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A COMPARISON OF SEXUAL MINORITY YOUTH WHO ATTEND
RELIGIOUSLY-AFFILIATED SCHOOLS AND THEIR NONRELIGIOUS
SCHOOL-ATTENDING COUNTERPARTS

By

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Undergraduate Thesis

presented in partial fulfillment of the requirements
for the University Scholar distinction

The University of Montana
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A Comparison of Sexual Minority Youth Who Attend Religiously-Affiliated Schools and Their Nonreligious School-Attending Counterparts

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Abstract

Sexual minority (lesbian, gay, and bisexual) youth are an at-risk group for negative health outcomes; however, investigations into potential protective factors, such as religion, are rarely conducted. Investigations of sexual minority youth who attend schools with religious affiliation, and how attending a religiously-affiliated school may relate to alcohol use and school belonging in this at-risk population, are lacking in the literature. The present study compares descriptive characteristics and “outness” levels of sexual minority youth who attend religious schools to sexual minorities who do not attend religious schools (Objective one), and also investigates if attending religiously-affiliated schools is associated with levels of alcohol use and school belonging among sexual minority youth (Objective two). A sample of 475 sexual minority high school students completed an online survey assessing demographics, high school climate, alcohol use (Alcohol Use Disorders Identification Test, or AUDIT), and school belonging. Participants were matched to a comparison sample to compare AUDIT and school belonging scores. The differences in “outness” between groups were tested using chi-square analysis, and after matching participants, two independent samples *t* tests were conducted on AUDIT scores and School Belonging scores.

Sexual minorities attending religiously-affiliated schools had significantly higher AUDIT scores and decreased high school “outness” levels than their nonreligious school-attending counterparts, but attendance at a religiously-affiliated school had no significant association with school belonging. According to the minority stress hypothesis by Meyer (2003) concealment of sexual orientation can lead to increased stress, which can result in increased alcohol use. This hypothesis may help to explain the elevated co-occurring levels of alcohol use and concealment. If sexual minority youth who attend religiously-affiliated schools are facing increased minority stress above and beyond the health disparities already present within this at-risk population, then future research is needed in this area to document the risks involved with attendance at such schools as a sexual minority.

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Table of Contents

Abstract	2
Acknowledgements	3
Introduction	6
A. Conceptual Framework	6
B. Religiosity Among Sexual Minorities	8
C. Study Objectives	11
Methods	12
D. Participants	12
E. Procedure	12
1. Recruitment	12
2. Online Survey	14
F. Measurement and Instrumentation	14
1. Demographics	14
2. Religious Affiliation and High School Characteristics	15
3. School Belonging	15
4. Alcohol Use	16
G. Data Analysis	16
Results	17
Discussion	19
H. Limitations	21
I. Future Directions	23

References	25
Table 1: General Participant Characteristics	31
Table 2: Comparison of Demographic Characteristics of Youth from Religiously- Affiliated and Nonreligious High Schools (N=25 for each sample)	33
Table 3: Comparison of “Outness” Levels, AUDIT Scores, and School Belonging Scores	35

INTRODUCTION

Adolescents who identify as lesbian, gay, or bisexual (LGB) evidence a heightened risk for experiencing negative mental health outcomes, diminished psychosocial well-being, and more alcohol use than their heterosexual peers (Toomey et al., 2011; Heck, Flentje, & Cochran, 2011). Studies investigating this at-risk group have shown that sexual minority (LGB) youth are at increased risk for overall substance use (Marshall et al., 2008), and past-year prevalence of drug use (Corliss et al., 2010) when compared to heterosexual youth. Health disparities between sexual minority and heterosexual individuals regarding mental health and substance use are hypothesized to be due to what Meyer (2003) refers to as *minority stress*. This term illustrates the psychological distress associated with being a sexual minority due to elevated prejudice, discrimination, stigmatization, and general awareness of the negative social attitudes held toward minority populations (Meyer, 1995).

Conceptual Framework

The minority stress model, as proposed by Meyer, relates generally to all populations that are stigmatized due to their minority positions. However, Meyer proposes minority stress processes specific to LGB populations as well. In this LGB specific framework, Meyer makes a distal-proximal distinction due to stress processes that occur both internally and externally for sexual minorities. The distal (external) component describes objective stress events or circumstances. These

events or circumstances can include general stressors (stress at work, from family, etc.), minority status (sexual minority), and prejudice events (discrimination, violence) that can take place in the lives of sexual minorities. The proximal (internal) component consists of the more subjective internalization of sexual minority self-identity. Proximal stress processes entail expectations of rejection which may cause sexual minorities to be vigilant in social interaction, concealment of their identities to avoid harm, and internalized homophobia where sexual minorities adopt the homophobic beliefs prevalent in general society (Meyer, 2003).

