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Co-occurring Psychiatric and Drug Use Disorders among Sexual Minority Men with Lifetime Alcohol Use Disorders

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Abstract

Background—Emerging evidence indicates multiple health risks associated with harmful alcohol use among sexual minority men in the United States. In particular, sexual minority men with alcohol use disorders (AUD) might have greater co-occurring health problems compared with heterosexual men. We used nationally representative data to compare the prevalence of diagnostic co-occurring psychiatric disorders and drug use disorders (DUD) among sexual minority men with AUD compared with heterosexual males with a lifetime AUD diagnosis.

Methods—We analyzed data from 6,899 adult males with AUD participating in Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Using multiple logistic regressions, we compared the odds of lifetime diagnosis of mood disorders, anxiety disorders, and drug use disorders in sexual minority and heterosexual adult males with AUD.

Results—Of participants included in this analysis, 176 (2.6%) self-identified as a sexual minority. In adjusted analyses, sexual minority men with AUD were more likely than heterosexual

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Contributors

All authors made significant contributions to the study's design and conduct. Study topic and analysis plan were conceived by JL, NZ, and DO. JL led the statistical analysis, with significant input from NZ, KG, and DO. JL, KG, and DO wrote the first full draft. CK, BM, JV, NZ and KB contributed to the interpretation of data and writing. All authors have approved of submission of this version of the manuscript to *Drug and Alcohol Dependence*.

Conflict of Interest

No conflict of interest declared.

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men with AUD to have any mood disorder (including major depressive episode), any anxiety disorder (including panic disorder without agoraphobia, specific phobia, posttraumatic stress disorder, and generalized anxiety disorder), and lifetime DUD.

Conclusions—The elevated co-occurrence of psychiatric disorders and DUD among sexual minority men with AUD suggests that future research is warranted. A better understanding of the etiology of diagnostic co-occurring mental health and substance use disorders among sexual minority men in order to develop effective integrated prevention and treatment programs.

Keywords

Alcohol Use; Men who have sex with men (MSM); diagnostic co-occurrence

1. INTRODUCTION

Alcohol use disorders (AUDs) are prevalent in the United States population, with estimates of lifetime AUD prevalence ranging from 8.3% to 30.3% (Hasin et al., 2007). Over the past decade, a growing body of epidemiological evidence has documented disproportionately higher rates of AUD among sexual minority men in the United States (Gruskin, 2006; Drabble, 2005; McCabe, 2009). For example, one nationally representative sample found that sexual minority men had more than three times the odds of reporting alcohol dependence compared to heterosexual men (McCabe, 2009).

A high prevalence of diagnostic co-occurring substance use disorders and mental health problems, such as depressive symptoms, have previously been reported in studies of people with AUD (Hesslbrock et al., 1985; Swendsen et al., 2000; Grant et al., 2004; Conway et al., 2006; Najt et al., 2011). The co-occurrence of substance use disorders and mental health problems is alarming as AUD has been associated with mortality, liver cirrhosis, certain cancers, and unintentional injuries (Compton et al., 2007; Gonzales et al., 2014; Hasin et al., 2007). A number of studies suggest that sexual minority adults have a greater risk of both psychiatric and substance use disorders compared with heterosexual populations (Bostwich et al., 2010; Cochran et al., 2003; Institute of Medicine, 2009). However, there is limited population-level research that examines whether sexual minorities with AUD experience greater diagnostic co-occurring psychiatric and substance use problems compared with heterosexuals.

There is reason to expect a heightened risk for diagnostic co-occurring psychiatric problems among sexual minority populations with AUD. Studies have found that cumulative exposure to stress related to societal discrimination can have deleterious effects on mental and behavioral health of sexual minority populations (Bloomfield et al., 2011; Meyer, 2003). For example, using data from a national representative survey, one study found that lesbian, gay, and bisexual adults who reported greater exposure to discrimination also had significantly higher risk for past-year substance use disorder (McCabe et al., 2010). Other recent studies have found that sexual minority individuals residing in states that lacked protective policies against bias (i.e., laws against hate crimes, employment discrimination) have higher prevalence of alcohol, drug, and mental health disorders than those who live in states with protective policies (Pachankis et al., 2014; Hatzenbuehler et al., 2009). Thus, AUD may be

especially likely to emerge in sexual minority individuals in the context of multiple psychiatric disorders as a result of discrimination.

