In our exploratory analyses, we were only able to indirectly examine these two competing explanations. We found that there were statistically significant regional differences in the rape incident reporting rate to the police. Moreover, we found that, at the level of U.S. census regions, there was a statistically significant, positive association between religious service attendance and the probability of rape incident reportage—both among the total NCVS sample and among the student-only subset.

The results of our analyses of the relationship between the religiosity of census regions in the U.S. and the rape incident reportage rates of the total and student-only NCVS samples prevent us from ruling out the prevalence explanation. However, the NCVS analyses should be viewed as exploratory, not definitive, in nature. This ambiguity highlights the dearth of student sexual victimization surveys that include geographical data, even among several recent, prominent surveys of sexual violence. For example, the National Intimate Partner and Sexual Violence Survey (Breiding et al., 2014) does not ask respondents whether or not they are current students or if a particular assault took place on-campus. The Campus Climate Survey on Sexual Assault and Sexual Misconduct (Cantor et al., 2015) obtained respondents from only 27 institutions of higher education, thus providing data that are too highly clustered to provide regional rates of victimization or reportage. Similarly, the Campus Climate Survey Validation Study (Krebs, Lindquist, Berzofsky, Shook-Sa, & Peterson, 2016) included data from only nine campuses and its authors state that it was not intended to be nationally representative. In order to definitively answer the prevalence versus reporting question, a new, nationally representative survey is needed that combines college student sexual victimization prevalence and reporting data with state-level geographical data.

How Could State-Level Religiosity Impact Campus Sexual Assault Rates?

If it is possible that the geographical variations in campus sexual assault are due to differences in prevalence, then we must consider the possible factors involved. One explanation is that states with higher levels of religiosity may have college campuses in which “partying” culture is less widespread. This would involve decreased levels of alcohol use, drug use, casual sex, and “hook-up” culture. A substantial body of research links higher levels of campus sexual assault with individuals’ alcohol use, drug use, and having early and frequent consensual sexual experiences (Abbey et al., 1998; Lawyer et al., 2010; Malamuth et al., 1991). Future research might fruitfully examine the relationships between religiosity, drug and alcohol use, and party culture among college students.

An alternate explanation is that religiosity affects not only those who directly engage in it, but also the broader social environment. This sociological concept is consistent with Rodney Stark and colleagues’ (Stark, 1996; Stark, Kent, & Doyle, 1982) moral community hypothesis, which draws upon the work of Émile Durkheim (Durkheim, 1912). According to this theory, religiosity is not merely an individual characteristic, but is also a group attribute. As such, religiosity must be understood as occurring within a social context. For example, Regnerus (2003) found that delinquency, even among nonreligious adolescents, was reduced in counties with a higher proportion of conservative Protestants. Similarly, Lee (2006) found a negative correlation between the number of churches, per capita, in a county and the rate of violent crime in rural areas. Prior research thus provides a conceptual framework for explaining how state-

level religiosity may impact campus sexual assault, even among individuals who are not themselves religious. Further research may fruitfully clarify the relationship between the social ecology of a state and its campus sexual assault rate.

Implications

The substantial geographical variations regarding campus sexual assault found in this study are important regardless of whether they are due to differences in campus sexual assault prevalence or reporting. However, these two explanations lead to vastly different implications.

If the geographical variations in campus sexual assault are the result of reporting differences between various states and regions of the country, then there are several important implications. First, enhanced efforts are needed on college campuses, especially in more religious areas of the country, to reduce the stigma and victim-blaming often associated with sexual assault victimization, provide supportive services to survivors, and inform the student body regarding the procedures for, benefits of, and protections available to sexual assault survivors reporting an assault. Social workers could play an important role in such efforts, and these measures may reduce the self-suppression of reporting.

Second, if sexual assault reporting is being suppressed by college administrators, then the institutional penalties delineated in the Clery Act need to be applied or, potentially, increased. According to the Clery Act, the U.S. Department of Education can issue a civil fine of up to \$35,000 per violation for misrepresenting or failing to report campus crime data (Department of Education, 2016, p. 1-11). Moreover, in light of Yung's (2015) research demonstrating that universities being audited for Clery Act violations reported 44% more sexual assaults during the audit period, only to have their post-audit reporting decrease to the level of their pre-audit reporting, higher regulatory scrutiny is clearly warranted. Perhaps randomized audits of all institutions of higher education might be one part of the solution.

Finally, if the religiosity of a geographical area negatively impacts sexual assault reporting, then religious institutions should take a more active role in combatting rape culture and rape-supportive beliefs. This includes efforts to reduce problematic gender ideologies and stereotypes, such as violent and domineering masculinity and passive and subservient femininity. Religious institutions should also seek to reduce the stigmatization of sexual assault survivors, which may include informational campaigns aimed at all members, providing resources for and referrals to survivors of sexual violence, and providing educational programs for youth regarding rape myths and sexual assault. Social workers employed in faith-based settings could make critical contributions in these areas.

