Access and Barriers to Health Services Among Sexual and Gender Minority College Students

by

Carlee Conner

A THESIS

submitted to

Oregon State University

Honors College

in partial fulfillment of

the requirements for the

degree of

Honors Baccalaureate of Honors Baccalaureate of Science in Psychology

(Honors Scholar)

Presented May 28th, 2020

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Sarah Dermody

College is a vital time to address both emotional and physical health, especially among at-risk populations such as sexual and gender minority college students. However, it has not always been clear whether health services on college campuses are actually reaching these students. The current study aimed to determine if sexual and gender minority students in Oregon exhibit different patterns of mental health symptoms and substance use, access to corresponding resources, and endorsement of barriers to services than their heterosexual and cisgender counterparts. Participants completed an online questionnaire that asked about sexual and gender identity, mental health and substance use symptoms, utilization of campus services, and barriers to accessing such services. It was found that sexual and gender minority students reported significantly higher levels of reported psychological distress and that bi or pansexual students demonstrated greater odds for marijuana use and misuse of prescription drugs compared to their heterosexual or cisgender counterparts. Sexual and gender minorities had greater odds of using on-campus psychological services. Among those who did not use any services, sexual and gender minorities reported more barriers to obtaining these services than their cisgender and heterosexual counterparts. These findings support the need for identity specific mental health and substance use support services on college campuses in order to address these disparities.

Key Words: Sexual and gender minority, mental health, substance use, disparities

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I understand that my project will become part of the permanent collection of Oregon State University, Honors College. My signature below authorizes release of my project to any reader upon request.

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Carlee Conner, Author

Access and Barriers to Health Services Among Sexual and Gender Minority College Students

Introduction

The college years are a critical time to address physical and mental health. While college environments can positively influence student health, it is also a time when many students engage in risky behaviors, such as binge drinking and drug use (Krieger, 2018). Furthermore, students can experience increases in mental health symptoms (Pedrelli, Nyer, Yeung, Zulauf, and Wilens, 2015). The wellness of college and university students may be influenced by a number of social determinants, such as availability and utilization of community-based and university-based resources (Dunbar et al., 2017), social support (Lee et al., 2014; Whiteman et al., 2013; Blanco et al., 2008), and social norms and attitudes (e.g., discrimination, racism; Longerbeam et al., 2007; Woodford et al., 2012; Byrd et al., 2012).

While research has supported correlations between these social determinants and wellness of college students in general, much less is known about how these factors contribute to well-established disparities in health and wellness between majority and minority groups that traditionally coexist on campuses. For instance, sexual minority youth and young adults are at an increased risk relative to their heterosexual counterparts for engaging in substance use (Marshal et al., 2008; Goldbach et al., 2014; Dermody et al., 2014) and for experiencing anxious or depressed mood (Burton et al., 2013; Marshal et al., 2013). Transgender identity has also been associated with higher odds of reported discrimination and depression symptoms when compared with non-transgender individuals (Su et al., 2016). Thus, in order to better understand the basis for such disparities between sexual and gender minorities and cisgender heterosexual young adults, the present study examined the relationship between sexual and gender identity with

college and university student health and wellness (chiefly substance use and mental health) and utilization of university-based resources.

Sexual and Gender Minorities on College Campuses

The language used to describe sexuality and gender is incredibly dynamic and can vary based on context. This paper uses "sexual minority" as a label to describe an overarching group of individuals that identify with a sexual identity other than heterosexual, report same-sex attraction, and/or report same-sex sexual behavior. The term "gender minority" is used here to describe an additional overarching group of individuals whose gender identity aligns outside of the generally binary system of cisgender classification, including transgender and gender non-conforming individuals. The acronym "LGBTQQ+" is used here to describe the broad and collective range of sexual and gender minority identities, and stands for "lesbian, gay, bisexual, transgender, queer, questioning." The plus refers to the broader range of diverse identities in the community. Various studies referenced in the current paper utilize different parts of this acronym depending on the groups represented. Though there is often overlap between these groups, these two overarching categories of sexual and gender minorities are often used to explore differential health trends that could exist given the nuanced distinction society makes between sexuality and gender.

Many college students hold minority sexual or gender identities; however, their needs appear to be underserved. In 2016, the American College Health Association found that out of a sample of more than 33,000 undergraduate students, 10% identified as gay, lesbian, bisexual, trans, asexual, pansexual, or questioning. When examining the mental health and health care experiences of college students with trans or non-binary gender identities, there is reason to believe that collegiate environments have historically under-served trans and non-binary

students. For example, during college, many trans individuals are seeking identity-specific professional health services for the first time; however, trans and non-binary students struggle with navigating collegiate healthcare settings that often lack competent, sensitive, and informed services (Goldberg, Kuvalanka, Budge, Benz, and Smith, 2019).

For many, the college years line up with critical stages of psychosocial development during early adulthood, and that is part of why this period is a crucial time to support the health and wellness of sexual and gender minority students. Despite recent changes to improve inclusivity on college campuses, sexual and gender minorities have still historically been marginalized or erased by discriminatory institutional and social forces. For example, the self-reported on-campus experiences of LGBTQ students attending a public university in the Midwest were characterized by themes of negative experiences, feeling categorized, and practicing self-censorship (Bardhoshi, Grieve, Swanston, Suing, & Booth, 2018). LGBTQ individuals on college campuses are also likely to be subjected to both blatant and subversive forms of discrimination, both of which are associated with psychological distress, increased stress or anxiety, and lowered self-esteem- especially among trans identifying individuals (Seelman, Woodford, & Nicolazzo, 2017).

These stressful experiences faced by sexual and gender minorities on college campuses and elsewhere are believed to put them at risk for a number of negative health and mental health outcomes. The role of minority stress is described by the Minority Stress Theory, which is the main foundational theory for exploring the effect of systemic and social factors that impact the well-being of sexual and gender minority groups (Meyer, 2003). Minority stress is a term that historically has been used to describe the chronic stressors that are embedded in the social position of people in marginalized communities. These stressors often stem from acts of

prejudice and systemic inequities and, for sexual and gender minority individuals, these stressors are thought to be the root cause of a variety of health-related conditions including psychological disorders and an overall sense of wellbeing (Meyer 2013). Minority stress related to marginalized identities has been linked to psychological distress among gay men, lesbians, and trans people in general and likely contribute to elevated rates of distress observed among LGBTQ college students. As described in the sections below, these minority stressors may play an important role in the increased mental health symptoms and substance use exhibited by sexual and gender minority individuals on college campuses.

Mental Health of Sexual and Gender Minority College Students

As previously mentioned, the long-term impact of being exposed to chronically stressful events or environments can have a serious impact on the mental health outcomes of sexual and gender minority students. For example, a study using data (N = 27,454) from the American College Health Association (ACHA)-National College Health Assessment found that gay, lesbian, bisexual, and students unsure of their identity consistently reported higher levels of mental health issues as well as more frequent impact of mental health on academics than their heterosexual counterparts (Oswalt & Wyatt, 2011). A separate review of the same wave of data from the ACHA-National College Health Assessment found that specifically bisexual women reported the worst mental health status in all areas studied including anxiety, anger, depressive symptoms, self-injury, and suicidal ideation and attempts (Kerr, Santurri, and Peters, 2013). They also found that both bisexual women and lesbians had a far greater likelihood of having these mental health issues when compared with heterosexual women. In a separate study that drew data from the 2015–2017 Healthy Minds Study (N = 65,213 at 71 U.S. campuses), a significantly higher prevalence of various mental health symptoms (depression, anxiety, eating

disorders, self-injury, and suicidality) was observed in gender minority students than cisgender students (Ketchen, Raifman, Abelson, and Reisner, 2019). Specifically, 78% of gender minority students met clinically validated screening criteria for one or more of the aforementioned mental health outcomes compared to only 45% of cisgender students. Given these mental health inequities, it is clear that interventions are needed for this vulnerable population of students.