The present study seeks to extend existing evidence by examining the potential disparities in diagnostic co-occurring health conditions between adult heterosexual and sexual minority men with AUD. The study uses data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a population-based survey conducted by the National Institute of Alcohol Abuse and Alcoholism (NIAAA). Our aims were to utilize the NESARC to: (i) compare heterosexual and sexual minority men on the prevalence of diagnostic co-occurring psychiatric and drug use disorders among men with AUD; and (ii) examine whether disparities in prevalent co-occurring disorders persist between sexual minority and heterosexual men after adjustment for potential sociodemographic confounders.

2. METHODS

2.1 Sample

The 2004–2005 NESARC (Wave 2) collected data from a nationally representative sample of 34,653 civilian, non-institutionalized U.S. adults, ages 18 and older. Data were collected via face-to-face interviews. Sample weights were calculated to ensure that the weighted sample represented the U.S. adult non-institutionalized population based on the 2000 census. Detailed information of the NESARC survey methods and procedures is described elsewhere (Grant and Dawson, 2006; Grant and Kaplan, 2005). Given the documented gender differences in mental health and co-occurring substance use disorder (Gattis et al., 2012), we only included in the sample men who self-identified themselves as heterosexual or sexual minority (gay, bisexual, or not sure), and who met the diagnostic criteria for lifetime AUD (n=6,899).

2.2 Measures

2.2.1—Sociodemographic variables collected in NESARC included age, gender, race/ethnicity (white, Black, Hispanic, and other – which includes American Indian/Alaska Native and Asian/Native Hawaiian/Other Pacific Islander), marital status (married/living with partner, widowed/divorced/separated, and never married), place of birth (in the U.S. or foreign born), employment (full-time, part-time, unemployed/retired, and disabled), highest level of education (less than high school, high school or GED, some college, completed college, and completed a master's degree or higher), past year family income (less than \$20,000, \$20,000–\$34,999, \$35–\$69,999, and \$70,000 or higher), and health insurance at any time past year (yes or no).

2.2.2—Sexual orientation was assessed by showing respondents a preprinted response card and asked about their sexual identity: “Which category on the card best describes you?” (1) heterosexual (straight), (2) gay or lesbian, (3) bisexual, or (4) not sure. We coded participants who identified as gay, bisexual, and not sure as “sexual minority”. Participants who did not answer this question were excluded (n=115 male participants who completed NESARC Wave 2).

2.2.3—Lifetime alcohol use disorders were assessed using the Alcohol Use Disorder and Associated Disabilities Schedule – DSM IV version (AUDADIS-IV). Reliability and validity of the AUDADIS-IV measures for alcohol use disorders are extensively discussed elsewhere (Grant et al., 2004; Ruan et al., 2008; Hasin et al., 1997). Diagnosis of lifetime alcohol abuse required that respondents satisfied at least 1 of the 4 abuse criteria within any 12-month period. Diagnosis of lifetime alcohol dependence required that respondents satisfied at least 3 of the 7 dependence criteria within any 12-month period. Any participant who met diagnostic criteria for either lifetime alcohol abuse or dependence was defined as having lifetime AUD.

2.2.4—Lifetime psychiatric disorders were assessed using the AUDADIS-IV to determine the presence of any lifetime DSM-IV psychiatric disorders. The mood disorders assessed included major depressive episode, mania, dysthymia and hypomania. Anxiety disorders included panic disorder with and without agoraphobia, agoraphobia, social phobia, specific phobia, posttraumatic stress disorder and generalized anxiety disorder (Chen et al., 2010). Reliability and validity of the NESARC mood and anxiety disorder measures are extensively discussed in detail elsewhere (Grant and Kaplan, 2005; Grant et al., 2004).