The minority stress model articulated by Meyer not only describes stress processes that are risk factors for disorder, but ameliorative coping processes for the elevated stress experienced by sexual minorities. According to the minority stress model, affiliation opportunities, social support, and coping can serve moderating roles between the impact of stress and mental health outcomes. Personal-level and group-level coping processes are distinguished by Meyer to provide a more holistic understanding of the ameliorative techniques sexual minorities may utilize in response to stress. Group-level resources, also conceptualized as *minority coping*, are thought to delineate boundaries for the limits of individualized coping processes. One such minority coping resource could potentially be affiliation with religious groups (Meyer, 2003).

Religion and spirituality could serve as both personal-level and minority coping resources, due to spirituality being thought of more as personal, internalized, and subjective expressions of the sacred and religion being thought of more as

outward, communal, and institutional expressions (Halkitis et al., 2009; Cotton et al., 2006; Hill & Pargament, 2003; Zinnbauer et al., 1997). Although there is no consensus on the definition of these terms, research differentiates them into separate expressions of the sacred. However, there is thought to be considerable overlap between the two constructs (Halkitis et al, 2009; Zinnbauer et al., 1997). The religion component, also known as religiosity, is defined by the level of engagement in religious beliefs, religious service attendance, and frequency of prayer and practice (Cotton et al., 2006; Rostosky, Danner, & Riggle, 2007). Religiosity has become a well documented significant protective factor against a variety of health risk behaviors for general adolescent populations, including alcohol use, cigarette use, marijuana use, sexual behavior, and behaviors that increase morbidity such as drinking and driving, fighting, and carrying weapons (Wallace & Forman, 1998; Wallace et al., 2003; Wallace et al., 2007 Nonnemaker, McNeely, & Blum, 2003; Cotton et al., 2006).

Religiosity Among Sexual Minorities

Studies investigating religiosity among sexual minorities and how it affects substance use are somewhat sparse; however, a growing body of research demonstrates that religiosity is not a protective factor against sexual minority substance use. Specifically, religiosity does not provide protection from alcohol abuse in sexual minority youth (Rostosky, Danner, & Riggle, 2008), heavy episodic drinking (HED) in gay and lesbian young adults (Rostosky, Danner, & Riggle, 2010), or substance use (binge drinking, smoking, marijuana use) in sexual minority

young adults (Rostosky, Danner, & Riggle, 2007). Other studies highlight the conflict that religion can evoke within sexual minorities, and may help to explain why religiosity does not seem to shield them from the effects of stress. For example, Halkitis et al. (2009) investigated the meanings and manifestations of religion and spirituality among LGBT adults, and stated that religion has been used as a means to justify exclusion of LGBT individuals. Consistent with this research, other studies emphasize the social vulnerability for sexual minorities within religious environments (Shilo & Savaya, 2012). One such study reveals a tendency for sexual minorities to “disidentify” with religion and denote sexual and religious identity conflict (Dahl, 2010). Additionally, another study demonstrates that sexual minorities who are in proximity of religious climates that are “less supportive” of sexual minorities have higher levels of alcohol abuse symptoms and have more sexual partners, even after adjusting for potential confounds at the individual and community levels. This study concludes that the religious climate that surrounds LGB youth might be a determinant of their health risk behaviors (Hatzenbuehler, Pachankis, & Wolff, 2012).

The cumulative findings of research exploring religiosity among sexual minorities advise against overgeneralization of the protective qualities religiosity provides for heterosexual individuals, and also indicate that more investigations of religiosity among sexual minorities in differing contexts are needed (Rostosky, Danner, & Riggle, 2007; 2008; 2010). One such context would be in the environment of school. Research has only begun to dip into examination of the effects of

religiosity among sexual minorities within a school climate. However, this area is not completely devoid of empirical studies. For example, a study conducted by Gottfried and Polikoff (2012) is the first study to account for the effects of religiosity in the context of sexual minority students' scholastic accomplishment. The authors conclude that sexual minority academic success is unrelated to the religiosity of their environments. In their discussion, they posit that future studies in this area should be expanded to explore the relationship between religiosity and nonacademic outcomes.