Substance Use of Gender & Sexual Minority College Students

Substance use and abuse is another issue that sexual and gender minorities are impacted disproportionately by, which is also thought to be due to minority stress. In fact, a study of college students across the United States (N = 2,497) utilized the minority stress theory as a conceptual framework by which to examine the intersection between sexual orientation, experiencing and witnessing incivility and hostility, and students' alcohol and drug use (Woodford, Krentzman, & Gattis, 2012). It was found that experiencing incivility and witnessing hostility were both more likely to happen to college students with sexual minority status, and that both of these experiences mediated the relationship between sexual minority status and problematic drinking. Further research utilizing data from the ACHA-NCHA-II survey aimed to compare alcohol, tobacco, and other drug use of lesbian, bisexual, and heterosexual undergraduate college women and found that bisexual women had greater odds of using alcohol, tobacco, and marijuana than heterosexual women and lesbians (Kerr, Ding, Burke, & Ott-Walter, 2015). In a separate study analyzing non-medical use of prescription drugs among first-year university students, lesbian, bisexual, and questioning students reported higher rates of nonmedical use of prescription drugs and painkillers than heterosexual students and gay men (Shadick, Dagirmanjian, Trub & Dawson, 2016). These findings are suggestive of differential problematic substance use trends among female identifying bisexual college students.

Many gaps in the literature exist when analyzing substance use trends specifically among transgender college students. There is some research supporting that transgender students are less likely to report heavy episodic drinking than cisgender male students, but not cisgender female students; however, transgender students report more days of heavy episodic drinking (Coulter et al., 2015). Some alcohol-related harms may be more common among transgender students, like suicidal ideation and sexual assault, and others less likely, like forgetting where they were or what they did while drinking compared to cisgender students. Additionally, broader research demonstrates a higher prevalence of alcohol and illicit drug use among transgender adults compared with the general population (Staples et al., 2018; Kecojevic et al., 2012; Benotsch et al., 2013). Given these various substance use disparities for sexual and gender minority individuals, it is clear that LGBTQ+ specific campus resources or services would be beneficial to this population.

Sexual and Gender Minority Barriers to Help-Seeking

While sexual and gender minority individuals are at risk for elevated mental health symptoms and substance use, it is not clear that they are receiving the support that would help them overcome these outcomes. University campuses traditionally have a variety of relevant resources available to students in general, such as Counseling and Psychological Services (CAPS) and Student Health Services. Nevertheless, one cannot assume that the presence of these services on campuses means that they are being utilized by those who need them. In fact, it is not well understood whether or not sexual and gender minority individuals are actually seeking out and receiving the services they need for the aforementioned mental health and substance use challenges.

Due to the climate of prejudice and discrimination that sexual and gender minority communities face, many barriers exist at the individual, clinician, and systemic level when trying to access health services (Whaibeh, Mahmoud, & Vogt, 2019). Sexual and gender minority individuals living with one or more mental health conditions often face stigma, discrimination, prejudice, denial of civil and human rights, abuse, harassment, victimization, social exclusion, and family rejection based on their gender or sexual identity in addition to the stigma surrounding mental illness (Whaibeh et al., 2019). This double-layered effect of having intersecting marginalized identities can be a barrier to mental health or substance use services at the individual level. Additionally, characteristics of service or care providers can create barriers to utilization of health resources for sexual and gender minority communities. Lack of cultural competency, negative reactions to disclosure of identity, subjection to harsh internal exams, being made to feel like their identity was a pathological condition, and even being refused care altogether are all very real concerns that often drive sexual and gender minority people to avoid healthcare altogether (Whaibeh et al., 2019).

Given this background of minority stress and barriers to healthcare in the sexual and gender minority community, it is important to understand what health utilization barriers exist specifically for this community in collegiate settings. There appears to be one preexisting study that has examined health service utilization and barriers among LGBQQ college students using data from over 33,000 students across the state of California (Dunbar et al., 2017). In 2013, the researchers distributed an online survey to nine different California higher education institutions asking students about mental health needs and service utilization. Specifically LGBQQ respondents included 7% of students (n = 2,377) who answered yes to the question, “Do you identify as lesbian, gay, bisexual, transgender, queer, or questioning?” LGBQQ students were

more likely to report current psychological distress (i.e. need for mental health treatment), mental health related academic impairment, and higher overall stress; however nearly two-thirds of the LGBQQ identifying individuals who needed treatment reported they did not utilize services. Additionally, LGBQQ students were significantly more likely to endorse all of the barriers to on-campus mental health service use that were examined including lack of confidentiality, embarrassment, knowledge about access to/availability of services, eligibility concerns, costs, inconvenient hours, and poor reputation of these services. Though LGBQQ individuals reported greater utilization of mental health services more than their heterosexual counterparts, which is a positive in terms of addressing some of these disparities, utilization was overall still quite low for those who appeared to need it.

While Dunbar et al. (2017) found significant differences in LGBQQ and non-LGBQQ students' patterns of mental health service utilization and barriers, there are some key limitations that need to be addressed. For example, this sample was drawn from public education institutions not including community colleges in the state of California. Due to the fact that many community colleges do not provide any mental health services, excluding community colleges likely underrepresents the unmet need for mental health services among LGBQQ college students. Another limitation is that the study excluded data from trans-identifying individuals (n = 176) and that specific sexual minority identities were not assessed (i.e., everyone was grouped into the LGBQQ umbrella). Therefore, these results do not necessarily reflect experiences of gender minorities and it was not possible to compare outcomes between sexual minority groups. Finally, questions only pertained to mental health and not substance use services. Given these limitations, the current study accounted for both sexual and gender minority groups and analyzed

differences in mental health and substance use service utilization and barriers within different subsets of LGBTQQ+ identities.

Aims of the Current Study

To better understand the health and wellness of sexual and gender minority college students and their ability to access campus services, the present study had three broad aims. The first aim of this study was to determine if sexual and gender minority students in Oregon exhibit different patterns of mental health symptoms and substance use than heterosexual and cisgender counterparts. The second aim was to evaluate if sexual and gender minority students differentially access mental health and substance use resources both on and off-campus. A third aim of this study was to determine what barriers exist for sexual and gender minority students when trying to access these various resources both on and off-campus. We hypothesized that sexual and gender minority students would report higher levels of mental health symptoms and substance use, access mental health and substance use services more than their heterosexual and cisgender counterparts, and endorse more barriers to services.

Methods

Participants

Inclusion criteria for the study included being over the age of 18, currently enrolled at least part-time at a college or university in the state of Oregon, and English literacy. People of any gender, sexual orientation, ability, or racial/ethnic identity were recruited for this study. There were 2,194 individuals who attempted to complete the survey. Of these, 23 were excluded because they were not eligible based on the screening questions or they did not complete questions beyond the screening questions, and 23 were excluded because they terminated the survey prior to the end of the survey. We also screened out for careless responders using

methods established in online research with undergraduate students receiving course credit (Meade & Craig, 2012). This included excluding 11 individuals who took less than 4 minutes to complete the survey, which was the quickest 2% of the sample, and 87 individuals who responded no to the question "In your honest opinion, should we use your data?" Lastly, 158 were excluded from analyses because they were missing on covariates and/or main predictor variables. This resulted in a final N = 1,892.