2.2.5—Lifetime drug use disorders were assessed in the NESARC included DSM-IV diagnoses of abuse and dependence for each of 10 separate categories of medical and illicit drugs: sedatives, tranquilizers, opiates, stimulants, cocaine, cannabis, hallucinogen, inhalants/solvents, heroin, and other drugs. In this study, drug use disorders were categorized as any prescription drug use disorder (sedatives, tranquilizers, opioids, and amphetamine), cannabis use disorder, other drug use disorder (hallucinogens, cocaine, inhalants/solvents, heroin and other drug), and any drug use disorder, which included any of these drug use disorders.

2.3 Statistical Analysis

To assess whether sexual orientation was significantly associated with sociodemographic characteristics, and diagnostic co-occurring psychiatric and drug use disorders, we first compared sexual minority-identified versus heterosexual participants using design-based Rao-Scott correction F-statistic chi-square tests. Next, a series of multivariable logistic regression analyses were conducted to compare sexual minority versus heterosexual participants who met criteria for a lifetime AUD on diagnostic co-occurring psychiatric and drug use disorders, adjusting for sociodemographic variables of interest (age, race/ethnicity, marital status, education, employment, family income, and past-year health insurance). Adjusted odds ratios (AOR) and 95% CIs are reported. All analyses took into account the analytical weights and clustering within sample strata using Taylor linearization implemented via STATA survey commands. All analyses were conducted using STATA Statistical Software, version 13.0. All *p*-values are two-sided.

3. RESULTS

3.1. Sociodemographic Characteristics

Of the 6,899 adult male participants with AUD who were included in this analysis, 176 (2.6% weighted) identified as a sexual minority and 6,723 (97.4%) identified as heterosexual. Table 1 shows that sexual minority men with AUD were significantly less likely than heterosexual men with AUD to be married or living with partner, less likely to be employed full time, more likely to have completed college or higher degree, and more likely to have a past year family income < \$20,000.

3.2. Prevalence of Diagnostic Co-occurring Psychiatric and Drug Use Disorders

Table 2 presents weighted prevalence estimates for lifetime co-occurring psychiatric and drug use disorders. Compared to heterosexual men with AUD, sexual minority men with AUD had a higher prevalence of any mood disorders (45.2% vs. 26.1%) including major depressive episode (40.9% vs. 20.5%) and dysthymic episode (8.0% vs. 4.7%). Sexual minority men with AUD also had a significantly higher prevalence of any anxiety disorder (44.9% vs. 24.75%), including panic disorder without agoraphobia (14.9% vs. 4.6%) and with agoraphobia (4.5% vs. 1.6%), social phobia (15.8% vs. 8.1%), specific phobia (24.7% vs. 13.0%), posttraumatic stress disorder (15.9% vs. 7.7%), and generalized anxiety disorder (18.3% vs. 6.7%). Finally, sexual minority men with AUD had a higher prevalence of any drug use disorder (43.7% vs. 28.3%), any prescription drug use disorder (16.7% vs. 9.4%), cannabis use disorder (36.6% vs. 24.3%), and other drug use disorder (18.3% vs. 10.8%).

Table 3 presents the adjusted odds ratios (AOR) and 95% confidence intervals (95% CI) from multivariable logistic regression analyses comparing sexual minority and heterosexual men with AUD on diagnostic co-occurring psychiatric and drug use disorders. Adjusting for sociodemographic covariates, sexual minority men with AUD were more likely than heterosexual men to have any mood disorder (AOR = 1.80, 95% CI 1.14, 2.83), major depressive episode (AOR = 2.14, 95% CI 1.35, 3.38), any anxiety disorder (AOR = 2.50, 95% CI 1.74, 3.60), panic disorder without agoraphobia (AOR = 3.08, 95% CI 1.70, 5.58), specific phobia (AOR = 2.29, 95% CI 1.50, 3.49), posttraumatic stress disorder (AOR = 2.15, 95% CI 1.35, 3.43), and generalized anxiety disorder (AOR = 3.11, 95% CI 1.87, 5.18). Compared to heterosexual participants, sexual minority men with AUD also had significantly greater odds of any drug use disorder (AOR = 1.74, 95% CI 1.15, 2.62).

