



Published in final edited form as:

Am J Prev Med. 2015 July ; 49(1): 29–40. doi:10.1016/j.amepre.2015.01.024.

Self-Reported Mental Disorders and Distress by Sexual Orientation:

Results of the Minnesota College Student Health Survey

Julia M. Przedworski, BS, Nicole A. VanKim, PhD, Marla E. Eisenberg, ScD, MPH, Donna D. McAlpine, PhD, Katherine A. Lust, PhD, MPH, RD, and Melissa N. Laska, PhD, RD

Division of Health Policy and Management (Przedworski), Division of Epidemiology and Community Health (VanKim, Laska), School of Public Health, Division of General Pediatrics and Adolescent Health (Eisenberg), Division of Health Policy and Management (McAlpine), and Boynton Health Service (Lust), University of Minnesota, Minneapolis, Minnesota

Abstract

Introduction—Sexual minority college students (i.e., those not identifying as heterosexual, or those reporting same-sex sexual activity) may be at increased risk of poor mental health, given factors such as minority stress, stigma, and discrimination. Such disparities could have important implications for students' academic achievement, future health, and social functioning. This study compares reports of mental disorder diagnoses, stressful life events, and frequent mental distress across five gender-stratified sexual orientation categories.

Methods—Data were from the 2007–2011 College Student Health Survey, which surveyed a random sample of college students (N=34,324) at 40 Minnesota institutions. Data analysis was conducted in 2013–2014. The prevalence of mental disorder diagnoses, frequent mental distress, and stressful life events were calculated for heterosexual, discordant heterosexual, gay or lesbian, bisexual, and unsure students. Logistic regression models were fit to estimate the association between sexual orientation and mental health outcomes.

Results—Lesbian, gay, and bisexual students were more likely to report any mental health disorder diagnosis than heterosexual students ($p<0.05$). Lesbian, gay, bisexual, and unsure students were significantly more likely to report frequent mental distress compared to heterosexual students (OR range, 1.6–2.7). All sexual minority groups, with the exception of unsure men, had significantly greater odds of experiencing two or more stressful life events (OR range, 1.3–2.8).

Conclusions—Sexual minority college students experience worse mental health than their heterosexual peers. These students may benefit from interventions that target the structural and

© 2015 Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine.

Address correspondence to: Julia M. Przedworski, BS, Division of Health Policy and Management, School of Public Health, University of Minnesota, 925 Delaware St. SE, Suite 220, Dinnaken Office Building, Minneapolis MN 55414. prze0009@umn.edu.

The content is solely the responsibility of the authors and does not necessarily represent the official view of NIH.

No financial disclosures were reported by the authors of this paper.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

social causes of these disparities, and individual-level interventions that consider their unique life experiences.

Introduction

Mental disorders are one of the most common health conditions, affecting approximately one in four adults in the U.S., and can have significant repercussions on future health, well-being, and social functioning.^{1–3} Growing evidence suggests that lesbian, gay, and bisexual (LGB) individuals face a disproportionate burden of poor mental health compared to heterosexuals.^{4–9} This disparity has been attributed in part to minority stress, or the particular stress LGB people experience due to stigma and discrimination of having a marginalized identity relative to society's heterosexual norm.^{10–14} These group-specific stressors may also increase LGB individuals' vulnerability to general psychological processes that increase risk of psychopathology.^{15–18}

However, gaps persist in knowledge regarding the mental health of sexual minority (i.e., non-heterosexual) populations. More evidence is needed on mental health among sexual minority youth,¹⁰ particularly emerging adults (aged 18–25 years). The developmental stage of emerging adulthood is considered a “sensitive period” for mental health, an opportunity for intervention resulting in more salutary life trajectories.^{19,20} Nearly half of emerging adults attend college, representing a critical mass for whom to address mental health issues.²¹ Moreover, poor mental health during college can have serious implications for students' academic achievement.^{22–24}

Sexual minority college students are at increased risk of poor mental health, including depression and suicidality.^{25–27} Kerr and colleagues²⁵ found that lesbian and bisexual college women reported significantly worse mental health status, including anxiety, anger, depressive symptoms, and suicidal ideation, than heterosexual women. Oswalt and Wyatt²⁷ found higher levels of anxiety, depression, and panic attacks among LGB and unsure students. Sexual minority status is associated with increased risk of experiencing stressful life events among college students²⁷ and young adults in general.²⁸ Sexual minority college students have also been found to utilize more mental health services than heterosexual students.^{25,27}

Knowledge on sexual minority mental health has been hampered by several limitations.^{5,13,29} Population-based studies of sexual minority adolescents and young adults have primarily examined depression, anxiety, and suicidality, while other mood and anxiety disorders remain underexamined.¹⁰ Many studies used non-probability samples, thus potentially biasing findings.^{4,30,31} Owing to limited sample sizes, many studies combined non-heterosexual individuals into one group, potentially obscuring differences between subgroups (e.g., between gay and bisexual individuals).³² Finally, limited research exists on the mental health of non-LGB identified sexual minority groups, including those with same-sex sexual behavior who do not identify as LGB, and individuals who are unsure of their sexual identity.^{32,33}

The purpose of this study, therefore, is to compare self-reported mental disorder diagnoses, stressful life events, and frequent mental distress across five sexual orientation categories, stratified by gender, using a large probability sample of college students.^{34–38} It is hypothesized that sexual minority men and women are more likely to be diagnosed with a mental disorder, report frequent mental distress, and experience stressful life events compared with their heterosexual counterparts.

Methods

Data were from the 2007–2011 College Student Health Survey (CSHS). The CSHS is an online health survey administered by University of Minnesota's Boynton Health Service to a random sample of 2- and 4-year college students at Minnesota institutions. Students from 40 institutions were sampled from enrollment rosters and invited to participate through postcard mailings and e-mails. Additional details on the survey have been previously described^{39,40} and are publicly available online (www.bhs.umn.edu/surveys/index.htm). All survey procedures for the CSHS were approved by the University of Minnesota IRB. Secondary analyses of anonymous data conducted in this study were exempt from IRB review.