Procedure

The survey was open to all undergraduate and graduate students who fit the study's inclusion criteria. This included the SONA subject pool participants at Oregon State University as well as participants recruited from the broader collegiate community in Oregon. Participants signed up for the study using an anonymous link to the survey accessed via the SONA system or on printed or electronic recruitment materials. Recruitment of students more broadly across the state of Oregon was conducted by sending electronic recruitment materials to LGBTQ+ specific campus groups or other relevant contacts at other colleges. The study took the form of an online Qualtrics survey that participants could take at a time and location of their choosing. Participants were first presented with the Explanation of Research, which included the purpose of the research as well as the activities, time, risks, benefits, and compensation involved. A statement about participant confidentiality and the voluntary nature of the study was provided along with the contact information for the principal investigator. They were asked if they would like to participate in the study, and were allowed to proceed if they selected "Yes." Upon agreeing to participate, their eligibility was verified by the online survey questionnaire that asked for them to indicate their age in years (must be over the age of eighteen) and if they are currently enrolled as at least a half-time student at a college or university in the state of Oregon.

Participants who meet eligibility verification requirements were then asked to complete the rest of the survey questions. Survey questions include background questions (race/ethnicity, age range in years, sex, sexual identity, gender identity, student status and class standing, and on-campus versus off-campus place of residence). Participants then answered questions regarding their experiences using college health services. Upon completion of the survey, a Debriefing Statement was provided. SONA participants automatically received credit for their participation while non-SONA participants were directed to an external Qualtrics survey to provide an email address where an e-gift card can be sent for compensation purposes. Compensation ($5 Amazon e-giftcard) was provided to the first 200 participants. Thereafter, participation was voluntary. Anonymized identification numbers were assigned to the source of participant data so that researchers were unable to differentiate between SONA and non-SONA participants.

Measures

Demographic questions

Participants were asked to respond to demographic questions that related to various aspects of their identity including their age range, racial/ethnic identity, student enrollment status, class standing, and primary place of residence. Participants were also asked to respond to the question "How do you describe yourself?" and given the options "Female, Male, Transgender male (Female to male), Transgender female (Male to female), Gender Fluid, Genderqueer/Gender non-conforming/Non-binary, Agender, Gender Questioning, Intersex, or different identity". They were asked in a separate question, "How do you describe yourself?" and given the responses "Straight or heterosexual, Gay or lesbian, Bisexual, Pansexual, Asexual, Bicurious/questioning, or different identity."

Mental health symptoms

The participants completed the Kessler-10, which is a global self-report measure of distress including anxiety and depressive symptoms in the past 4 weeks (Kessler, Andrews, & Colpe, 2002). Items were summed to create a score ranging from 10 to 50. Scores of 20 or higher indicate a high probability of having a mild (20 – 24), moderate (25 – 29), or severe (30+) mental disorder. Due to a survey programming error, 432 participants were not asked one of the items ("How often do you feel hopeless?"). Instead of removing these observations, mean imputation was used (i.e., the missing question score was replaced with the mean score on the 9 answered items).

Substance use

The wording of most of these questions were taken directly or adapted from pulled from the National Longitudinal Study of Adolescent Health Wave 4. Binge drinking was assessed for those who indicated a male sex at birth using the question, "During the past 30 days, on how many days have you drank 5 or more drinks in a row?". For those who indicated a female sex at birth, the question, "During the past 30 days, on how many days have you drank 4 or more drinks in a row?" was used. Participants were prompted to enter a whole numerical value.

Cigarette use or smoking patterns were assessed using the questions, "Have you ever smoked a cigarette?" If they responded yes, they were asked "During the past 30 days, on how many days did you smoke cigarettes?" and "On the days you smoked, how many cigarettes did you smoke each day?". Participants were asked to enter a whole numerical value. E-cigarette use was assessed using the questions, "Have you ever used an electronic nicotine product, even one or two times? (Electronic nicotine products include e-cigarettes, vape pens, personal vaporizers

and mods, e-cigars, e-pipes, e-hookahs, Juul, and hookah pens)." If they indicated any use, they were asked, "During the past 30 days, on how many days have you used" the same products. Participants were asked to enter a whole numerical value.

Recent misuse of prescription drugs were assessed with the question, "Have you ever taken any prescription drugs that were not prescribed for you, taken prescription drugs in larger amounts than prescribed, more often than prescribed, for longer periods than prescribed, or taken prescription drugs that you took only for the feeling or experience they caused?". Participants who indicated asked were also asked the same question but "In the past 30 days", and were asked to check all that apply from the following list: Sedatives, tranquilizers, stimulants, pain killers, or "other" free response item.

Recent illicit or illegal drug use was measured using the questions, "Have you ever used any of the following drugs? Cocaine, heroin, methamphetamines, or any other type of illegal drug?", and, if they indicated any use, they were also asked the question using the timeframe "In the past 30 days."

Marijuana use was measured by asking the question, "Have you ever used marijuana?", and if yes, they were asked, "During the past 30 days" and participants were instructed to enter a whole numerical value.

Mental Health & Substance Use Service Utilization. Participants were asked the following question, "Have you ever received services for support related to any of the following *on-campus*?" and then were prompted to select all that apply from the options, "Psychological or mental health", "Substance or drug use", "Sexual or gender identity", or "None of these". Due to

very few people endorsed using sexuality and gender services (n = 46), we only focused on psychological and substance use services for this project.

Helpfulness of Mental Health & Substance Use Services. Participants who reported having used mental health and/or substance use services were asked the follow-up question(s): "You reported that you have used on-campus resources related to your [psychological or mental health/substance or drug use]. Which of the following best describes how helpful you found these resources?" Participants were then asked to respond to these questions using a 5 point Likert-style scale that ranged from "Extremely Helpful" to "Not at all helpful".

Barriers to On-campus Mental Health & Substance Use Service Utilization. If participants indicated that they had not utilized either psychological/mental health and/or substance use services, then they were asked additional yes or no style questions about reasons why they had not utilized the related services. The list of barriers was taken from Dunbar et al., (2017), however, the items "I didn't feel that I needed services", and "Other reason, please specify" were also added for the current study. Participants were asked to select all items that applied to them, as shown in Table 1. To create a total barriers score, the number of barriers in Table 1 was calculated separately for mental health and substance use services. Responses "I didn't feel that I needed services" and "I got help off campus" were omitted from the total to focus specifically on barriers that related to directly to campus services.

Figure 1: Barriers to Using Mental Health & Substance Use Services

I didn't feel that I needed services (0)
I got help off campus (1)
I did not know how to access the services (2)
I had never heard of the services (3)
I did not know what was offered (4)
I had concerns about possible lack of confidentiality (5)
I was embarrassed to use the services (6)
I had concerns about possible costs (7)
The location was inconvenient (8)
The wait for an appointment was too long (9)
The hours were inconvenient (10)
I did not have enough time (11)
The on-campus services have a poor reputation (12)
I did not think it would help (13)
I did not know if I was eligible for services (14)
Other reason, please specify (15)

Participants were asked: "Which of the following reasons kept you from using these services?"