4. DISCUSSION

In this nationally representative survey, we found a significantly higher prevalence of lifetime co-occurring psychiatric and drug use disorders among sexual minority men with AUD compared with their heterosexual male counterparts. Sexual minority men with AUD had between a two- to three-fold greater odds of major depressive episodes, panic disorder without agoraphobia, specific phobia, posttraumatic stress disorder and general anxiety disorder, as well as a nearly two-fold greater odds of any drug use disorder and any mood disorder, compared with heterosexual men with AUD. The elevated co-occurrence of lifetime psychiatric and drug use disorders in this specific AUD subgroup suggests that

alcohol interventions for sexual minority men require attention to these health conditions that might complicate AUD treatment.

These findings are consistent with previous research showing diagnostic co-occurring psychiatric and substance use disorders among sexual minority populations (Cochran et al., 2003; Gilman et al., 2001; Shoptaw et al., 2001; Stall et al., 2001). There has been increasing attention to the psychosocial factors that potentially explain these health challenges among sexual minority populations. According to minority stress theory (Meyer, 2003), sexual minority individuals are psychologically vulnerable to the cumulative effects of social stressors associated with anti-gay stigma, lack of social support, and discrimination. In the absence of adaptive coping resources, the effects of social stress over time can result in maladaptive behavioral health decisions and psychological responses among sexual minority individuals (Hatzenbuehler, 2009; Meyer et al., 2008). Although these psychosocial processes cannot be tested directly using the NESARC, minority stress theory provides a compelling framework for understanding the elevated diagnostic co-occurrence of psychiatric and drug use disorders among sexual minority men with AUD. For example, proximal minority stressors such as internalized heteronegativity and rejection sensitivity may lead to alcohol use as a coping strategy, which subsequently increases the likelihood of psychiatric and drug use disorders over time (Hatzenbuehler, 2009). Future research is warranted to understand the ways in which proximal minority stressors are related to coping strategies, and subsequently drug and psychiatric co-occurring disorders.

Findings from this paper pose challenges to AUD treatment interventions for sexual minority men. To date, there have been only a small number of trials intervening on unipolar alcohol use disorders among sexual minority men (Wray et al., 2014); however, diagnostic co-occurring psychiatric and drug use disorders worsen the course of each problem, and have strong effects on treatment needs (Mueser et al., 2006). Within the broader literature, reviews have demonstrated the effectiveness of psychological interventions for co-occurring substance and psychiatric problems, with integrated treatment programs targeting both substance use and mental health showing superior outcomes compared to substance use treatments alone (Hesse, 2009). Given the high prevalence of lifetime co-occurring psychiatric and drug use disorders among sexual minority men, our findings also point to the importance of developing culturally-tailored, integrated treatment programs for young sexual minority men.

Strengths of this paper include the use of a nationally representative sample and the inclusion of well-established and validated measures of lifetime AUD, psychiatric disorders, and drug use disorders. However, there are important limitations of this paper. As noted, the findings reported here do not provide information about the theoretical mechanisms that explain diagnostic co-occurring psychiatric and drug use disorders of AUD among sexual minority men. Further, we did not examine attributable risk associated with specific co-occurring disorders, e.g. psychiatric illness or drug use disorders, among this sample of sexual minority men, which remains an important area for future research. The analyses compared self-identified sexual minority men versus heterosexual men, and thus might not generalize to men who have same-gender sex but who do not identify as gay or bisexual. For example, research has illustrated the complexity of disclosure of one's sexual orientation on

health outcomes such that “outness” was predictive of better physical health outcomes for men of high socioeconomic status but worse for men with lower socioeconomic status (McGarrity and Huebner, 2013). As such, future research is warranted to better understand how and for whom sexual orientation disclosure is related to diagnostic co-occurring psychiatric and drug use problems. Given the small cell sizes within the sexual minority group as a whole, we were unable to analyze health variables within specific subgroups, such as bisexual men. Further, there was a substantial amount of men who did not answer the sexual orientation question. In bivariate analyses, men who did not answer the sexual orientation question were significantly more likely to be married and have lower education attainment compared to sexual minority identified men. There were no other demographic differences between these two groups. Due to gender differences in psychiatric and substance use disorders (Gattis et al., 2012), we did not include women in these analyses, which represents an important area for future research. Finally, the cross-sectional survey design does not permit inferences about temporal order among variables or trends over time.