Among the 40 institutions that participated in the CSHS, 17 participated in a single year and 23 participated in multiple years between 2007 and 2011. To reduce potential bias from a single student participating in the survey more than once, an additional year of data from a single school was included if: (1) the institutional participation in CSHS was 3 years apart; (2) <50% of students were sampled for participation; and (3) the probability of a student participating more than once in the survey was <2%, calculated using information from the National Center for Education Statistics,⁴¹ the sampling probability, and response rate at each school, as has been done previously.^{42,43} The merged data set had 34,392 students from 40 institutions with an overall response rate of 42%, similar to response rates reported in other studies of college populations.^{44–48}

Measures

Consistent with previous research,^{42,49} an overall sexual orientation variable was created by combining sexual behavior and sexual identity measures, resulting in the following: (1) *heterosexual* (identified as heterosexual and engaged in only different-sex sexual behavior or did not engage in sexual behavior in the past year); (2) *discordant heterosexual* (identified as heterosexual and engaged in same-sex or both-sex sexual behavior in the past year); (3) *gay or lesbian*; (4) *bisexual*; and (5) *unsure*. Participants fell into one of these last three categories based only on sexual identity, independent of their sexual behavior.

Mental disorder diagnoses were assessed by asking: *For each condition, indicate whether you have been diagnosed within the past 12 months: anorexia, anxiety, attention deficit, bipolar, bulimia, depression, obsessive-compulsive, panic attacks, post-traumatic stress, seasonal affective, and social phobia/performance anxiety (yes/no for each)*. A measure of any mental disorder diagnosis was created for respondents who indicated any of the 11 disorders, while 2 mental disorder diagnoses represented those who reported two or more disorders.

Frequent mental distress (FMD) was assessed with the question: *Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?* Participants who indicated poor mental health on 14 days were classified as having FMD.⁵⁰

Respondents were asked if they had experienced a variety of stressful life events in the past year, including: *failing a class, being diagnosed with a serious physical illness, divorce or separation, termination of a personal relationship (excluding marriage), academic probation, excessive credit card debt, being arrested, being fired or laid off from a job, roommate/housemate conflict, and parental conflict (yes/no for each)*. Indicator variables were created for any stressful life event and two or more stressful life events.

Mental health service utilization was assessed using: *Where do you go for mental health services while in school?* A variety of locations were provided, including *school health service, student counseling service, hospital, community clinic, HMO, and private practice*. Respondents who reported obtaining mental health services at any location were grouped into a single category. Sociodemographic covariates included school type (2- vs. 4-year), health insurance status (has insurance or not), age, relationship status (single, married/domestic partner, engaged/committed, separated/divorced/widowed), student status (first-time undergraduate, other undergraduate, graduate), race/ethnicity (white and non-white), having children (no/yes), international student (no/yes), living arrangements (parent's home, rent or share rent, residence hall, own a house, and other), hours worked for pay (0–10 hours, 11–30 hours, and 31 hours), and credit card debt (none or any).⁵¹

Statistical Analyses

Participants who reported ages <18 years or >99 years ($n=11$), were missing gender data ($n=54$), were transgender ($n=53$), or provided implausible responses on three or more of seven key variables ($n=3$) were dropped from analyses. The final analytic sample had 34,324 participants.

Wald chi-square tests were used to assess differences in prevalence of mental health measures and stressful life events across sexual orientation. Unadjusted and adjusted (including all aforementioned covariates) gender-stratified logistic regression models were used to assess the relationship between sexual orientation and five mental health outcomes: (1) any mental disorder diagnosis; (2) 2 mental disorder diagnoses; (3) FMD; (4) any stressful life event; and (5) two or more stressful life events. Sexual minority students were more likely to utilize mental health services than non-minority students; therefore, an additional model was fit including mental health service utilization as a covariate. A significant interaction between sexual orientation and gender for a number of outcomes (results not presented) further supported the gender-stratified analysis. SEs were adjusted for school clustering. Analyses were conducted between August 2013 and May 2014, using STATA, version 11.

Results

Sample characteristics are presented in Tables 1 and 2 for women and men, respectively. Most students were heterosexual (women, 93.0%; men, 93.1%); among women, 0.8% were discordant heterosexual, 1.2% were gay or lesbian, 3.5% were bisexual, and 1.6% were unsure. Among men, 0.9% were discordant heterosexual, 2.9% were gay, 1.6% were bisexual, and 1.6% were unsure. Nearly two thirds attended a 4-year institution (65.0%) and most were white (83.3%). The median age for female and male students was 22 years.

The prevalence of mental disorder diagnoses, FMD, any stressful life event, and 2 stressful life events across sexual orientation are presented in Table 3 for women and Table 4 for men. LGB students were significantly more likely to report FMD and, with a few exceptions, more likely to have been diagnosed with a mental health disorder in the past year than their heterosexual peers. Compared to heterosexual women, bisexual women had significantly higher prevalence of mental disorders for all 11 diagnoses; gay or lesbian women were significantly higher for seven of 11 diagnoses. Similarly, compared to heterosexual men, gay and bisexual men had significantly higher proportions for the majority of mental disorder diagnoses, ten and eight, respectively. Unsure individuals had a higher prevalence of FMD, anorexia, and bulimia than heterosexual individuals. Although there was no significant difference among discordant heterosexual individuals for FMD, discordant heterosexual men had higher prevalence of anorexia, bulimia, depression, panic attacks, and post-traumatic stress diagnoses than heterosexual men. The prevalence of each stressful life event across sexual orientation is presented in Appendix Tables 1 (women) and 2 (men). There were significant differences across sexual orientation for all 11 stressful life events among women, whereas significant differences were observed among men for five of 11 events.

Unadjusted models were similar to the adjusted; therefore, only results from adjusted logistic regression analyses are presented in Table 5. Compared to heterosexual counterparts, LGB men and women were more likely to receive a mental health diagnosis, have FMD, and experience stressful life events. Unsure participants also had higher odds of FMD. Inclusion of mental health service utilization attenuated estimates of mental disorder diagnoses slightly; however, results remained statistically significant for all groups, except for the odds of two or more mental disorder diagnoses among gay or lesbian women (data not shown).

Discussion

LGB college students in this study were more likely than heterosexual students to experience mental health problems, reflected in higher levels of both mental health diagnosis and FMD. The prevalence of mental disorder diagnoses was high—almost one third of LGB female students and one fifth of LGB male students reported a diagnosis in the past year. Because diagnosed mental illness underestimates the true prevalence of disorder,⁵² the burden of mental illness is likely higher. These disparities persisted after controlling for mental health service utilization, suggesting that observed differences in diagnoses were not attributable to higher utilization among sexual minority students. Further, unsure students

were more likely to report FMD than their heterosexual counterparts. All groups, except for unsure men, were more likely to experience stressful life events than heterosexual students.

Consistent with existing literature, LGB individuals were more likely to be diagnosed with depression and anxiety than heterosexuals.^{53,54} Additionally, there was evidence of disparities across a number of mental disorders that have been underexamined in this population, including attention deficit, bipolar, and obsessive compulsive disorders. Moreover, there was a higher prevalence of post-traumatic stress and social phobia among LGB college women and of bulimia and panic attacks among LGB college men compared with their heterosexual counterparts. These findings highlight the need for research on a range of mental health problems among sexual minority populations.