Alternately, if the geographical variations in campus sexual assault are the result of prevalence differences between various states and regions of the country, then the implications are quite different. First and foremost, since this is the first study to examine this correlation, additional research is needed to examine the processes through which state-level religiosity may reduce sexual assault rates, in general, and campus sexual assault rates, in particular. These mediating factors may be related to specific religious or moral beliefs, individuals' bonds to society, the protective effects of membership and time spent in prosocial groups, increased campus and community cohesiveness, reduced consumption of drugs and alcohol, or other unknown factors.

Second, there should be increased funding for and widespread implementation of bystander intervention programs and other campus sexual assault prevention efforts that promote

prosocial norms, encourage social responsibility, and enhance campus community cohesiveness. Programs such as Mentors in Violence Prevention (MVP; Katz, 1994), Bringing in the Bystander (Banyard, Moynihan, & Plante, 2007; Cares et al., 2015), and Green Dot (Coker et al., 2011) have shown promising results in increasing knowledge regarding sexual assault, challenging sexist attitudes, reducing rape myth acceptance, enhancing individuals' willingness to intervene, and, in some cases, increasing actual bystander behaviors. Overall, social workers and other helping professionals engaged in these prevention and intervention efforts are making strides to create campus climates in which rape-supportive attitudes, beliefs, and behaviors are viewed as unacceptable.

Finally, faith-based or religiously-affiliated institutions, organizations, and sexual assault prevention programs may wish to consider incorporating a spiritual component into their comprehensive violence prevention efforts. Specifically, they might encourage the religious commitment and involvement of the individuals with whom they work, highlight the risks associated with participation in campus party culture, and emphasize the benefits of regular religious service attendance.

Limitations

There are several limitations to this study that should be considered when interpreting the findings. First, the latter portion of our study used 2007-2014 NCVS data that included all attempted and completed rapes among a nationally-representative sample. However, because these data were not limited to campus sexual assaults and did not include state-level geographic specificity, we were only able to address our fourth research question indirectly. Furthermore, our analyses of the student-only subset ($N = 49$) of the NCVS data should be interpreted with caution because of the small sample size and unknown location (e.g., on- or off-campus) of these assaults.

Second, due to using state-level data, we were limited in our ability to include possible control variables into the analysis regarding the relationship between religiosity and campus sexual assault. Nonetheless, the Clery Act data afford a level of geographical detail not found in prior studies of campus sexual assault.

Finally, as with all sources of sexual assault data that involve a formal reporting of the crime, the Clery Act data undoubtedly suffer from underreporting (Fisher et al., 2000; Gardella et al., 2015; Kilpatrick et al., 2007). This is likely due to such factors as the stigma and victim-blaming associated with sexual assault, fears regarding retaliation from the offender, uncertainty on the part of the survivor regarding the nature of her own victimization (especially in cases where alcohol or drugs were involved), and underreporting by campus administrators.

Conclusion

Sexual assault does not occur in a vacuum. Rather, interrelated factors, ranging from the micro- to macro-level, have an impact upon the prevalence and reporting of sexual assault. Neither micro- nor macro-level factors, however, can explain meso-level patterns such as geographical variation in campus sexual assault rates and the rape reportage gap. Thus, it is crucial to examine possible meso-level factors. This study demonstrates that one such factor that warrants further investigation is state-level religiosity.

This study is, to the best of our knowledge, the first to explore the relationship between religiosity and campus sexual assault in the U.S.; it thus begins to fill an important gap in the research literature. Moreover, the robust correlation between state-level religious service attendance rates and campus sexual assault rates is important regardless of whether it is due to differences in prevalence or reporting. Ultimately, only a national campus sexual assault victimization and reporting survey, valid at the state level, can definitively explain the geographic variation we have documented here. This line of inquiry is worth pursuing, however, because the answer to this question may yield valuable insights regarding campus sexual assault prevention.

Notes

¹ A recent pilot study regarding undergraduate sexual victimization on nine college campuses found a wide range (i.e., 12-38%) regarding the percentage of female students who were sexually assaulted during their college years (Krebs et al., 2016), suggesting that campus sexual assault rates may vary substantially from campus to campus.

² According to the Pew Research Center (2015), the category “Evangelical Protestant” consists of the “evangelical traditions” within the following denominations: Baptist, Methodist, Nondenominational, Lutheran, Presbyterian, Pentecostal, Episcopalian / Anglican, Restorationist, Congregationalist, Holiness, Reformed, Adventist, Anabaptist, Pietist, Other evangelical / fundamentalist, and Nonspecific Protestant. According to the Pew Research Center (2015), the category “Mainline Protestant” consists of the “mainline traditions” within the following denominations: Baptist, Methodist, Nondenominational, Lutheran, Presbyterian, Episcopalian / Anglican, Restorationist, Congregationalist, Reformed, Anabaptist, Friends, and Nonspecific Protestant.

³ We did not include non-Christian religious individuals (e.g., Jehovah’s Witness, Mormons, Muslims) in this portion of the analyses because the number of adherents to some of the smaller religious groups, in some states, was too small to conduct the analyses.

⁴ Because the latest amendments to the Clery Act did not go into effect until July 1, 2015, our data do not include hate crimes, dating violence, domestic violence, and stalking.

⁵ Per the U.S. Census, the Northeast region includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The Midwest region includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The Southern region includes Alabama, Arkansas, Delaware, the District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The Western region includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

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