Future research can clarify the role of psychosocial variables related to minority stress as well as other variables, e.g., personality or individual differences, biological factors, that explain the greater diagnostic co-occurrence of psychiatric and drug use disorders among sexual minority men with AUD. Integrated treatment programs should be designed and rigorously tested in order to address the high likelihood of sexual minority men who present with diagnostic co-occurring psychiatric and drug use disorders problems. Both in-patient and community-based interventions are needed; the latter can better reach subgroups of sexual minority populations who have limited access to health services (Institute of Medicine, 2011). Studies of resilience and positive coping strategies in this population can provide guidance to the development of interventions that promote wellness and buffer against the risk for AUD and diagnostic co-occurring psychiatric and drug use risks among sexual minority men (Herrick et al., 2011).

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HIGHLIGHTS

- In this representative sample of US adults, 2.6% of men identified as a sexual minority.
- Sexual minority men with AUD had high prevalence of mood and anxiety disorders
- Sexual minority men with AUD had high prevalence of drug use disorders.
- Interventions addressing multi-substance use and mental health are needed.

Table 1

Characteristics of heterosexual and sexual minority males with lifetime alcohol use disorder (AUD), NESARC - Wave 2 (2004–2005)

Heterosexual (n=6,723)Sexual Minority (n=176)					
	%	95% CI	%	95% CI	P
Age (at Wave 1)					
Mean ± SE					.18
18–24	14.2	(13.1, 15.2)	14.1	(9.0, 21.2)	
25–44	44.0	(42.6, 45.5)	46.0	(37.7, 54.6)	
45–64	32.0	(30.7, 33.4)	35.5	(28.2, 43.5)	
65 and older	9.8	(9.1, 10.6)	4.5	(2.2, 8.8)	
Race/Ethnicity					
White, non-Hispanic	77.0	(74.2, 79.6)	73.4	(64.3, 80.9)	.66
Black, non-Hispanic	8.4	(7.2, 9.7)	8.0	(4.5, 13.7)	
Other, non-Hispanic	4.6	(3.7, 5.6)	6.1	(2.6, 13.6)	
Hispanic	10.1	(8.1, 12.5)	12.5	(7.9, 19.2)	
Marital Status					
Married	61.7	(60.3, 63.1)	13.5	(8.1, 21.6)	<.0001
Living with partner	4.3	(3.7, 5.0)	13.6	(8.0, 22.2)	
Widowed/Divorced/Separated	14.5	(13.6, 15.5)	17.8	(12.3, 24.9)	
Never married	19.6	(18.3, 20.9)	55.2	(45.6, 64.4)	.99
Born in United States					
Yes	92.4	(90.5, 93.9)	92.4	(86.7, 95.8)	
No	7.6	(6.1, 9.5)	7.6	(4.2, 13.3)	<.001
Employment					
Employed - full time	70.5	(69.1, 71.8)	58.9	(49.0, 68.0)	
Employed - part time	7.0	(6.3, 7.8)	16.3	(10.2, 25.1)	
Unemployed/Retired	18.8	(17.6, 19.9)	18.5	(12.7, 26.1)	
Disabled	3.8	(3.2, 4.4)	6.4	(3.8, 10.5)	
Highest level of education					
Less than high school	13.4	(12.2, 14.7)	4.6	(2.1, 9.9)	<.001
High school or GED	27.7	(26.0, 29.4)	17.6	(11.5, 26.0)	