Some research explores religiosity among sexual minority youth who attend high school (see Rostosky, Danner, & Riggle, 2007; 2008; 2010; Gottfried & Polikoff, 2012), but those beliefs and practices are not necessarily idealized by the school and are more individual. These studies also do not investigate the characteristics of sexual minorities attending a religiously-affiliated school (religiosity embedded in school) specifically. Investigations of sexual minority youth who attend schools with religious affiliation, and how attending a religiously-affiliated school may relate to alcohol use and school belonging in this at-risk population, are lacking in the literature. When there are resources in school that provide support and affiliation opportunities for sexual minority youth, such as inclusion in a gay-straight alliance (GSA), LGB youth evidence decreased alcohol use and elevated scores of school belonging and psychosocial well-being (Heck, Flentje, & Cochran, 2011; Toomey et al., 2011). Additionally, highly religious contexts demonstrate protective effects on binge drinking and marijuana use among general adolescent populations (Wallace

et al., 2007). It is yet unknown if a highly religious context such as attendance at a religiously-affiliated school can provide such inclusion, affiliation opportunities, and protection for sexual minority youth.

Study Objectives

The objectives of this study were two-fold. For objective one, an exploration into the characteristics of sexual minority youth who attend religiously-affiliated schools was conducted to compare descriptive characteristics of sexual minority youth who attend religiously-affiliated schools and sexual minority youth who attend schools without a religious affiliation. Additionally, the differences in “outness” levels (i.e. if participants were out with their sexual orientation to teachers and students at their high school) between groups were tested. The second objective of this study was to compare alcohol use and school belonging scores among sexual minorities who attend religiously-affiliated schools to sexual minority youth who attend nonreligious schools.

By matching participants who attend religiously-affiliated schools with participants who attend nonreligious schools on the basis of key characteristics (specifically, age and gender) one can effectively compare alcohol use and school belonging. For objective one, it was anticipated that LGB youth who attend religiously-affiliated schools would have lower “outness” levels than LGB youth who attend schools without religious affiliation. For objective two, it was hypothesized that attending a religiously-affiliated school would have an effect on alcohol use and

school belonging for sexual minority youth, though a specific direction of this effect was not predicted, based on the exploratory nature of this study and potentially contradictory findings in the extant literature.

METHODS

Participants

The participants included in this study for objective one were 475 individuals who participated in a previous study investigating if membership to a gay-straight alliance (GSA) was associated with sexual minority mental health and substance use. Inclusion criteria for this study were that participants identify with a sexual minority orientation (or lesbian, gay, bisexual, queer, questioning, etc.) or gender identity (such as transgender or transsexual). Secondly, participants needed to be between the ages of 16 and 20 and currently attending a public or private high school. If a heterosexual participant completed the survey, he or she was included only if he or she had a history of same-sex or both-sex attraction and/or behaviors. For objective two, a subset of the 475 participants (25 participants from religiously-affiliated schools) was matched with their counterparts on the basis of age and gender, resulting in a sample size of 50 participants.

Procedure

Recruitment: As noted earlier, this study was part of a larger study examining GSA participation. Researchers identified and contacted groups connected with sexual minorities and provided information about the study to

increase the probability of obtaining an LGBT sample. GSA organizations were a main target of recruitment. Researchers located GSA organizations by examining websites that had listings for schools with GSAs. These websites had listings for high schools with GSAs in each state, and identified GSAs nation-wide for recruitment. The GSA census by the Gay, Lesbian & Straight Education Network (GLSEN), where schools can register their GSA, was a primary source for locating GSAs.

After identifying the high schools across the nation that had GSAs, researchers inspected individual high school website pages to gather contact information for the GSA groups and their advisors. Additionally, a team of research assistants searched the social networking site Facebook to locate group pages of the listed GSAs. Once a Facebook contact list for GSAs was constructed, research assistants posted a recruitment message on each GSA group “wall” that included information about the study and a link to the online survey. If other student groups on Facebook had connection to the target sample, research assistants posted the recruitment message to their wall, as well. Facebook posting was not the only method for recruitment; research assistants mailed hard copies of recruitment materials to organizations as well.

Other organizations that were accessed, such as LGBT community centers and PFLAG (Parents, Families, and Friends of Lesbians and Gays) chapters, were mailed hard copies of the recruitment materials which contained flyers, recruitment cards, and informational documents explaining the study. These recruitment

materials encouraged groups to post the flyers, distribute the recruitment cards, and allow the information to be available on their websites to reach individuals who would be eligible for participation. Follow-up emails were sent to make sure the organizations received the materials and were willing to participate in distribution. Recruitment materials were sent to groups in each state in the United States, allowing for recruitment on a national level.

Online Survey: Participants could reach the online survey by entering the hyperlink into an internet browser or by clicking on provided links posted online. Before taking the survey, participants were required to read and agree to an electronic informed consent form. If the participants were willing and gave consent, then they were able to take the survey. However, if the participants did not meet the inclusion criteria, then they were not eligible to take part in the analytic component of the assessment. Individuals who completed the survey could choose to enter into a raffle for a chance to win one of ten \$10 gift cards to an internet retailer.