Awareness of Campus Mental Health & Substance Use Services. Participants were asked to respond to statements regarding their awareness of campus resources using a 4 point Likert-style scale ranging from "Not at all true" to "Very much true". The statements included, "I am aware of where to go on campus if I need [psychological or mental health supportive services /substance or drug use supportive services]."

Statistical analyses

Multiple linear regression was used to examine the association between sexual and gender minority status with the continuous outcome variables, which included: Kessler-10 score, ratings of helpfulness of campus services, awareness of campus services, and total number of barriers for mental health services or substance use services. Multiple logistic regression was used to examine the association between sexual and gender minority status with the dichotomous outcome variables, which included whether or not campus services were utilized and substance use outcomes. All analyses controlled for non-white race ethnicity (i.e., non-Hispanic white vs

any other race and ethnicity), biological sex (i.e., male vs female), and year in school (i.e., first, second, third, vs fourth year and beyond). These factors were controlled for as they may relate to help seeking behaviors, mental health and substance use, and/or awareness of campus services in addition to be related to the sexual and gender minority variables.

Results

Sample Characteristics

The majority of participants were 18 – 20 (68.9%) or 21 – 24 (21.05%) years old, with some indicating that they were 25 – 34 (7.5%) or 35 – 60 (2.6%) years old. In this sample, 21.8% of students (n = 413) endorsed any identity under the LGBTQQ+ umbrella. There was 3.6% of students (n = 68) who identified with a gender identity that is considered to be a minority, i.e. identities that fall under the transgender umbrella (see Table 1). When examining sexual minority subgroups, 3.3% of students (n = 63) identified as gay or lesbian, 13% (n = 246) identified as bi or pansexual, 2.9% (n = 54) identified as bi-curious or questioning, and 2.3% of students (n = 43) identified as asexual or endorsed a different sexual identity than the categories listed above.[1] Of the total sample, 72.7% (n = 1,375) indicated that they were assigned female sex at birth. Nearly 30% of all students (n = 546) identified with a non-white racial or ethnic

[1] Based on the sizes of the sexual identity subgroups, certain sexual identities were combined. Bisexual or pansexual were combined as they fall under the broader umbrella of bisexual (non-same sex) sexual identity. Asexual or different identity were combined because the groups were too small to examine independently. Similarly, for gender identity, all responses were combined and categorized as either cisgender or transgender.

identity, and approximately 19% of the trans-identifying participants (n = 13) identified as non-white.

Mental Health and Substance Use Disparities

The observed mean (M) distress levels (i.e., scores on the Kessler-10) and standard deviations (SDs) for the sexual and gender minority groups are reported in Table 1. On average, controlling for sexual identity, biological sex, school year, and minority race/ethnicity, trans-identifying individuals reported significantly higher levels of current psychological distress (M = 30.84, SD = 8.63) than cisgender individuals (M = 23.76, SD = 8.14; $p < .001$; see Table 4 for regression results). Furthermore, individuals who identified as gay/lesbian (M = 27.42, SD = 8.65; $p < .001$), bisexual/pansexual (M = 28.93, SD = 8.65; $p < .001$), or bicurious/questioning (M = 26.51, SD = 7.67; $p < .01$) reported significantly higher levels of distress than those who identified as heterosexual (M = 22.88, SD = 7.84). Distress levels did not significantly differ between those identifying as asexual/other identity versus heterosexual ($p > .05$).

When examining substance use outcomes, there were no significant differences in the odds of using any of the substances based on one's gender identity (see Table 1 for observed frequencies and Table 4 for logistic regression results). Similarly, sexual identity was not significantly related to the odds of binge drinking, smoking cigarettes, or using illicit drugs. Compared to the past 30 day use of marijuana use of heterosexual individuals (observed prevalence of 29.8%), there was a significantly greater odds of being a marijuana user in the past 30 days for bi or pansexual individuals (42.7%; $p < .001$) and a significantly lower odds for those who identify as asexual or with another identity (11.6%; $p < .01$). There were no other significant differences among sexual identity groups in regard to marijuana use. Furthermore, compared to heterosexual individuals (observed prevalence of 11.6%), bi or pansexual individuals exhibited a

greater odds of reporting any illicit use of prescription drugs (18.7%; $p < .05$); however, no other differences based on sexual identity were detected.

Accessing Services

The mean levels of reported health service utilization are displayed in Table 1 and the logistic regression results regarding utilization can be found in Table 4. Compared to cisgender participants (observed prevalence of 21.8%), transgender participants were at a greater odds of utilizing on-campus mental health services (63.2%; $p < .001$). Among the various sexual identity groups, those that identified as asexual or other reported a greater odds of endorsing mental health service utilization (55.8%; $p < .001$) as compared to heterosexual individuals (18.3%). The bi or pansexual group also reported a greater odds of reporting mental health service utilization (45%; $p <0.001$) as opposed to heterosexual individuals. No other differences in mental health service utilization based on sexual identity were found. For substance use services, utilization was relatively low with only 2.2% of all respondents (n = 42) reporting having used these services (see Table 1). There were no significant differences in the odds of utilizing substance use support services based on gender identity or sexual identity.

Linear regression results for ratings of how helpful psychological and substance use services were are included in Table 4. The sexual identity subgroups were combined for these analyses because only individuals who reported ever using these on-campus services rated their helpfulness, resulting in relatively small subsample analyses. There were no significant differences between sexual and gender minority students and their cisgender or heterosexual counterparts in regards to reported helpfulness of mental health or substance use services.

Barriers to accessing services

The average levels of reported number of barriers to accessing mental health services can be found in Table 2 and the corresponding linear regression results can be found in Table 4. Transgender identifying students reported a significantly higher number of barriers (M = 2.08, SD = 2.23) than their cisgender counterparts (M = 1.05, SD = 1.60; $p < .05$). Furthermore, compared to the number of barriers to psychological services reported by heterosexual individuals (M = 0.95, SD = 1.53), individuals who identified as gay or lesbian (M = 1.62, SD = 1.60; $p < .01$) bi or pansexual (M = 1.70, SD = 1.87; $p < .001$) or bi-curious or questioning (M = 1.87, SD = 2.33; $p < .001$) reported more barriers.

Observed frequencies of endorsed barriers to mental health services can be found in Table 2. Some of the top barriers to mental health services endorsed by the transgender identifying group included concerns about costs of services (36% transgender individuals endorsed this barrier), received services off-campus (24%), and not thinking that the services would help (24%). For the gay and lesbian group, the top reported barriers included not thinking the services would help (26.7% endorsed), feeling embarrassed to use the services (24.4%), and concerns about the costs of services (20%). For the bi or pansexual group, the top barriers endorsed to mental health services included being embarrassed to use services (25.2%), receiving services off-campus (22.2%), and concerns about costs of services (21.5%). For the bi-curious and questioning group, the top endorsed barriers for mental health services includes not thinking the services would help (28.2%), not having enough time to access services (25.6%), and feeling embarrassed to use the services (23.1%). In the asexual or other identity category, the top barriers endorsed for accessing mental health services included not thinking the services would help (31.6%), students received services off-campus (31.6%), and having concerns about the cost of services (26.3%). For comparison, the top reported barriers among the cisgender and

heterosexual groups were not having enough time (14.3% and 13.3%, respectively), being embarrassed to use the services (13.1% and 11.1% respectively), concerns about costs of services (12.4% and 11.2%, respectively), and not thinking the services would help (12.5% and 10.5%, respectively).