	Heterosexual (n=6,723)		Sexual Minority (n=176)		P
	%	95% CI	%	95% CI	
Some college	31.9	(30.5, 33.4)	36.3	(28.5, 44.8)	
Completed college	18.4	(17.0, 20.0)	29.1	(21.4, 38.3)	
Completed Master's or higher	8.6	(7.7, 9.6)	12.4	(7.7, 19.4)	
Total family income past year					<.0001
Less than \$19,999	14.8	(13.7, 16.0)	29.3	(22.2, 37.5)	
\$ 20,000 to \$ 34,999	16.2	(15.2, 17.3)	24.2	(16.5, 34.1)	
\$ 35,000 to \$ 69,999	34.3	(32.9, 35.8)	26.7	(19.6, 35.3)	
\$ 70,000 or more	34.7	(32.7, 36.8)	19.8	(13.7, 27.7)	
Any Health Insurance at any time past year [#]					.45
Yes	85.7	(84.4, 86.9)	83.0	(73.7, 89.4)	
No	14.3	(13.1, 15.6)	17.1	(10.6, 26.3)	
Private Health Insurance at any time past year					.09
Yes	70.9	(69.4, 72.3)	64.1	(55.5, 71.8)	
No	29.1	(27.7, 30.6)	36.0	(28.2, 44.5)	

% : weighted

[#] Any insurance includes Medicare, Medi-gap, Medicaid, Tricare/Champus/Champus/VA or other military healthcare, private health insurance, government/state sponsored health insurance, long-term care insurance, and any other health insurance plan.

Prevalence of mood disorder, anxiety disorder, and drug use disorder in heterosexual and sexual minority men with lifetime AUD, NESARC – Wave 2 (2004–2005).

Table 2

	<u>Heterosexual (n=6,723)</u>			<u>Sexual minority (n=176)</u>			<i>p</i>
	%	95% CI		%	95% CI		
<u>Any Mood Disorder</u>							<.0001
Yes	26.1	(24.8, 27.5)		45.2	(35.8, 54.9)		
No	73.9	(72.5, 75.2)		54.8	(45.1, 64.2)		
<u>Major Depressive Episode</u>							<.0001
Yes	20.5	(19.3, 21.8)		40.9	(31.6, 50.9)		
No	79.5	(78.2, 80.7)		59.2	(49.1, 68.5)		
<u>Manic Episode</u>							.06
Yes	6.9	(6.2, 7.7)		10.9	(6.8, 17.3)		
No	93.1	(92.3, 93.8)		89.1	(82.8, 93.3)		
<u>Dysthymic Episode</u>							.04
Yes	4.7	(4.1, 5.4)		8.0	(4.9, 13.0)		
No	95.3	(94.6, 95.9)		92.0	(87.0, 95.1)		
<u>Hypomanic Episode</u>							.78
Yes	5.2	(4.6, 6.0)		5.9	(2.6, 12.8)		
No	97.8	(94.1, 95.4)		94.1	(87.2, 97.4)		
<u>Any Anxiety Disorder</u>							<.0001
Yes	24.7	(23.4, 26.1)		44.9	(36.6, 53.5)		
No	75.3	(74.0, 76.6)		55.1	(46.5, 63.5)		
<u>Panic Disorder without Agoraphobia</u>							<.0001
Yes	5.3	(4.6, 6.0)		14.9	(9.4, 22.8)		
No	94.7	(94.0, 95.4)		85.1	(77.2, 90.6)		
<u>Panic Disorder with Agoraphobia</u>							<.01
Yes	1.6	(1.2, 2.0)		4.5	(2.1, 9.4)		
No	98.4	(98.0, 98.8)		95.5	(90.7, 97.9)		
<u>Agoraphobia without history of Panic Disorder</u>							.06
Yes	0.3	(0.2, 0.6)		1.1	(0.3, 3.4)		