Measurement and Instrumentation

Demographics: A standard demographics questionnaire in the online survey included questions on age, gender, ethnicity/race, population, and relationship status. Participants selected from a variety of options to describe their sexual orientation (e.g. gay or lesbian, bisexual, straight or heterosexual, unsure, or other). Once the participants chose an option, they were also able to rate their sexual

orientation on a continuous scale (from 1 being heterosexual/straight, to 5 being bisexual, to 9 being gay/lesbian). Additionally, participants completed items about their sexual history and attraction, such as the age of first consensual sex with other or same-sex members.

Religious Affiliation and High School Characteristics: Participants were asked about high school characteristics such as the population of the city or town where participants attended high school, current grade (from freshman to senior), high school GPA, if participants considered themselves “out” with regard to their sexual orientation to teachers and students at their high school by choosing either “yes” (i.e. they were “out”) or “no” (i.e. they weren’t “out”), and if their high school had a religious affiliation or not.

School Belonging: School belonging was quantified with a five-item school connectedness scale articulated by Waters and Cross (2010) that was slightly adjusted for administration of the measure outside a school setting, due to the fact that it is regularly used for measurement at school. The items measured school connectedness by utilizing a five-point Likert scale, with 1 being “strongly disagree” and 5 being “strongly agree.” Sample items from this scale are: “I feel like I am a part of my high school,” and “I feel safe at my high school.” The scale was adapted from the Add Health Study (Sieving et al. 2001) and has good reported reliability and validity (Waters & Cross, 2010).

Alcohol Use: The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) was employed to assess harmful and hazardous alcohol consumption. The 10-item questionnaire within the AUDIT encompasses measurement of alcohol consumption, drinking behavior, and alcohol-related problems. Responses to items are scored on a scale from 0 to 4, with the maximum score being 40. Sample items from this scale are: “How often do you have a drink containing alcohol?”, “How many drinks containing alcohol do you have on a typical day when you are drinking?”, and “have you or someone else been injured as a result of your drinking?” Higher scores on the measure indicate elevated harmful and hazardous alcohol consumption (Saunders et al., 1993). A study by Allen et al. (1997) reviewing the research on the AUDIT indicates that it has high internal consistency, suggesting that the target construct is measured in a reliable manner.

Data Analysis

For objective one, descriptive characteristics were examined for the 25 participants who attended a religiously-affiliated school and the other 450 participants in the sample. Using SPSS software, demographic and high school characteristic frequencies and means were computed and analyzed to examine and compare descriptive characteristics between sexual minority youth who attend religiously-affiliated schools and sexual minority youth who attend nonreligious schools. Specific descriptive characteristics included for comparison were gender, age, ethnicity/race, relationship status, population of high school town or city,

sexual orientation, and “outness” in high school. To test the hypothesis of objective one, the differences in “outness” between groups were tested using chi-square analysis.

To test the hypotheses of objective two, 25 sexual minorities who attend religiously-affiliated schools were matched with 25 sexual minorities who do not attend religiously-affiliated schools by age and gender. Participant matching occurred on the basis of these two factors because they are thought to be predictors of alcohol misuse (Johnston et al., 1992; Robins, 1992; Hawkins et al., 1997). When matching participants in SPSS, participants who did not share the same age and gender identity of a given participant from a religiously-affiliated school were first filtered out by selection of cases. A random sample of the remaining participants was then selected to each participant needed with the same age and gender. This process was repeated until all 25 individuals who attend religiously-affiliated schools were matched with 25 nonreligious school-attending counterparts. After participant matching, the means of school belonging and AUDIT scores were computed. These means were compared using two independent samples *t* tests to investigate if the differences between means were statistically significant.

RESULTS

Table 1 provides basic demographic data for all participants in this study. Table 2 presents the demographic data for the two groups identified in Objective two. For comparison purposes, the percentages from the sexual minorities who attended a religiously-affiliated school are listed first, and the percentages from the

sexual minorities who did not attend religiously-affiliated schools follow in parentheses. Lastly, Table 3 offers the comparisons for “outness” levels, AUDIT scores, and school belonging scores between the two groups. When sexual orientation was measured on the continuous scale (from 1 being heterosexual/straight, to 5 being bisexual, to 9 being gay/lesbian) for all of the participants in the study, the mean score was 6.26.