The average levels of reported number of barriers to accessing substance use support services can be found in Table 3 and the linear regression results can be found in Table 4. Among those who had reported not utilizing substance use services (n = 1,850), the average number of reported barriers to utilizing substance use services was significantly higher for transgender students (M = 0.21, SD = 0.74) compared to cisgender students (M = 0.50, SD = 1.06; $p < .01$; Table 4 for regression results). Bi-curious or questioning students (M = 0.46, SD = 1.63) reported significantly more barriers to substance use services as opposed to heterosexual students (M = 0.21, SD = 0.71; $p < .05$). There were no other significant differences in endorsed barriers to substance use services based on sexual identity.

Though a vast majority of respondents reported not using substance use services because they did not need them, certain barriers still emerged. The observed frequencies of endorsed barriers to substance use services are reported in Table 3. When looking at barriers to accessing substance use support services, the transgender identifying group reported that the top barriers included the "other barrier" response option (7.6% endorsed), not thinking the substance use services would help (6.1%), and not knowing what services were offered (6.1%). For the gay and lesbian subgroup, the top barriers were getting services off-campus (6.6%) and not knowing what services are offered (6.6%). Within the bi or pansexual group, the top reported barriers to accessing substance use services included the "other barrier" response item (3.3%), never heard of substance use services (2.5%), and not knowing what services are offered (2.5%). The bi-

curious and questioning group reported that the top barriers included not knowing how to access services (7.4%), concerns about eligibility (7.4%), and not knowing what services were offered (5.6%). Lastly, in the asexual or other identity group, the most commonly reported barriers to accessing substance use services included eligibility concerns (7.1%), concerns about confidentiality (4.8%), and not knowing what services are offered (4.8%). To compare, the cisgender and heterosexual groups reported not knowing what services were offered (3.8% and 3.9%, respectively), never hearing of the services (3.5% and 3.7%, respectively), and not knowing how to access services (3.1% and 3.2%, respectively) as the top barriers to accessing substance use support services.

Individuals who identified as gay or lesbian ($p < .01$), bi or pansexual ($p < .001$), and bi-curious or questioning ($p < .01$) reported a significantly greater awareness of where to go to seek mental health services compared to heterosexual counterparts (Table 4). There were no significant differences for any of the sexual or gender minority groups in regards to awareness of substance use services.

Discussion

This study examined if sexual and gender minority students in Oregon colleges and universities exhibit different patterns of mental health symptoms and substance use, use of on-campus mental health and substance use services, and barriers when trying to access these various on-campus resources than their cisgender and heterosexual counterparts. On average, all of the sexual and gender minority subgroups, with the exception of the asexual or other identity group, reported significantly higher levels of reported psychological distress compared to their heterosexual or cisgender counterparts. This finding regarding mental health symptoms for sexual minority college students is consistent with Dunbar et al. (2017) and suggests students

with a sexual minority identity are more likely to report need for mental health treatment (i.e., current severe psychological distress). The current study found that this pattern was also true for those who identified with a minority gender identity, which is consistent with recent research that indicates that individuals in the emerging gender and minority categories (pansexual, demisexual, asexual, queer, questioning, and transgender/gender nonconforming) report significantly higher rates of depression and anxiety when compared with cisgender/heterosexual individuals, and even compared to those who identify as gay or lesbian (Borgogna, McDermott, Aita, & Kridel, 2019).

Additionally, certain subgroups of sexual and gender minority students exhibited differential patterns in substance use. College students who identified as bi or pansexual, demonstrated greater odds for marijuana use and misuse of prescription drugs than their heterosexual counterparts. Other differences in substance use based on gender or sexual identity were not supported. A broader range of substance use disparities were expected, as prior research has found that bisexual women in college have greater odds of using alcohol, tobacco, and marijuana than heterosexual women and lesbians (Kerr, Ding, Burke, & Ott-Walter, 2015). That being said, there is limited existing data on transgender identity in college students and its relation with substance use, and some research in this area supports transgender identity as being protective against binge drinking (Coulter et al., 2015). Additional research is needed to better understand the role of sexual and gender identity in substance use patterns in the college setting.

Nonetheless, the particularly elevated mental health symptoms and greater use of select substances among bi or pansexual individuals is consistent with prior research that suggests that a bisexual identity and/or behavior in particular seem to be related to increased risk for substance abuse and bisexual identifying people report higher rates of substance use disorders than gay or

lesbian identifying adults (Meyer, Dietrich, & Schwartz, 2008; Green & Feinstein, 2012; Dermody, 2018; Ross, Salway, Tarasoff et al., 2018). However, research in these areas often combine all sexual minority subgroups together so it is often difficult to discern patterns specific to this group. While there may be statistical reasons for combining these groups (like small subsample sizes), it is still problematic because bi and pansexual people experience unique layers of discrimination from other sexual minority individuals produced by in-group biphobia and mono-sexism (Ross, Dobinson, & Eady, 2010). Those who identify as pansexual may experience further in-group discrimination due to societal non-acceptance of this emerging identity. Similarly, there is limited research on substance use patterns specifically among college students who identify as bi, pansexual, bi-curious, or questioning individuals because of the history of erasure of identities that exist outside of the hetero-normative binary. All of these disparities regarding negative mental health outcomes and substance use are indicative of a greater need for identity specific interventions for sexual and gender minority identifying individuals on college campuses.

The current study also found that the patterns of mental health service utilization were different for those with gender minority identity and for certain subgroups of those with sexual minority status. It was found that the bi or pansexual group, asexual or other identity group, and transgender group all had greater odds of using on-campus psychological services than their heterosexual or cisgender counterparts. Though Dunbar et al. (2017) did not examine mental health service utilization among those with gender minority status, the current study's findings are consistent with Dunbar et al.'s (2017) findings that LGBQQ students with need for treatment are more likely to access any type of mental health service (both on and off-campus) as opposed to non-LGBQQ students. Differences in substance use support service utilization patterns were

not found to be statistically significant for any of the sexual and gender minority identifying students, perhaps due to low reports of utilization in the current study. Consequently, future research would benefit from further analysis of patterns regarding substance use support service utilization. It was also found that there was greater awareness of how to access health services among sexual and gender minority students as opposed to heterosexual or cisgender students. These findings overall are indicative of patterns of higher utilization of mental health services among students with gender or sexual minority status, and the observed greater awareness could be due to higher utilization of mental health services in these groups. These findings are indicative of a greater need for informed, identity specific, and gender affirming services among sexual and gender minority students.

The current study also found that sexual and gender minority students who did not use campus mental health or substance use services reported more barriers to obtaining these services than their cisgender and heterosexual counterparts. This finding is consistent with Dunbar et al.'s (2017) study that focused on mental health service utilization, however, in the current study it was also possible to look at different sexual and gender identity groups and barriers to substance use services. In regards to barriers to mental health services, some of the most frequently reported barriers across the different sexual and gender minority groups included not thinking the services would help, being embarrassed to use services, concerns about the cost of services, and using off-campus services. Dunbar et al.'s (2017) findings in regards to barriers in accessing mental health services showed slightly different commonly endorsed barriers than the current study. Notably, the barrier "not thinking the services would help" did not come up in Dunbar et al.'s (2017) top barriers, but "concerns about cost" and "not knowing how to access services" did. Given that the current study analyzes data primarily from a public university in the

state of Oregon while the Dunbar et al. (2017) study collected data from universities in California, there could be institution specific forces driving these differences in reported barriers.