Findings also suggest differences in mental health between gay/lesbian and bisexual students. Compared to heterosexual women, bisexual women had a greater prevalence of all 11 diagnoses (lesbian women had a greater prevalence of seven diagnoses), and were the only group more likely to be diagnosed with panic attacks and bulimia. These results are consistent with research indicating worse mental health status among bisexual women than both heterosexual and lesbian women.^{5,25,55,56} Bisexual individuals must contend with discrimination based on sexual minority status and also may face stigmatization from lesbian and gay communities.⁵⁷ Combined with the relative lack of bisexual-specific organizations, bisexual individuals have fewer opportunities for affiliation with “similar others”—a protective factor against negative stigma.^{57,58} Given these and other findings,^{5,32,59} bisexual individuals should be considered a distinct group in mental health research and intervention design.

This research indicates that LGB students were more likely to report experiencing stressful life events than heterosexual students. Additional research is necessary to elucidate the impact of sexual orientation differences in stressful life events on mental health outcomes. Greater exposure to negative life events, such as parental conflict or loss of employment, may likely be a direct or indirect consequence of social, institutional, and interpersonal discrimination LGB individuals experience because of their sexual orientation. As of 2014, a majority of states do not have laws that protect LGB individuals from discrimination in schools, workplaces, housing, or public spaces, nor do many states recognize same-sex marriages and families,⁶⁰ highlighting existing structural sexual orientation discrimination. Similarly, although social attitudes towards sexual minority individuals have shifted over the past decade, a third of Americans continue to believe that homosexuality should be discouraged, 40% said they would be upset if their child was gay or lesbian, and nearly half believe that same-sex sexual behavior is a sin.⁶¹ Experiences of structural and interpersonal discrimination and stigma can have serious deleterious impacts on the mental health and well-being of sexual minority individuals.^{62,63}

Consistent with existing research, students who reported being unsure of their sexual identity had greater risk of psychological distress compared to heterosexual students.^{5,27} Unsure students, despite not identifying as LGB, may experience structural heterosexism and internalized homophobia.³³ They may also experience psychological distress as a result of uncertainty in exploring a new sexual identity, as well as being less integrated into the

LGB community.²⁷ Despite the importance of assessing the mental health of these individuals, findings for this group should be interpreted with caution.⁴² Unsure students in this study were more racially and ethnically diverse and younger than other sexual orientation groups, and were more likely to be international students. The terminology used in the survey (i.e., heterosexual, gay or lesbian, and bisexual) is historically and socioculturally specific, and thus may fail to adequately represent the diversity of sexual orientation identities, particularly among marginalized communities and those from other countries.⁶⁴

Although there were no significant differences in the odds of mental disorder diagnoses or FMD among heterosexual women based on sexual behavior (i.e., heterosexual versus discordant heterosexual), findings indicate that same-sex sexual behavior may have a significant impact on the mental health of self-identified heterosexual men. One possible explanation is that heterosexuality is policed more punitively among men, and the stress associated with concealing same-sex sexual behavior, along with internalized shame and stigma, may contribute to increased psychopathology for heterosexual men who have sex with men.^{5,11,65–67}

The findings point to a need for targeted interventions to improve the mental health and well-being of sexual minority college students, by providing evidence-based approaches to protecting students' mental health and creating a welcoming and inclusive campus climate. Given the significant consequences of discrimination and stigma on sexual minority students' mental health,^{11,15} colleges should ensure that sexual orientation is included as a protected class in anti-discrimination policies, and have mechanisms to effectively respond to discriminatory events. College campuses can also develop programs promoting visibility and demonstrating institutional support for these students.⁶⁴ Colleges should also provide training for healthcare professionals to increase their knowledge of sexual minority-specific health concerns, and enhance their ability to provide inclusive and sensitive services to these students.⁶⁸ Additional research is needed that explores effective college-based interventions to promote the mental health of sexual minority students.

Limitations

This study examined a broad range of mental health-related issues among college students by sexual orientation using a large population-based data set. However, this study was cross-sectional, and we cannot determine causality. The large sample size allowed a nuanced approach examining differences across gender-specific strata of sexual orientation; however, sample sizes may not have been sufficient to detect differences for some subgroups. Further, the generalizability may be limited owing to a lower response rate, and findings may not be generalizable to other geographic areas. A major strength was examining multiple mental health measures, allowing a more comprehensive understanding of mental health. However, mental disorder diagnoses may underestimate the true prevalence of disorders in the population because many disorders are not diagnosed.⁵² Additionally, there is no research examining the accuracy of self-reported diagnoses for this age group, although in other populations agreement between self-reports of diagnosed depression and medical records has high specificity.⁶⁹ Finally, the wording of the question did not specify that diagnoses

should only be included if from a medical professionals; therefore, respondents may also have included non-clinical diagnoses (e.g., self-diagnosis, online screening tools). Two factors mitigate these measurement limitations. First, the bias should tend toward underestimating disorder and should be similar across groups, giving us confidence about the patterns of prevalence across sexual orientation. Second, the use of FMD, a widely used mental distress measure that is independent of respondent engagement with mental health services, bolsters the study findings of mental health disparities by sexual orientation.

Conclusions

In 2011, the American Psychological Association characterized the mental health problems on college campuses as a crisis.⁷⁰ Psychological distress and psychopathology can have significant implications for students' success and retention in college.^{22–24} Therefore, the findings that sexual minority college students experience more mental disorder diagnoses, stressful life events, and FMD than their heterosexual counterparts are disconcerting. Although sexual minority students are likely to benefit from general interventions to improve student well-being, it is unlikely that these efforts alone will address the sexual orientation disparities in mental health. Instead, sexual minority students may require interventions that target the structural and social causes of these disparities, as well as individual-level interventions that consider the unique life experiences of sexual minority students.¹⁵

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

J.M. Przedworski was supported by the National Cancer Institute (R25CA163184). N.A. VanKim was supported by the National Institute of Diabetes and Digestive and Kidney Diseases (T32DK083250). Additional support was provided by the Eunice Kennedy Shriver National Institute of Child Health & Human Development (R21HD073120; Principal Investigator, M. Laska).