In objective one, the demographics of sexual minorities who attend religiously-affiliated schools were compared to the demographics of their nonreligious school-attending counterparts. There were some differences between the two groups’ demographic characteristics. For example, when compared to the nonreligious group, the religiously-affiliated group differed to a large degree in regard to high school town or city population (0.0% of the religiously-affiliated group were in the 5,000 – 9,999 population category, and 45.8% of the religiously-affiliated group had a population of more than 250,000 people compared to 14.7% for the over 250,000 population in the nonreligious group). The religiously-affiliated group was also more heterogeneous in regard to ethnicity, and had a higher proportion of bisexual individuals and fewer gay and lesbian individuals than the nonreligious group (see table 2 for percentages). “Outness” levels were also compared in objective one. Although 33.3% of participants from religiously-affiliated schools were “out” to students and teachers at their high school, 67.0% of participants from nonreligious schools were “out.” Chi-square analysis conducted to compare the “outness” levels

between groups indicated a significant difference between these two groups, $\chi^2(df=1) = 9.990, p < .01$ (two-tailed).

For objective two, scores on the AUDIT assessed alcohol consumption levels. Sexual minorities attending religiously-affiliated schools reported higher AUDIT scores ($M = 7.76, SD = 10.08$) when compared to sexual minorities who attend nonreligious schools ($M = 2.28, SD = 4.77$). This difference between mean scores (with equal variances not assumed) was statistically significant ($t = 2.457, df = 34.22, p < .05$, two tailed). School belonging was quantified with the modified school connectedness scale, with higher scores indicating higher levels of school belonging. The mean score for school belonging was slightly higher for sexual minorities who attended religiously-affiliated schools ($M = 18.52, SD = 6.09$) than sexual minorities who attended nonreligious schools ($M = 16.52, SD = 4.57$); however, this difference between school belonging mean scores (with equal variances assumed) was not statistically significant ($t = 1.31, df = 48, p = .195$, two tailed).

DISCUSSION

Research studies of sexual minorities who attend religiously-affiliated schools are essentially nonexistent. Investigations into both protective factors that can help to buffer the health disparity between sexual minorities and heterosexuals, and risk factors that may contribute to these negative outcomes, are necessary. This study explored if attendance at a religiously-affiliated school could offer these protective qualities, or if such a climate could be a risk factor adding to the already elevated stress faced by sexual minorities. Attending religiously-affiliated schools was not

associated with a significant difference in school belonging, in comparison to attending nonreligious schools. However, attending religiously-affiliated schools, for sexual minority youth, was associated with increased levels of alcohol use.

Additionally, when attending a religious school, sexual minority youth were less likely to be “out” with their sexual orientation to students and teachers at school when compared to their nonreligious school-attending counterparts.

These results support the hypothesis of objective one, and are partially supportive of the hypotheses of objective two in the study. Attendance at religiously-affiliated schools had a significant association with alcohol use, and sexual minorities who attended these schools exhibited significantly lower “outness” levels in high school. Despite the fact that attending a religiously-affiliated school had no significant association with school belonging, which was contrary to the hypothesis of objective two, implications can still be made. In objective one, the results demonstrate that sexual minorities who attend religiously-affiliated schools tend to conceal their sexual orientation more than their nonreligious school-attending counterparts. This could potentially be due to the conflict that religion can create for sexual minorities and their identities. Sexual minorities who attend religiously-affiliated schools may exhibit the same tendency to “disidentify” with religion and experience sexual and religious identity conflict, as was found in the study by Dahl (2010).

The combination of higher levels of problematic alcohol use and higher levels of sexual orientation concealment (i.e. low “outness” levels) supports Meyer’s

minority stress hypothesis. Concealment of sexual orientation, which is a proximal stressor in the model, can be associated with elevated stress for sexual minorities. An increase in minority stress could potentially result in individuals using alcohol in order to alleviate this distress (Meyer, 2003; Mulia et al., 2008). This hypothesis may help to explain the co-occurring increase in alcohol use and concealment of sexual orientation demonstrated by sexual minorities who attend religiously-affiliated schools.

Limitations

There were several limitations that warrant acknowledgement and limit the generalizability of the results found in this study. The first limitation was the small number of participants who were in the religiously-affiliated school attendance group. This small number of participants can reduce the statistical power of the obtained results. However, sampling sexual minority youth from religiously-affiliated schools is a challenge in itself, especially since there appears to be a high rate of concealment of sexual orientation among this group. The second limitation was in regard to randomization. Participants were not randomized to schools with religious affiliation or schools without religious affiliation, and therefore causal inferences cannot be made for the relationship between attendance to religiously-affiliated schools, the descriptive characteristics, and the outcome variables.

Additionally, a random sample was not compared in objective two for AUDIT scores and school belonging, but instead, a matched sample was compared.

Although matching on the basis of key characteristics that are thought to be predictive of alcohol misuse helps to effectively compare mean scores, some selection bias may be present when using only age and gender. Matching on other characteristics that could potentially influence alcohol use (such as ethnicity or population of city or town of high school attendance), in addition to age and gender, would also compare these mean scores more effectively. However, the small number of participants collected who attend religiously-affiliated schools restricted access to matching on such characteristics.