For substance use services, among the most frequently endorsed barriers across the groups were not knowing how to access the services and not knowing what services were being offered. Given how rarely on-campus substance use services were used by students in general, even though there were some widely-endorsed risky substance use patterns like recent binge drinking and illicit prescription drug use, it is important to educate students about available resources and their associated costs.

Given that this study primarily involved students at a public research-based university in the state of Oregon, specific and localized recommendations can be made based on the findings regarding sexual and gender minority students. One of the most commonly reported barriers in this study across the sexual identity groups was "not feeling like the services would actually help". Concerns about cost was another barrier that was commonly endorsed by sexual and gender minority students, and this particular barrier poses an interesting dilemma. At the university this sample was primarily drawn from, the cost of mental health services is included in the tuition students already pay, so is likely a disconnect for students between the actual cost of services and their perception of cost of services. Clarifying this through more targeted and informed outreach could potentially improve these barriers. Similarly, the barriers "did not know how to access services" and "did not know what services were offered" could be alleviated by means of more intentional outreach. A final localized recommendation for improvements in this area would be to provide programming, outreach, and community for bi-curious or questioning individuals based on the trends of high psychological distress and substance use. Current campus services tend to target those who are already firmly established as a gender or sexual minority

and forget that college provides a unique opportunity to support students through the coming out or transitioning process. As a result, many bi-curious or questioning individuals may feel alienated from spaces intended for LGBTQQ+ people as they do not feel strongly identified with staples of the community at that moment. Ultimately, in order to create a more accessible and ultimately more effective culture of healthcare for LGBTQQ+ individuals on college campuses, colleges in general will have to implement change at the individual, clinician, and systemic levels- all of which have barriers for LGBTQQ+ people (Whaibeh, 2019). Research shows that transgender inclusive policies on college campuses improve the wellbeing of transgender students, and thus the explicit mentioning of gender identity and expression in nondiscrimination policies, the ability to list a preferred name and pronouns on campus records, and having the alternatives to male/female on such records should be provided (Goldberg, 2018).

Other changes at the systemic level can involve greater outreach to and involvement of LGBTQQ+ students and the improvement of competent services and safe spaces in healthcare settings. A common problem among LGBTQQ+ identifying students is not feeling like the barriers or obstacles they face are understood by the institution they attend, and thus recognition of the history of oppression and possible barriers that the institution may have created for LGBTQQ+ students can be incredibly validating when establishing outreach to this population at a widespread level. At the clinician level, cultural competency training for staff in order to avoid unintended negative experiences for LGBTQQ+ students could be improved upon, and the inclusion of LGBTQQ+ identified clinical staff or training staff could aid in increasing the LGBTQQ+ students' sense of community or comfort. Additionally, colleges will need to factor LGBTQQ+ voices and involvement into their enactment of change if these changes are going to

be sustainable. Many of these changes if not all at the systemic and clinician level would directly impact certain individual barriers to accessing services that LGBTQQ+ people face.

Looking beyond the implications of the findings to local higher education institutions, the greater reporting of barriers to treatment in this study and Dunbar et al. (2017) among LGBTQQ+ individuals suggests that it is incredibly important to consider how the social and environmental factors in collegiate health service settings could be creating these barriers and ultimately negatively impacting LGBTQQ+ students. For example, the number of students across the various identity groups that endorsed not believing that their school's services would actually improve their condition. This belief may be a manifestation of collegiate environments continually underserving and not expanding effective outreach to this population. Similarly, barriers regarding embarrassment to use services, not knowing how to access them, and not knowing what services are being offered could reflect that college environments are not succeeding in creating safe and approachable services for LGBTQQ+ students. In order to better serve LGBTQQ+ students who are at a demonstrated higher risk for negative mental health symptoms and certain substance use, it may be helpful for college and university campuses to put more effort into making their policies, services, and campus environments not just tolerant, but accepting and accessible for LGBTQQ+ students.

The findings from the current study and the literature base that surrounds this topic of LGBTQQ+ disparities in health services both illustrate the need for change within college environments. For example, college has the enormous capacity to either reinforce the gendered, transphobic, and harmful treatment that many students already have experienced in school and in society, or, to support and empower these resilient students, thus preventing poor academic and psychosocial outcomes (Goldberg, 2018). For students questioning their gender or sexual

identity for the first time, college can play a crucial role in facilitating a healthy exploration process where students feel supported with resources and community. Consequently, in Kidd et al.'s (2018) scoping review of over 90 studies analyzing sexual and gender minority youth substance use, it was found that being in higher education lead to certain protective factors (higher educational attainment, school engagement, school connectedness, and earlier sexual or gender minority self-identification), but there are several aspects of non-inclusive campus environments that could negate these protective effects. Enacted stigma (e.g., assault, homo/transphobia, discrimination) and homo/transphobic policies were directly associated with overall substance use, while school-based victimization was found to be associated with heavier and more frequent substance use-related consequences (Kidd et al., 2018). If a university or college system takes the initiative to actively contribute to the wellbeing of its LGBTQQ+ students instead of perpetuating harm or indifference, the mental health and substance use patterns among this population would greatly improve.

There are a few key limitations of the current study. One such limitation is due to a majority of the respondents in this study being recruited from Oregon State University despite recruitment efforts across the state, and therefore these findings may not generalize to college campuses in other states or countries. This study also utilized a self-report survey design, which means that these results could be impacted by the participants' ability to accurately recall and reflect on their experiences regarding mental health and substance use. Even with screening measures to reduce the number of deviant responses, there still could be some faulty responses within this sample. Another limitation of this study was that there was too limited of data in order to perform analyses in regards to patterns of utilization for sexual and gender identity support services on college campuses. Additionally, substance use support service utilization in

this sample was fairly low and therefore future research could benefit from a closer analysis of the LGBTQQ+ student's experience using these services. This study was also unable to compare outcomes between different gender identities under the trans umbrella due to low response rate from these different groups, and consequently future research should explore what differences exist within this diverse range of gender identities in order to best understand these students' experience on college campuses. Another limitation that surrounds this topic and is worth mentioning is that the culture and language surrounding the LGBTQQ+ community continues to be very dynamic, and much of the current classifications in this study regarding sexual and gender identities may not be reflective of all people in this community or reflective of the community as it evolves in the future. Future research may benefit from assembling members of the LGBTQQ+ community in a focus group setting to better establish gender identity and sexual identity response options for participants.

Despite the previously aforementioned limitations, this study still contributes to the literature on mental health and substance use patterns for LGBTQQ+ college students and found that psychological distress, certain types of substance use, service utilization, and the average number of barriers to accessing services were all more prominent for LGBTQQ+ students. These findings are indicative of a critical need for intervention at the individual, clinician, and systemic levels of college campus health services in order to improve the mental health and substance use outcomes among LGBTQQ+ students. The identification of specific barriers to mental health and substance use services based on identity presents educational institutions with an opportunity to be accountable for the necessary systemic changes needed to promote an equitable and inclusive space where all can achieve their academic goals while safely maintaining their health.