	<u>Heterosexual (n=6,723)</u>		<u>Sexual minority (n=176)</u>		<i>p</i>
	%	95% CI	%	95% CI	
Social Phobia					
No	99.7	(99.4, 99.8)	98.9	(96.6, 99.7)	<.01
Yes	8.1	(7.4, 8.9)	15.8	(10.0, 24.1)	
No	91.9	(91.1, 92.6)	84.2	(75.9, 90.0)	
Specific Phobia					
Yes	13.0	(12.1, 14.0)	24.7	(18.1, 32.6)	<.001
No	87.0	(86.0, 87.9)	75.4	(67.4, 81.9)	
Posttraumatic Stress Disorder					
Yes	7.7	(7.0, 8.4)	15.9	(11.0, 22.5)	<.001
No	92.3	(91.6, 93.0)	84.1	(77.5, 89.0)	
Generalized Anxiety Disorder					
Yes	6.7	(5.9, 7.5)	18.3	(13.0, 25.3)	<.0001
No	93.4	(92.6, 94.1)	81.7	(74.7, 87.1)	
Any Drug Use Disorder [#]					
Yes	28.3	(26.8, 29.8)	43.7	(35.3, 52.5)	<.001
No	71.7	(70.2, 73.2)	56.3	(47.5, 64.7)	
Any Prescription Drug Use Disorder [°]					
Yes	9.4	(8.5, 10.4)	16.7	(11.3, 23.8)	<.01
No	90.6	(89.6, 91.5)	83.3	(76.2, 88.7)	
Cannabis Use Disorder					
Yes	24.3	(22.9, 25.7)	36.6	(28.5, 45.4)	<.01
No	75.7	(74.3, 77.1)	63.4	(54.6, 71.5)	
Other Drug Use Disorder [§]					
Yes	10.8	(9.8, 11.8)	18.3	(12.0, 26.9)	.02
No	89.2	(88.2, 90.2)	81.7	(73.1, 88.0)	

[#] Any drug use disorder includes sedatives, tranquilizers, opioids, amphetamine, cannabis, hallucinogen, cocaine, inhalants/solvents, heroin and other drug use disorder.

[°] Any Prescription use disorder includes sedatives, tranquilizers, opioids, and amphetamine use disorder

[§] Other drug use disorder includes hallucinogen, cocaine, inhalants/solvents, heroine and other drug use disorder

Table 3

Adjusted multiple regressions comparing co-occurring psychiatric disorders and drug use disorders in sexual minority versus heterosexual men with lifetime AUD, NESARC – Wave 2 (2004–2005).

	Sexual Minority vs Heterosexual (ref)		
	AOR	95% CI	P
<u>Diagnostic variables - lifetime diagnosis</u>			
Any Mood Disorder	1.80	(1.14, 2.83)	.01
Major Depressive Episode	2.14	(1.35, 3.38)	<.01
Manic Episode	1.15	(0.61, 2.21)	.66
Dysthymic Episode	1.51	(0.82, 2.78)	.18
Hypomanic Episode	0.91	(0.35, 2.36)	.85
Any Anxiety Disorder	2.50	(1.74, 3.60)	<.001
Panic Disorder without Agoraphobia	3.08	(1.70, 5.58)	<.001
Panic Disorder with Agoraphobia	1.82	(0.67, 4.97)	.24
Agoraphobia without history of Panic Disorder	2.74	(0.60, 12.41)	.19
Social Phobia	1.71	(0.89, 3.27)	.10
Specific Phobia	2.29	(1.50, 3.49)	<.001
Posttraumatic Stress Disorder	2.15	(1.35, 3.43)	<.01
Generalized Anxiety Disorder	3.11	(1.87, 5.18)	<.001
<u>Drug Use – lifetime</u>			
Any Drug Use Disorder [‡]	1.74	(1.15, 2.62)	.01
Any Prescription drug use disorder [°]	1.65	(0.96, 2.83)	.07
Cannabis Use Disorder	1.52	(0.99, 2.33)	.06
Other Drug Use Disorder [§]	1.38	(0.78, 2.42)	.26

Adjusted for age, race/ethnicity, marital status, education, employment, family income and any insurance past year.

[‡] Any substance abuse includes sedative, tranquilizer, opioid, amphetamine, cannabis, hallucinogen, cocaine, inhalant/solvent, heroin and other drug use disorder.

[°] Any Prescription use disorder includes sedative, tranquilizer, opioid, and amphetamine use disorder

[§] Other drug use disorder includes hallucinogen, cocaine, inhalant/solvent, heroine and other drug use disorder