References

1. Reeves WC, Strine TW, Pratt LA, et al. Mental illness surveillance among adults in the United States. *MMWR Surveill Summ.* 2011; 60(3):1–29. [PubMed: 21881550]
2. Newman DL, Moffitt TE, Caspi A, Magdol L, Silva PA, Stanton WR. Psychiatric disorder in a birth cohort of young adults: prevalence, comorbidity, clinical significance, and new case incidence from ages 11 to 21. *J Consult Clin Psychol.* 1996; 64(3):552–562. <http://dx.doi.org/10.1037/0022-006X.64.3.552>. [PubMed: 8698949]
3. Hunt J, Eisenberg D. Mental health problems and help-seeking behavior among college students. *J Adolesc Heal.* 2010; 46(1):3–10. <http://dx.doi.org/10.1016/j.jadohealth.2009.08.008>.
4. King M, Semlyen J, Tai SS, et al. A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry.* 2008; 8:70. <http://dx.doi.org/10.1186/1471-244X-8-70>. [PubMed: 18706118]
5. Bostwick WB, Boyd CJ, Hughes TL, McCabe SE. Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States. *Am J Public Health.* 2010; 100(3): 468–475. <http://dx.doi.org/10.2105/AJPH.2008.152942>. [PubMed: 19696380]

6. Fergusson DM, Horwood LJ, Ridder EM, Beautrais AL. Sexual orientation and mental health in a birth cohort of young adults. *Psychol Med.* 2005; 35(7):971–981. <http://dx.doi.org/10.1017/S0033291704004222>. [PubMed: 16045064]
7. Cochran S, Sullivan J, Mays V. Prevalence of mental disorders, psychological distress, and mental services use among lesbian, gay, and bisexual adults in the United States. *J Consult Clin Psychol.* 2003; 71(1):53–61. <http://dx.doi.org/10.1037/0022-006X.71.1.53>. [PubMed: 12602425]
8. Mustanski BS, Garofalo R, Emerson EM. Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *Am J Public Health.* 2010; 100(12):2426–2432. <http://dx.doi.org/10.2105/AJPH.2009.178319>. [PubMed: 20966378]
9. Almazan EP, Roettger ME, Acosta PS. Measures of sexual minority status and suicide risk among young adults in the US. *Arch suicide Res.* 2014; 18(3):274–281. <http://dx.doi.org/10.1080/13811118.2013.824832>. [PubMed: 24611686]
10. IOM. *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding.* Washington DC: The National Academies Press; 2011.
11. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull.* 2003; 129(5):674–697. <http://dx.doi.org/10.1037/0033-2909.129.5.674>. [PubMed: 12956539]
12. Hatzenbuehler ML, Keyes KM, Hasin DS. State-level policies and psychiatric morbidity in lesbian, gay, and bisexual populations. *Am J Public Health.* 2009; 99(12):2275–2281. <http://dx.doi.org/10.2105/AJPH.2008.153510>. [PubMed: 19833997]
13. Herek GM, Garnets LD. Sexual orientation and mental health. *Annu Rev Clin Psychol.* 2007; 3:353–375. <http://dx.doi.org/10.1146/annurev.clinpsy.3.022806.091510>. [PubMed: 17716060]
14. Lehavot K, Simoni JM. The impact of minority stress on mental health and substance use among sexual minority women. *J Consult Clin Psychol.* 2011; 79(2):159–170. <http://dx.doi.org/10.1037/a0022839>. [PubMed: 21341888]
15. Hatzenbuehler ML. How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychol Bull.* 2009; 135(5):707–730. <http://dx.doi.org/10.1037/a0016441>. [PubMed: 19702379]
16. Eisenberg ME, Resnick MD. Suicidality among gay, lesbian and bisexual youth: the role of protective factors. *J Adolesc Health.* 2006; 39(5):662–668. <http://dx.doi.org/10.1016/j.jadohealth.2006.04.024>. [PubMed: 17046502]
17. Hatzenbuehler ML, Corbin WR, Fromme K. Trajectories and determinants of alcohol use among LGB young adults and their heterosexual peers: results from a prospective study. *Dev Psychol.* 2008; 44(1):81–90. <http://dx.doi.org/10.1037/0012-1649.44.1.81>. [PubMed: 18194007]
18. Teasdale B, Bradley-Engen MS. Adolescent same-sex attraction and mental health: the role of stress and support. *J Homosex.* 2010; 57(2):287–309. <http://dx.doi.org/10.1080/00918360903489127>. [PubMed: 20390994]
19. Tanner, JL.; Arnett, JJ. The emergence of “emerging adulthood”: The new life stage between adolescence and young adulthood. In: Furlong, A., editor. *Handbook of Youth and Young Adulthood: New perspectives and agendas.* London: Routledge; 2009. p. 39-45.
20. Tanner JL, Reinherz HZ, Beardslee WR, Fitzmaurice GM, Leis JA, Berger SR. Change in prevalence of psychiatric disorders from ages 21 to 30 in a community sample. *J Nerv Ment Dis.* 2007; 195(4):298–306. <http://dx.doi.org/10.1097/01.nmd.0000261952.13887.6e>. [PubMed: 17435479]
21. National Center for Education Statistics. Enrollment rates of 18- to 24-year-olds in degree-granting institutions, by level of institution and sex and race/ethnicity of student: 1967 through 2012. 2013. http://nces.ed.gov/programs/digest/d12/tables/dt12_239.asp
22. Eisenberg D, Golberstein E, Hunt JB. Mental Health and Academic Success in College. *BE J Econ Anal Policy.* 2009; 9(1)
23. Kessler CR, Foster CL, Saunders WB, Stang PE. Social Consequences of Psychiatric Disorders I: Educational Attainment. *Am J Psychiatry.* 1995; 152:1026–1032. <http://dx.doi.org/10.1176/ajp.152.7.1026>. [PubMed: 7793438]