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Appendix

Table 1. Sample Characteristic

	Total Sample	Cisgender	Transgender	Heterosexual	Gay or lesbian	Bisexual or Panse	Questioning	Asexual or Other
N (%)	1892 (100%)	1824 (96.4%)	68 (3.6%)	1486 (78.5%)	63 (3.3%)	246 (13.0%)	54 (2.9%)	43 (2.3%)
Demographic variables								
Female	1375 (72.7%)	1324 (72.6%)	51 (75.0%)	1050 (70.7%)	35 (55.6%)	215 (87.4%)	43 (79.6%)	32 (74.4%)
Non-white	546 (28.9%)	533 (29.2%)	13 (19.1%)	455 (30.6%)	11 (17.5%)	50 (20.3%)	16 (29.6%)	14 (32.6%)
School year:								
First year	717 (37.9%)	702 (38.5%)	15 (22.1%)	573 (38.6%)	18 (28.6%)	92 (37.4%)	17 (31.5%)	17 (39.5%)
Second year	463 (24.5%)	444 (24.3%)	19 (27.9%)	372 (25.0%)	12 (19.0%)	55 (22.4%)	14 (25.9%)	10 (23.3%)
Third year	411 (21.7%)	392 (21.5%)	19 (27.9%)	305 (20.5%)	21 (33.3%)	58 (23.6%)	16 (29.6%)	11 (25.6%)
Fourth year+	301 (15.9%)	286 (15.7%)	15 (22.1%)	236 (15.9%)	12 (19.0%)	41 (16.7%)	7 (13.0%)	5 (11.6%)
Ever Used Campus Services								
Psychological	440 (23.3%)	397 (21.8%)	43 (63.2%)	272 (18.3%)	18 (28.6%)	111 (45.1%)	15 (27.8%)	24 (55.8%)
Substance	42 (2.2%)	40 (2.2%)	2 (2.9%)	32 (2.2%)	2 (3.2%)	7 (2.8%)	0 (0%)	1 (2.3%)
Substance use (past 30 days)								
Binge drank	632 (33.4%)	615 (33.7%)	17 (25.0%)	493 (33.2%)	17 (27.0%)	93 (37.8%)	22 (40.7%)	7 (16.3%)
Marijuana	596 (31.5%)	570 (31.3%)	26 (38.2%)	442 (29.8%)	25 (39.7%)	105 (42.7%)	19 (35.2%)	5 (11.6%)
Cigarette smoker	97 (5.1%)	89 (4.9%)	8 (11.8%)	73 (4.9%)	4 (6.3%)	16 (6.5%)	1 (1.9%)	3 (7.0%)
E-nicotine user	441 (23.3%)	431 (23.7%)	10 (14.7%)	356 (24.0%)	8 (12.7%)	55 (22.4%)	17 (31.5%)	5 (11.6%)
Illicit drug use	50 (2.6%)	47 (2.6%)	3 (4.4%)	40 (2.7%)	1 (1.6%)	8 (3.3%)	0 (0%)	1 (2.3%)
Illicit prescription use	238 (12.9%)	225 (12.6%)	13 (20.0%)	170 (11.6%)	11 (18.0%)	9 (18.7%)	9 (17.3%)	5 (12.2%)
Kessler 10 Mean (SD)	24.01 (8.27)	23.76 (8.14)	30.84 (8.63)	22.88 (7.84)	27.42 (8.71)	28.93 (8.65)	26.51 (7.67)	26.76 (7.91)

Table 2. On Campus Psychological Services Barriers

	Total Sample	Cisgender	Transgender	Heterosexual	Gay or lesbian	Bisexual or Pansexual	Questioning	Asexual or Other
N (%)	1452 (100%)	n = 1427	n = 25	n = 1214	n = 45	n = 135	n = 39	n = 19
didn't use psych services because not needed	1056 (72.7%)	1044 (73.2%)	12 (48.0%)	920 (75.8%)	26 (57.8%)	76 (56.3%)	26 (66.7%)	8 (42.1%)
got services off campus	176 (12.1%)	170 (11.9%)	6 (24.0%)	128 (10.5%)	6 (13.3%)	30 (22.2%)	6 (15.4%)	6 (31.6%)
didn't know how to access psych services	116 (8.0%)	113 (7.9%)	3 (12.0%)	91 (7.5%)	5 (11.1%)	14 (10.4%)	3 (7.7%)	3 (15.8%)
never heard of psych services	42 (2.9%)	41 (2.9%)	1 (4.0%)	33 (2.7%)	1 (2.2%)	5 (3.7%)	2 (5.1%)	1 (5.3%)
didn't know what psych services were offered	131 (9.0%)	127 (8.9%)	4 (16.0%)	107 (8.8%)	4 (8.9%)	13 (9.6%)	6 (15.4%)	1 (5.3%)
had concerns with lack of confidentiality	74 (5.1%)	71 (5.0%)	3 (12.0%)	51 (4.2%)	2 (4.4%)	15 (11.1%)	4 (10.3%)	2 (10.5%)
embarassed to use psych services	191 (13.2%)	187 (13.1%)	4 (16.0%)	135 (11.1%)	11 (24.4%)	34 (25.2%)	9 (23.1%)	2 (10.5%)
had concerns about costs of psych services	186 (12.8%)	177 (12.4%)	9 (36.0%)	136 (11.2%)	9 (20.0%)	29 (21.5%)	7 (17.9%)	5 (26.3%)
location of psych services inconvenient	56 (3.9%)	54 (3.8%)	2 (8.0%)	42 (3.5%)	1 (2.2%)	11 (8.1%)	2 (5.1%)	0 (0%)
psych appoinment wait was too long	61 (4.2%)	58 (4.1%)	3 (12.0%)	44 (3.6%)	5 (11.1%)	9 (6.7%)	3 (7.7%)	0 (0%)
hours of psych services inconvenient	62 (4.3%)	60 (4.2%)	2 (8.0%)	50 (4.1%)	3 (6.7%)	5 (3.7%)	4 (10.3%)	0 (0)%
didn't have enough time to use psych service	208 (14.3%)	204 (14.3%)	4 (16.0%)	162 (13.3%)	8 (17.8%)	26 (19.3%)	10 (25.6%)	2 (10.5%)
psych services have poor reputation	56 (3.9%)	52 (3.6%)	4 (16.0%)	40 (3.3%)	5 (11.1%)	9 (6.7%)	1 (2.6%)	1 (5.3%)
didn't think psych services would help	184 (12.7%)	178 (12.5%)	6 (24.0%)	128 (10.5%)	12 (26.7%)	27 (20.0%)	11 (28.2%)	6 (31.6%)
didn't know if eligible for psych services	105 (7.2%)	102 (7.1%)	3 (12.0%)	77 (6.3%)	4 (8.9%)	14 (10.4%)	7 (17.9%)	3 (15.8%)
other barrier	79 (5.4%)	75 (5.3%)	4 (16.0%)	53 (4.4%)	3 (6.7%)	18 (13.3%)	4 (10.3%)	1 (5.3%)
Mean Barriers Endorsed (SD)	1.07 (1.62)	1.05 (1.60)	2.08 (2.23)	0.95 (1.53)	1.62 (1.60)	1.70 (1.87)	1.87 (2.33)	1.42 (2.06)

Note: The percentages in each column are based on the total subsample for that column. For example, 1,044 of 1,427 (73.2%) cisgender individuals endorsed the item “didn’t use psychological services because they were not needed”.