A third limitation of the study involves the homogeneity of the sample. The homogeneous nature of the sample limits generalizability to less-represented groups. Although the religiously-affiliated group was more heterogeneous than the matched nonreligious group included in objective two because it had more representation from groups other than Caucasian ethnic identity (with the exception of Native American ethnic identity, and the two groups had about the same representation of “other” ethnic identity), the small sample size limits that particular group. Another limitation is the utilization of convenience sampling methodology. This could potentially restrict the generalizability of the results because self-selection bias may be present, and not represent the entire target population. Despite the limitations within this study, a noteworthy strength was also present. The study represents participants recruited nationally, and is not limited to just one or several geographic locations. Future research in this area could address the limitations of this study.

Future Directions

As stated previously, research regarding sexual minorities who attend religiously-affiliated schools is limited. The results of this study demonstrate that additional research in this area is needed to further delineate the relationship between attending religiously-affiliated schools and the associated impacts on sexual minority youth. In the future, research in this area could focus on associated school constituents other than school belonging or “outness” (such as victimization). Research in this area could investigate what it is about the religious school environment that might confer additional distress and alcohol abuse. Additionally, how attending religiously-affiliated schools relates to more general substance use such as marijuana, cocaine, methamphetamine, or other substances could be the primary objective of investigation. These studies could eliminate some of the limitations of this study by having a larger sample size of participants who attend religiously-affiliated schools, and compare them to a random sample of sexual minorities who attend nonreligious schools.

Future research could also be longitudinal rather than cross-sectional, and include a more heterogeneous sample, which would allow more definitive conclusions and generalization to a wider range of populations. Additional future research topics could include exploratory studies that are descriptive in nature, such as elucidation of certain characteristics of religiously-affiliated schools that necessitate concealment of sexual orientation and alcohol use. For example, Heck et al. (2013) investigated reasons why sexual minority youth do not join gay-straight

alliances (GSAs), and derived themes that were common among sexual minorities who did not join. A similar study could highlight themes regarding what aspects of religiously-affiliated schools impact these associated negative outcomes, and additionally, identify themes that are possibly protective against them. Another aspect future research could incorporate is how differing religious groups or religious denominations within schools (i.e. catholic schools, protestant schools, etc.) influence sexual minorities.

Studies investigating religion, or religiosity, and sexual minorities demonstrate that it may not be a protective factor among this population. If sexual minority youth who attend religiously-affiliated schools are facing increased minority stress above and beyond the health disparities already present within this at-risk population, then future research is needed in this area to document the risks involved with attendance at such schools as a sexual minority. In addition, research can explore aspects of religiously-affiliated schools that are risk and protective factors for sexual minority youth. Future research in this area will fill a large gap within the literature, and better capture the experiences of sexual minorities who attend religiously-affiliated schools.

References

- Allen, J. P., Litten, R. Z., Fertig, J. B., & Babor, T. (1997). A review of research on the alcohol use disorders identification test (AUDIT). *Alcoholism: Clinical and Experimental Research, 21* (4), 613-619.
- Corliss, H. L., Rosario, M., Wypij, D., Wylie, S. A., & Frazier, A. L. (2010). Sexual orientation and drug use in a longitudinal cohort study of U. S. adolescents. *Addictive Behaviors, 35* (5), 517-521.
- Cotton, S., Zebracki, K., Rosenthal, S. L., Tsevant, J., & Drotar, D. (2006). Religion/spirituality and adolescent health outcomes: A review. *Journal of Adolescent Health, 38*, 472-480.
- Dahl, A. (2010). The religious experience of sexual minority youth: Identity, integration, and minority stress. *Proquest Information and Learning, 70* (8-B), 5204.
- Gottfried, M. A., & Polikoff, M. S. (2012). A religious experience? personal, parental, and peer religiosity and the academic success of sexual-minority youth using nationally representative samples. *Journal of LGBT Youth, 9* (3), 183-199.
- Halkitis, P. N., Mattis, J. S., Sahadath, J. K., Massie, D., Ladyzhenskaya, L., Pitrelli, K., Bonacci, M., & Cowie, S. E. (2009). The meanings and manifestations of religion and spirituality among lesbian, gay, bisexual, and transgender adults. *Journal of Adult Development, 16* (4), 250-262.