24. Hysenbegasi A, Hass SL, Rowland CR. The impact of depression on the academic productivity of university students. *J Ment Health Policy Econ*. 2005; 8(3):145–151. [PubMed: 16278502]
25. Kerr DL, Santurri L, Peters P. A comparison of lesbian, bisexual, and heterosexual college undergraduate women on selected mental health issues. *J Am Coll Health*. 2013; 61(4):185–194. <http://dx.doi.org/10.1080/07448481.2013.787619>. [PubMed: 23663122]
26. Kisch J, Leino EV, Silverman MM. Aspects of suicidal behavior, depression, and treatment in college students: results from the spring 2000 national college health assessment survey. *Suicide Life Threat Behav*. 2005; 35(1):3–13. <http://dx.doi.org/10.1521/suli.35.1.3.59263>. [PubMed: 15843320]
27. Oswalt SB, Wyatt TJ. Sexual orientation and differences in mental health, stress, and academic performance in a national sample of U.S. college students. *J Homosex*. 2011; 58(9):1255–1280. <http://dx.doi.org/10.1080/00918369.2011.605738>. [PubMed: 21957858]
28. Hatzenbuehler ML, Slopen N, McLaughlin KA. Stressful Life Events, Sexual Orientation, and Cardiometabolic Risk Among Young Adults in the United States. *Heal Psychol*. 2014; 33(10): 1185–1194. <http://dx.doi.org/10.1037/hea0000126>.
29. Cochran SD. Emerging issues in research on lesbians' and gay men's mental health: Does sexual orientation really matter? *Am Psychol*. 2001; 56:931–947. <http://dx.doi.org/10.1037/0003-066X.56.11.931>. [PubMed: 11785169]
30. Goldbach JT, Tanner-Smith EE, Bagwell M, Dunlap S. Minority stress and substance use in sexual minority adolescents: a meta-analysis. *Prev Sci*. 2014; 15(3):350–363. <http://dx.doi.org/10.1007/s11121-013-0393-7>. [PubMed: 23605479]
31. Meyer IH, Wilson PA. Sampling lesbian, gay, and bisexual populations. *J Couns Psychol*. 2009; 56(1):23–31. <http://dx.doi.org/10.1037/a0014587>.
32. Bauer GR, Jairam JA. Are lesbians really women who have sex with women (WSW)? Methodological concerns in measuring sexual orientation in health research. *Women Health*. 2008; 48(4):383–408. <http://dx.doi.org/10.1080/03630240802575120>. [PubMed: 19301530]
33. Zhao Y, Montoro R, Igartua K, Thombs BD. Suicidal Ideation and Attempt Among Adolescents Reporting “Unsure” Sexual Identity or Heterosexual Identity Plus Same-Sex Attraction or Behavior: Forgotten Groups? *J Am Acad Child Adolesc Psychiatry*. 2010; 49(2):104–113. [PubMed: 20215932]
34. Weissman M, Klerman G. Sex differences and the epidemiology of depression. *Arch Gen Psychiatry*. 1977; 34(1):98–111. <http://dx.doi.org/10.1001/archpsyc.1977.01770130100011>. [PubMed: 319772]
35. Nolen-Hoeksema S. Sex differences in unipolar depression: evidence and theory. *Psychol Bull*. 1987; 101(2):259–282. <http://dx.doi.org/10.1037/0033-2909.101.2.259>. [PubMed: 3562707]
36. Kessler RC, McGonagle KA, Swartz M, Blazer DG, Nelson CB. Sex and depression in the National Comorbidity Survey. I: Lifetime prevalence, chronicity and recurrence. *J Affect Disord*. 1993; 29(2–3):85–96. [http://dx.doi.org/10.1016/0165-0327\(93\)90026-G](http://dx.doi.org/10.1016/0165-0327(93)90026-G). [PubMed: 8300981]
37. Piccinelli M. Gender differences in depression: Critical review. *Br J Psychiatry*. 2000; 177(6):486–492. <http://dx.doi.org/10.1192/bjp.177.6.486>. [PubMed: 11102321]
38. McLean CP, Asnaani A, Litz BT, Hofmann SG. Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. *J Psychiatr Res*. 2011; 45(8): 1027–1035. <http://dx.doi.org/10.1016/j.jpsychires.2011.03.006>. [PubMed: 21439576]
39. Laska MN, Pasch KE, Lust K, Story M, Ehlinger E. Latent class analysis of lifestyle characteristics and health risk behaviors among college youth. *Prev Sci*. 2009; 10(4):376–386. <http://dx.doi.org/10.1007/s11121-009-0140-2>. [PubMed: 19499339]
40. VanKim NA, Laska MN, Ehlinger E, Lust K, Story M. Understanding young adult physical activity, alcohol and tobacco use in community colleges and 4-year post-secondary institutions: A cross-sectional analysis of epidemiological surveillance data. *BMC Public Health*. 2010; 10(208)
41. National Center for Education Statistics. College Navigator. 2012. <http://nces.ed.gov/collegenavigator/?s=MN>
42. Laska MN, VanKim NA, Lust K, Erickson DJ, Eisenberg ME, Rosser BRS. Disparities in weight and weight behaviors by sexual orientation in college students. *Am J Public Health*. 2015; 105(1): 111–121. <http://dx/doi/org/10.2105/AJPH.2014.302094>. [PubMed: 25393177]