Table 3. On Campus Substance Use Services Barriers

	Total Sample	Cisgender	Transgender	Heterosexual	Gay or lesbian	Bisexual or Pansexu	Questioning	Asexual or Other
N (%)	1850 (100%)	n = 1784	n = 66	n = 1454	n = 61	n = 239	n = 54	n = 42
didn't use drug services because not needed	1753 (94.8%)	1696 (95.1%)	57 (86.4%)	1378 (94.8%)	55 (90.2%)	229 (95.8%)	53 (98.1%)	38 (90.5%)
got services off campus	27 (1.5%)	25 (1.4%)	2 (3.0%)	20 (1.4%)	4 (6.6%)	2 (0.8%)	1 (1.9%)	0 (0%)
didn't know how to access drug services	59 (3.2%)	56 (3.1%)	3 (4.5%)	47 (3.2%)	2 (3.3%)	5 (2.1%)	4 (7.4%)	1 (2.4%)
never heard of drug services	66 (3.6%)	63 (3.5%)	3 (4.5%)	54 (3.7%)	2 (3.3%)	6 (2.5%)	2 (3.7%)	2 (4.8%)
didn't know what drug services were offered	71 (3.8%)	67 (3.8%)	4 (6.1%)	56 (3.9%)	4 (6.6%)	6 (2.5%)	3 (5.6%)	2 (4.8%)
had concerns with drug services lack of confidentiality	23 (1.2%)	20 (1.1%)	3 (4.5%)	16 (1.1%)	1 (1.6%)	3 (1.3%)	1 (1.9%)	2 (4.8%)
embarassed to use drug services	20 (1.1%)	19 (1.1%)	1 (1.5%)	14 (1.0%)	1 (1.6%)	4 (1.7%)	1 (1.9%)	0 (0%)
had concerns about costs of drug services	34 (1.8%)	32 (1.8%)	2 (3.0%)	26 (1.8%)	1 (1.6%)	4 (1.7%)	2 (3.7%)	1 (2.4%)
location of drug services inconvenient	16 (0.9%)	16 (0.9%)	0 (0%)	15 (1.0%)	0 (0%)	0 (0%)	1 (1.9%)	0 (0%)
drug appoinment wait was too long	11 (0.6%)	10 (0.6%)	1 (1.5%)	7 (0.5%)	0 (0%)	2 (0.8%)	2 (3.7%)	0 (0%)
hours of drug services inconvenient	16 (0.9%)	15 (0.8%)	1 (1.5%)	14 (1.0%)	0 (0%)	0 (0%)	2 (3.7%)	0 (0%)
didn't have enough time to use drug service	30 (1.6%)	27 (1.5%)	3 (4.5%)	22 (1.5%)	2 (3.3%)	3 (1.3%)	1 (1.9%)	2 (4.8%)
drug services have poor reputation	7 (0.4%)	4 (0.2%)	3 (4.5%)	4 (0.3%)	0 (0%)	0 (0%)	2 (3.7%)	1 (2.4%)
didn't think drug services would help	28 (1.5%)	24 (1.3%)	4 (6.1%)	22 (1.5%)	1 (1.6%)	2 (0.8%)	2 (3.7%)	1 (2.4%)
didn't know if eligible for drug services	29 (1.6%)	26 (1.5%)	3 (4.5%)	16 (1.1%)	1 (1.6%)	5 (2.1%)	4 (7.4%)	3 (7.1%)
other barrier	53 (2.9%)	48 (2.7%)	5 (7.6%)	40 (2.8%)	2 (3.3%)	8 (3.3%)	2 (3.7%)	1 (2.4%)
Mean Barriers Endorsed (SD)	0.22 (0.75)	0.21 (0.74)	0.50(1.06)	0.21 (0.71)	0.25 (0.79)	0.18 (0.65)	0.46 (1.63)	0.36 (0.93)

Note: The percentages in each column are based on the total subsample for that column. For example, 1696 of 1784 (95.1%) cisgender individuals endorsed the item “didn’t use drug services because they were not needed”

Table 4. Regression analysis results

	Gay	Bisexual/pansexual	Bicurious/Questioning	Asexual/Other	Transgender	School year	Female	Nonwhite
Aware psychological services	0.31 (0.12)*	0.22 (0.07)**	0.34 (0.13)**	0.14 (0.16)	0.14 (0.13)	-0.05 (0.02)**	0.13 (0.05)*	-0.10 (0.05)*
Aware drug services	0.06 (0.14)	-0.01 (0.07)	-0.13 (0.14)	-0.29 (0.17)†	0.20 (0.14)	-0.09 (0.02)***	-0.05 (.05)	0.03 (0.05)
Logistic Regression Analyses:								
Use of campus psychological services	0.38 (0.30)	1.18 (0.15)***	0.48 (0.32)	1.36 (0.35)***	1.01 (0.29)***	0.31 (0.05)***	0.14 (0.13)	0.05 (0.13)
Use of campus drug services	0.22 (0.76)	0.55 (0.45)	-17.26 (5350.07)	0.07 (1.12)	0.11 (0.83)	0.15 (0.14)	-1.10 (0.32)***	0.38 (0.33)
Binge drinking	-0.37 (0.29)	0.21 (0.15)	0.35 (0.29)	-0.77 (0.44)†	-0.40 (0.31)	0.05 (0.05)	-0.15 (0.11)	-0.67 (0.12)***
Smoker	-0.16 (0.55)	0.28 (0.31)	-0.98 (1.02)	0.05 (0.69)	0.79 (0.46)†	0.30 (0.10)**	-0.93 (0.22)***	-0.52 (0.26)*
Marijuana	0.32 (0.27)	0.49 (0.15)**	0.24 (0.29)	-1.30 (0.50)*	0.29 (0.29)	0.04 (0.05)	-0.08 (0.11)	-0.48 (0.12)***
Illicit drugs	-0.81 (1.04)	0.07 (0.43)	-17.63 (5425.3)	-0.38 (1.10)	0.54 (0.70)	0.31 (0.13)*	-0.15 (0.32)	-0.48 (0.36)
Prescription drugs	0.38 (0.35)	0.49 (0.20)*	0.43 (0.38)	-0.01 (0.52)	0.21 (0.36)	0.29 (0.06)***	0.02 (0.16)	-0.15 (0.16)
Linear Regression Analyses:								
K10	4.51 (1.03)***	5.37 (0.57)***	3.38 (1.09)**	1.81 (1.31)	4.51 (1.07)***	-0.30 (0.17)†	1.64 (0.41)***	1.39 (0.40)**
Helpfulness psych services	-0.04 (0.12)				0.20 (0.19)	-0.07 (0.05)	-0.19 (0.13)	-0.03 (0.12)
Helpfulness drug services	-0.70 (0.47)				0.45 (1.02)	-0.34 (0.20)	-0.79 (0.37)†	0.43 (0.40)
Psych barriers	.67 (0.24)**	0.67 (0.15)***	0.87 (0.26)***	0.23 (0.38)	0.69 (0.34)*	0.17 (0.04)***	0.46 (0.09)***	0.22 (0.09)*
Drug Barriers	0.01 (0.10)	-0.06 (0.05)	0.24 (0.10)*	0.02 (0.12)	0.31 (0.10)**	0.06 (0.02)***	0.02 (0.04)	0.19 (0.04)***

Note: For each analysis, the unstandardized coefficient (B) and standard error (SE) are reported. The analyses with helpfulness of services as the outcome used a predictor that combined all of the sexual minority groups.