- Hatzenbuehler, M. L., Pachankis, J. E., & Wolff, J. (2012). Religious climate and health risk behaviors in sexual minority youths: A population based study. *American Journal of Public Health, 102* (4), 657-663.
- Hawkins, D. J., Graham, J. W., Maguin, E., Abbott, R., Hill, K. G., & Catalano, R. F. (1997). Exploring the effects of age alcohol use initiation and psychosocial risk factors on subsequent alcohol misuse. *Journal of Studies on Alcohol, 58* (3), 280-290.
- Heck, N. C., Flentje, A., & Cochran, B. N. (2011). Offsetting risks: High school gay-straight alliances and lesbian, gay, bisexual, and transgender (LGBT) youth. *School Psychology Quarterly, 26* (2), 161-174.
- Heck, N. C., Lindquist, L. M., Stewart, B. T., Brennan, C., & Cochran, B. N. (2013). To join or not to join: Gay-straight student alliances and the high school experiences of lesbian, gay, bisexual, and transgender youths. *Journal of Gay & Lesbian Social Services, 25* (1), 77-101.
- Hill, P.C., Pargament, K. I. (2003). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *American Psychologist, 58* (1), 64–74.
- Johnston, L. D., O' Malley, P. M., and Bachman, J. G. Smoking, drinking, and illicit drug use among American secondary students, college students, and young adults, Vol I., NIH Publication No. 93-3480, Washington: Government Printing Office, 1992.

- Marshall, M. P, Friedman, M. S., Stall, R., King, K. M., & Miles, J. (2008). Sexual orientation and adolescent substance use: A meta-analysis and methodological review. *Addiction, 103* (4), 546-556.
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior, 36*, 38-56.
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin, 129*, 674–697.
- Mulia, N., Ye, Y., Zemore, S. E., Greenfield, T. K. (2008). Social disadvantage, stress, and alcohol use among black, hispanic, and white americans: Findings from the 2005 U.S. national alcohol survey. *Journal of Studies on Alcohol and Drugs, 69* (6), 824-833.
- Nonnemaker, J. M., McNeely, C. A., & Blum, R. M. (2003). Public and private domains of religiosity and adolescent health risk behaviors: Evidence from the national longitudinal study of adolescent health. *Social Science and Medicine, 57* (11), 2049-2054.
- Robins, L. N. Synthesis and Analysis of Longitudinal Research on Substance Abuse, Robert Wood Johnson Foundation, Princeton, N.J., 1992, unpublished report.

- Rostosky, S. S., Danner, F., & Riggle, E. D. B. (2007). Is religiosity a protective factor against substance use in young adulthood? only if you are straight! *Journal of Adolescent Health, 40*, 440-447.
- Rostosky, S. S., Danner, F., & Riggle, E. D. B. (2008). Religiosity and alcohol use in sexual minority and heterosexual youth and young adults. *Journal of Youth and Adolescence, 37*(5), 552-563.
- Rostosky, S. S., Danner, F., & Riggle, E. D. B. (2010). Religiosity as a protective factor against heavy episodic drinking (HED) in heterosexual, bisexual, gay, and lesbian young adults. *Journal of Homosexuality, 57*, 1039-1050.
- Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction, 88*, 791-804.
- Shilo, G., & Savaya, R. (2012). Mental health of lesbian, gay, and bisexual youth and young adults: Differential effects of age, gender, religiosity, and sexual orientation. *Journal of Research on Adolescence, 22*(2), 310-325.
- Sieving, R. E., Beuhring, T., Resnick, M. D., Bearinger, L. H., Shew, M., Ireland, M., & Blum, R. W. (2001). Development of adolescent self-report measures from the national longitudinal study of adolescent health. *Journal of Adolescent Health, 28*, 73-81.

- Toomey, R., Ryan, C., Diaz, R., & Russel, S. (2011). High school gay-straight alliances (GSAs) and young adult well being: An examination of GSA presence, participation, and perceived effectiveness. *Applied Developmental Science, 15* (4), 175-185.
- Wallace, J. M., Brown, T. N., Bachman, J. G., & Laveist, T. A. (2003). The influence of race and religion on abstinence from alcohol, cigarettes, and marijuana among adolescents. *Journal of Studies on Alcohol, 64* (6), 843-848.
- Wallace, J. M., & Forman, T. A. (1998). Religion's role in promoting health and reducing risk among american youth. *Health Education & Behavior 25* (6), 721-741.
- Wallace, J. M., Yamaguchi, R., Bachman, J. G., O' Malley, P. M., Schulenburg, J. E., & Lloyd, J. D. (2007). "Religiosity and adolescent substance use: The role of individual and contextual influences": Erratum. *Social Problems, 54* (3), 395-397.
- Waters, A. & Cross, D. (2010). Measuring students' connectedness to school, teachers, and family: Validation of three scales. *School Psychology Quarterly, 25*, 164-177.
- Zinnbauer, B. J., Pargament, K. I., Cole, B., Rye, M. S., Butter, E. M., Belavich, T.G., Hipp, K. M., Scott, A. B., & Kadar, J. L. (1997). Religion and spirituality: Unfuzzifying the fuzzy. *Journal for the Scientific Study of Religion, 36* (4), 549-564.