43. VanKim NA, Erickson D, Eisenberg ME, Lust K, Rosser BRS, Laska MN. Weight-related disparities for transgender college students. *Heal Behav Policy Rev.* 2014; 1(2):161–171. <http://dx.doi.org/10.14485/HBPR.1.2.8>.
44. Kaplowitz MD, Hadlock TD, Levine R. A Comparison of Web and Mail Survey Response Rates. *Public Opin Q.* 2004; 68:94–101. <http://dx.doi.org/10.1093/poq/nfh006>.
45. Porter SR, Umbach PD. Student survey response rates across institutions: Why do they vary? *Res High Educ.* 2006; 47:229–247. <http://dx.doi.org/10.1007/s11162-005-8887-1>.
46. Carini RM, Hayek JC, Kuh GD, Kennedy JM, Ouimet JA. College Student Responses to Web and Paper Surveys: Does Mode Matter?+ *Res High Educ.* 2003; 44(1):1–19. <http://dx.doi.org/10.1023/A:1021363527731>.
47. Paolo AM, Bonaminio GA, Gibson C, Partridge T, Kallail K. Response rate comparisons of e-mail- and mail-distributed student evaluations. *Teach Learn Med.* 2000; 12(2):81–84. http://dx.doi.org/10.1207/S15328015TLM1202_4. [PubMed: 11228682]
48. Wechsler H, Lee JE, Kuo M, Seibring M, Nelson TF, Lee H. Trends in college binge drinking during a period of increased prevention efforts. Findings from 4 Harvard School of Public Health College Alcohol Study surveys: 1993–2001. *J Am Coll Health.* 2002; 50:203–217. <http://dx.doi.org/10.1080/07448480209595713>. [PubMed: 11990979]
49. Corliss HL, Goodenow CS, Nichols L, Austin SB. High burden of homelessness among sexual-minority adolescents: findings from a representative Massachusetts high school sample. *Am J Public Heal.* 2011; 101(9):1683–1689. <http://dx.doi.org/10.2105/AJPH.2011.300155>.
50. Zahran HS, Kobau R, Moriarty DG, Zack MM, Giles WH, Lando J. Self-reported frequent mental distress among adults-- United States, 1993–2001. *MMWR.* 2004; 53(41):963–966. [PubMed: 15496824]
51. Nelson MC, Lust K, Story M, Ehlinger E. Credit card debt, stress and key health risk behaviors among college students. *Am J Heal Promot.* 2008; 22(6):400–407. <http://dx.doi.org/10.4278/ajhp.22.6.400>.
52. Fan AZ, Strine TW, Huang Y, et al. Self-rated depression and physician-diagnosed depression and anxiety in Florida adults: Behavioral Risk Factor Surveillance System, 2006. *Prev Chronic Dis.* 2009; 6(1):A10. [PubMed: 19080016]
53. Lindley LL, Walsemann KM, Carter JW. The association of sexual orientation measures with young adults' health-related outcomes. *Am J Public Health.* 2012; 102(6):1177–1185. <http://dx.doi.org/10.2105/AJPH.2011.300262>. [PubMed: 22021310]
54. Marshal MP, Dietz LJ, Friedman MS, et al. Suicidality and depression disparities between sexual minority and heterosexual youth: a meta-analytic review. *J Adolesc Health.* 2011; 49(2):115–123. <http://dx.doi.org/10.1016/j.jadohealth.2011.02.005>. [PubMed: 21783042]
55. Bostwick W. Assessing Bisexual Stigma and Mental Health Status: A Brief Report. *J Bisex.* 2012; 12(2):214–222. <http://dx.doi.org/10.1080/15299716.2012.674860>. [PubMed: 24683314]
56. Jorm AF, Korten AE, Rodgers B, Jacomb PA, Christensen H. Sexual orientation and mental health: results from a community survey of young and middle-aged adults. *Br J Psychiatry.* 2002; 180(5):423–427. <http://dx.doi.org/10.1192/bjp.180.5.423>. [PubMed: 11983639]
57. Balsam KF, Mohr JJ. Adaptation to sexual orientation stigma: A comparison of bisexual and lesbian/gay adults. *J Couns Psychol.* 2007; 54(3):306–319. <http://dx.doi.org/10.1037/0022-0167.54.3.306>.
58. Sheets RL, Mohr JJ. Perceived social support from friends and family and psychosocial functioning in bisexual young adult college students. *J Couns Psychol.* 2009; 56(1):152–163. <http://dx.doi.org/10.1037/0022-0167.56.1.152>.
59. Przedworski JM, McAlpine D, Karaca-Mandic P, VanKim NA. Health and health risks among sexual minority women: An examination of 3 subgroups. *Am J Public Heal.* 2014; 104(6):1045–1047. <http://dx.doi.org/10.2105/AJPH.2013.301733>.
60. Human Rights Campaign. Maps of State Laws and Policies. 2014. <http://www.hrc.org/resources/entry/maps-of-state-laws-policies>
61. Pew Research Center. In Gay Marriage Debate, Both Supporters and Opponents See Legal Recognition as “Inevitable”. 2013. <http://www.people-press.org/2013/06/06/in-gay-marriage-debate-both-supporters-and-opponents-see-legal-recognition-as-inevitable>

62. Mays VM, Cochran SD. Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *Am J Public Health*. 2001; 91(11):1869–1876. <http://dx.doi.org/10.2105/AJPH.91.11.1869>. [PubMed: 11684618]
63. Hatzenbuehler ML, McLaughlin KA, Keyes KM, Hasin DS. The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: a prospective study. *Am J Public Health*. 2010; 100(3):452–459. <http://dx.doi.org/10.2105/AJPH.2009.168815>. [PubMed: 20075314]
64. Rankin SR. LGBTQA Students on Campus: Is Higher Education Making the Grade ? *J Gay Lesbian Issues Educ*. 2006; 3(2/3):111–118. http://dx.doi.org/10.1300/J367v03n02_11.
65. Rosser BRS, Bockting WO, Ross MW, Miner MH, Coleman E. The relationship between homosexuality, internalized homo-negativity, and mental health in men who have sex with men. *J Homosex*. 2008; 55(2):185–203. <http://dx.doi.org/10.1080/00918360802129394>. [PubMed: 18982569]
66. Ratcliff JJ, Lassiter GD, Markman KD, Snyder CJ. Gender differences in attitudes toward gay men and lesbians: the role of motivation to respond without prejudice. *Pers Soc Psychol Bull*. 2006; 32(10):1325–1338. <http://dx.doi.org/10.1177/0146167206290213>. [PubMed: 16963604]
67. Mills T, Paul J, Stall R. Distress and depression in men who have sex with men: The Urban Men's Health Study. *Am J Psychiatry*. 2004; 161(2):278–285. <http://dx.doi.org/10.1176/appi.ajp.161.2.278>. [PubMed: 14754777]
68. Rankin, SR. *Campus Climate for Gay, Lesbian, Bisexual, and Transgender People: A National Perspective*. New York: The National Gay and Lesbian Task Force Policy Institute; 2003.
69. Singh JA. Accuracy of Veterans Affairs Databases for Diagnoses of Chronic Diseases. *Prev Chronic Dis*. 2009; 6(4):A126. http://www.cdc.gov/pcd/issues/2009/oct/08_0263.htm. [PubMed: 19755002]
70. Eiser, A. The crisis on campus: APA is working with Congress to address serious mental health problems on college campuses. American Psychological Association; 2011. <http://www.apa.org/monitor/2011/09/crisis-campus.aspx>

Table 1
 Sample Prevalence of Sociodemographic Characteristics Among Females by Sexual Orientation

	Heterosexual <i>n</i> =20,177	Discordant heterosexual <i>n</i> =166	Gay <i>n</i> =258	Bisexual <i>n</i> =757	Unsure <i>n</i> =346
<i>Variable (Wald χ^2, df, p)</i>	93.0%	0.8%	1.2%	3.5%	1.6%
Age, median	22	23	26	22	21
School type (44.5, 4, <0.001)					
4-year (ref)	64.2%	68.1%	71.7%	62.8%	50.3%
2-year	35.8%	31.9%	28.3%	37.3%	49.7%*
Insurance (18.9, 4, <0.001)					
Yes (ref)	93.2%	90.9%	92.6%	89.3%	89.2%
No	6.8%	9.2%	7.5%	10.7%*	10.9%*
Relationship status (193.8, 12, <0.001)					
Single (ref)	36.8%	34.9%	30.6%	39.6%	57.5%
Married/Dom. Partner	21.8%	23.5%	26.4%*	15.2%*	12.7%*
Engaged/Committed	37.8%	37.4%	41.9%*	42.8%	28.3%*
Separated/Divorced/Widowed	3.6%	4.2%	1.2%	2.4%*	1.5%*
Student status (185.8, 8, 0.001)					
First-time undergrad (ref)	20.2%	15.7%	17.4%	21.5%	32.1%
Other undergrad	67.9%	71.7%	64.3%	69.5%	61.9%*
Graduate student	11.9%	12.7%	18.2%*	9.0%*	6.1%*
Race/ethnicity (93.3, 4, <0.001)					
White (ref)	84.7%	83.7%	86.1%	83.0%	61.0%
Non-white	15.3%	16.3%	14.0%	17.0%	39.0%*
Has children (36.3, 4, <0.001)					
No (ref)	77.0%	72.9%	90.3%	81.8%	79.2%
Yes	23.1%	27.1%	9.7%*	18.2%*	20.8%