Table 1*General Participant Characteristics*

Variable	Entire Sample (<i>n</i> = 475) <i>n</i> (%)	Variable	Entire Sample (<i>n</i> = 475) <i>n</i> (%)
<u>Gender</u>		<u>Relationship Status</u>	
Male	179 (37.7)	Single	313 (65.9)
Female	257 (54.1)	Committed	104 (21.9)
Transgender	24 (5.0)	Dating	56 (11.8)
Other	15 (3.2)	Married	2 (0.4)
<u>Age</u>		<u>Population</u>	
16	193 (40.8)	Less than 2,500	45 (9.5)
17	198 (41.9)	2,500 – 4,999	62 (13.2)
18	72 (15.2)	5,000 – 9,999	46 (9.8)
19	10 (2.1)	10,000 – 49,999	137 (29.0)
<u>Ethnicity</u>		50,000 – 250,000	105 (22.2)
Caucasian	329 (69.2)	More than 250,000	77 (16.3)
Hispanic/Chicano	51 (10.7)	<u>Religious School?</u>	
African American	36 (7.6)	Yes	25 (5.3)
Native American	17 (3.6)	No	450 (94.7)
Asian American	16 (3.4)	<u>Education Level (Grade)</u>	
Other	26 (5.5)	Freshman (9 th)	9 (1.9)
<u>Sexual Orientation</u>		Sophomore (10 th)	93 (19.6)
Gay or Lesbian	213 (44.8)	Junior (11 th)	171 (36.0)
Bisexual	132 (27.8)	Senior (12 th)	202 (42.5)

Straight	40 (8.4)	<u>Mean, <i>SD</i></u>	
Unsure	34 (7.2)	Age	16.79, 0.78
Queer	32 (6.7)		
Other	24 (5.1)		

Note. Two participants had missing data for age and three participants had missing data for the population of their high school city or town.

Table 2

Comparison of Demographic Characteristics of Youth from Religiously-Affiliated and Nonreligious High Schools (N=25 for each sample)

Variable	Religiously-Affiliated % (Nonreligious %)	Variable	Religiously-Affiliated % (Nonreligious %)
<u>Gender</u>		<u>Relationship Status</u>	
Male	32.0 (32.0)	Single	72.0 (65.6)
Female	56.0 (56.0)	Committed	12.0 (22.4)
Transgender	8.0 (8.0)	Dating	12.0 (11.8)
Other	4.0 (4.0)	Married	4.0 (0.2)
<u>Age</u>		<u>Population</u>	
16	48.0 (48.0)	Less than 2,500	12.6 (9.4)
17	28.0 (28.0)	2,500 – 4,999	8.3 (13.4)
18	20.0 (20.0)	5,000 – 9,999	0.0 (10.3)
19	4.0 (4.0)	10,000 – 49,999	8.3 (30.1)
<u>Ethnicity</u>		50,000 – 250,000	25.0 (22.1)
Caucasian	52.0 (70.2)	More than 250,000	45.8 (14.7)
Hispanic/Chicano	20.0 (10.2)	<u>Religious School?</u>	
African American	16.0 (7.1)	Yes	100.0 (0.0)
Native American	0.0 (3.8)	No	0.0 (100.0)
Asian American	8.0 (3.1)		
Other	4.0 (5.6)		
<u>Sexual Orientation</u>			
Gay or Lesbian	28.0 (45.8)		

Bisexual	44.0 (26.9)
Straight	16.0 (8.0)
Unsure	8.0 (7.1)
Queer	4.0 (6.9)
Other	0.0 (5.3)

Note. Three participants had missing data for the population of the city or town of high school attendance (one participant from religiously-affiliated schools and two participants from nonreligious schools).

Table 3*Comparison of “Outness” Levels, AUDIT Scores, and School Belonging Scores*

Comparison	Religiously-Affiliated % (Nonreligious %)	χ^2 ($df= 1$)	p -value (two-tailed)
<u>“Out” in High School?</u>			
Yes	33.3 (67.0)	9.990	0.002**
No	66.7 (33.0)		
Comparison	M score (SD)	t (df)	p -value (two-tailed)
<u>AUDIT Scores</u>			
Religiously-Affiliated	7.76 (10.08)	2.46 (34.22)	0.019*
Nonreligious	2.28 (4.77)		
<u>School Belonging</u>			
Religiously-Affiliated	18.52 (6.09)	1.31 (48)	0.195
Nonreligious	16.52 (4.57)		

Note. * $p < .05$, ** $p < .01$.