Variable (Wald χ^2 , df, p)	Heterosexual n=20,177	Discordant heterosexual n=166	Gay n=258	Bisexual n=757	Unsure n=346
International student (98.4, 4, <0.0001)					
No (ref)	97.1%	98.2%	98.1%	97.8%	89.0%
Yes	3.0%	1.8%	2.0%	2.3%	11.0%*
Living arrangement (227.3, 16, <0.0001)					
Parent's Home (ref)	15.7%	9.0%	8.9%	17.7%	28.3%
Rent or Share Rent	41.7%	56.6%*	45.4%*	47.8%	34.7%*
Residence Hall	15.8%	7.2%	15.5%	18.9%	19.9%
Own A House	22.9%	21.7%*	25.2%*	11.4%*	10.7%*
Other	3.8%	5.4%*	5.0%*	4.2%	6.4%
Hours worked for pay (73.1, 8, <0.0001)					
0–10 hours (ref)	40.5%	31.5%	38.7%	42.6%	52.6%
11–30 hours	36.7%	41.8%*	31.6%	38.0%	32.5%*
31+ hours	22.8%	26.7%*	29.7%	19.4%	14.9%*
Credit card debt (42.6, 4, <0.0001)					
Not applicable/None (ref)	61.0%	58.4%	55.8%	62.0%	76.5%
Any	39.0%	41.6%	44.2%	38.0%	23.5%*
Mental health service utilization (180.4, 4, <0.0001)					
Yes (ref)	25.5%	34.3%	50.8%	45.2%	37.1%
No	74.5%	65.7%*	49.2%*	54.8%*	62.9%*

Note: Data from the Minnesota College Student Health Survey, 2007–2011.

Boldface indicates statistical significance (p-value <0.05)

* statistically different from "Heterosexual" at p<0.05, adjusted for school clustering

Table 2
Sample Prevalence of Sociodemographic Characteristics Among Males by Sexual Orientation

Variable (Wald χ^2 , df, p)	Sexual Orientation				
	Heterosexual n=11,630	Discordant heterosexual n=106	Gay n=361	Bisexual n=201	Unsure n=200
Age, median	22	22	23	22	21
School type (10.0, 4, 0.04)					
4-year (ref)	67.0%	62.3%	69.5%	62.7%	58.0%
2-year	33.0%	37.7%	30.5%	37.3%	42.0%*
Insurance (86.3, 4, <0.001)					
Yes (ref)	90.3%	95.2%	86.4%	93.0%	79.1%
No	9.7%	4.8%	13.7%*	7.0%	20.9%*
Relationship status (212.1, 12, <0.001)					
Single (ref)	49.5%	33.0%	62.3%	62.2%	72.5%
Married/Dom. Partner	18.0%	27.4%*	11.4%*	15.4%	10.0%*
Engaged/Committed	30.9%	38.7%*	24.7%*	21.4%*	16.0%*
Separated/Divorced/Widowed	1.5%	0.9%	1.7%	1.0%	1.5%
Student status (31.5, 8, <0.001)					
First-time undergrad (ref)	22.3%	20.8%	19.1%	24.9%	30.0%
Other undergrad	67.0%	70.8%	65.4%	69.7%	61.0%*
Graduate student	10.7%	8.5%	15.5%*	5.5%*	9.0%
Race/ethnicity (100.0, 4, <0.001)					
White (ref)	82.2%	82.1%	82.8%	73.6%	54.8%
Non-white	17.9%	17.9%	17.2%	26.4%*	45.2%*
Has children (49.1, 4, <0.001)					
No (ref)	86.4%	77.4%	98.9%	88.1%	94.0%
Yes	13.6%	22.6%*	1.1%*	11.9%	6.0%*

Variable (Wald χ^2 , df, p)	Heterosexual n=11,630	Discordant heterosexual n=106	Gay n=361	Bisexual n=201	Unsure n=200
International student (46.4, 4, <0.0001)					
No (ref)	95.1%	93.4%	96.4%	92.5%	83.0%
Yes	4.9%	6.6%	3.6%*	7.5%*	17.0%*
Living arrangement (137.8, 16, <0.0001)					
Parent's Home (ref)	18.3%	14.2%	13.0%	20.5%	30.5%
Rent or Share Rent	45.7%	47.2%	48.5%	48.5%	34.5%*
Residence Hall	17.9%	12.3%	20.8%	17.5%	17.0%*
Own A House	15.4%	20.8%	13.6%	10.5%*	9.5%*
Other	2.9%	5.7%*	4.2%*	3.0%	8.5%*
Hours worked for pay (23.6, 8, 0.0003)					
0–10 hours (ref)	48.9%	38.7%	40.7%	51.2%	50.3%
11–30 hours	32.0%	37.7%	36.3%*	30.4%	38.1%
31+ hours	19.1%	23.6%	23.0%*	18.4%	11.7%
Credit card debt (34.8, 4, <0.0001)					
Not applicable/None (ref)	67.8%	58.5%	54.9%	65.2%	78.5%
Any	32.2%	41.5%	45.2%*	34.8%	21.5%*
Mental health service utilization (82.1, 4, <0.0001)					
Yes (ref)	22.1%	29.4%	33.3%	38.7%	29.2%
No	77.9%	70.6%	66.7%*	61.3%*	70.8%*

Note: Data from the Minnesota College Student Health Survey, 2007–2011.

Boldface indicates statistical significance ($p < 0.05$)

* statistically different from "Heterosexual" at $p < 0.05$, adjusted for school clustering

Table 3
 Sample Prevalence of Mental Disorders, FMD, and Stressful Life Events Among Females by Sexual Orientation

	Heterosexual	Discordant heterosexual	Gay	Bisexual	Unsure	<i>p</i> -value ^d
	<i>n</i> =20,177	<i>n</i> =166	<i>n</i> =258	<i>n</i> =757	<i>n</i> =346	
	93.0%	0.8%	1.2%	3.5%	1.6%	
Mental disorder diagnoses, past year						
Anorexia	0.5%	0.0%	0.4%	1.5%*	1.6%*	<0.001
Anxiety	10.8%	12.0%	18.4%*	18.1%*	9.3%	<0.001
Attention deficit disorder	1.7%	4.5%*	5.7%*	3.7%*	4.3%*	<0.001
Bipolar disorder	0.5%	1.9%*	2.9%*	2.8%*	1.6%*	<0.001
Bulimia	0.5%	1.3%	1.2%	1.8%*	0.3%	<0.001
Depression	9.8%	12.7%	15.6%*	18.0%*	10.2%	<0.001
Obsessive-compulsive	0.9%	1.3%	4.1%*	2.8%*	1.3%	<0.001
Panic attacks	4.2%	5.1%	6.0%	11.0%*	4.4%	<0.001
Post-traumatic stress	1.2%	1.3%	5.7%*	5.3%*	0.6%	<0.001
Seasonal affective disorder	2.0%	3.9%	3.7%	5.1%*	2.8%	<0.001
Social phobia/performance anxiety	1.7%	3.2%	3.6%*	5.9%*	2.8%	<0.001
Any mental disorder diagnosis	17.1%	22.0%	32.4%*	31.9%*	17.9%	<0.001
2+ mental disorder diagnoses	9.1%	12.6%	15.0%*	19.5%*	9.2%	<0.001
<hr/>						
Frequent mental distress (FMD)	15.6%	18.8%	23.6%*	27.5%*	23.4%*	<0.001
<hr/>						
Any stressful life event	56.6%	63.9%*	67.8%*	75.8%*	59.5%	<0.001
2+ stressful life events	29.6%	39.8%*	40.7%*	54.0%*	34.4%*	<0.001

Note: Data from the Minnesota College Student Health Survey, 2007–2011.

Boldface indicates statistical significance (*p*<0.05)

^aWald chi-square test, adjusted for school clustering

* statistically different from “Heterosexual” at *p*<0.05, adjusted for school clustering

Table 4
 Sample Prevalence of Mental Disorders, FMD, and Stressful Life Events Among Males by Sexual Orientation

	Heterosexual <i>n</i> =11,630 93.1%	Discordant heterosexual <i>n</i> =106 0.9%	Gay <i>n</i> =361 2.9%	Bisexual <i>n</i> =201 1.6%	Unsure <i>n</i> =200 1.6%	<i>p</i> -value ^d
Mental disorder diagnoses, past year						
Anorexia	0.2%	2.1%*	2.3%*	0.5%	1.0%*	<0.001
Anxiety	4.9%	9.4%	10.8%*	15.0%*	4.7%	<0.001
Attention deficit disorder	2.0%	2.1%	5.4%*	4.2%*	1.0%	<0.001
Bipolar disorder	0.4%	2.1%	1.1%*	2.6%*	0.5%	<0.001
Bulimia	0.1%	2.1%*	0.9%*	0.5%*	1.0%*	<0.001
Depression	4.8%	10.4%*	11.6%*	16.0%*	5.2%	<0.001
Obsessive-compulsive	0.5%	1.0%	2.3%*	2.1%*	0.5%	<0.001
Panic attacks	1.7%	5.2%*	4.3%*	5.7%*	1.1%	<0.001
Post-traumatic stress	0.7%	4.2%*	1.1%	1.6%	1.6%	0.002
Seasonal affective disorder	1.0%	2.1%	4.3%*	2.6%*	1.6%	<0.001
Social phobia/performance anxiety	1.5%	2.1%	4.0%*	2.6%	0.5%	<0.001
Any mental disorder diagnosis	9.3%	13.1%	20.1%*	22.7%*	8.3%	<0.001
2+ mental disorder diagnoses	4.5%	10.1%*	11.9%*	13.4%*	4.2%	<0.001
<hr/>						
Frequent mental distress (FMD)	9.4%	7.6%	16.9%*	22.4%*	15.5%*	<0.001
<hr/>						
Any stressful life event	50.0%	54.7%	62.6%*	63.7%*	53.5%	<0.001
2+ stressful life events	24.5%	36.8%*	37.7%*	41.3%*	28.5%	<0.001

Note: Data from the Minnesota College Student Health Survey, 2007–2011

Boldface indicates statistical significance (*p*<0.05)

^aWald chi-square test, adjusted for school clustering

* statistically different from “Heterosexual” at *p*<0.05, adjusted for school clustering

Table 5

Mental Health Diagnoses, FMD, and Stressful Life Events: Adjusted Odds by Gender and Sexual Orientation

	Female			
	Discordant heterosexual	Gay	Bisexual	Unsure
Any mental disorder diagnosis	1.2 (0.7–2.1)	2.5 (1.8–3.4)	2.3 (1.9–2.8)	1.1 (0.8–1.6)
2 mental disorder diagnoses	1.2 (0.8–1.8)	1.8 (1.2–2.5)	2.4 (1.9–3.0)	1.1 (0.7–1.5)
Frequent mental distress (FMD)	1.2 (0.8–1.7)	1.9 (1.3–2.7)	1.9 (1.6–2.3)	1.6 (1.2–2.0)
Any stressful life event	1.3 (0.9–1.8)	1.9 (1.4–2.5)	2.3 (2.0–2.6)	1.1 (0.9–1.3)
2 stressful life events	1.6 (1.2–2.1)	1.9 (1.5–2.2)	2.7 (2.4–3.1)	1.3 (1.0–1.6)

	Male			
	Discordant heterosexual	Gay	Bisexual	Unsure
Any mental disorder diagnosis	1.5 (0.8–2.6)	2.4 (1.8–3.2)	2.8 (2.1–3.8)	1.0 (0.6–1.7)
2 mental disorder diagnoses	2.4 (1.3–4.6)	2.8 (1.9–4.2)	3.1 (2.2–4.4)	1.0 (0.5–2.0)
Frequent mental distress (FMD)	0.8 (0.4–1.7)	1.9 (1.5–2.3)	2.6 (2.0–3.5)	1.6 (1.1–2.3)
Any stressful life event	1.2 (0.9–1.6)	1.6 (1.2–1.9)	1.7 (1.3–2.2)	1.3 (0.9–1.8)
2 stressful life events	1.7 (1.2–2.5)	1.7 (1.4–2.1)	2.1 (1.6–2.6)	1.3 (0.9–1.9)

Notes: Data from the Minnesota College Student Health Survey, 2007–2011

Boldface indicates statistical significance ($p < 0.05$)

Reference group: heterosexual

CIs adjusted for school clustering

Adjusted for school type, insurance status, age, relationship status, student status, race, ethnicity, children, international student status, living arrangement, SES measures