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Relation between Psychiatric Syndromes and Behaviorally Defined Sexual Orientation in a Sample of the US Population

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Abstract

Most surveys of the prevalence of psychiatric disorders among lesbians and gay men find no increased risk in comparison with heterosexuals. However, the majority of this work has relied on convenience samples drawn from the visible lesbian and gay community. The authors examined differences in 1-year prevalence of six psychiatric syndromes among sexually active individuals in the 1996 National Household Survey of Drug Abuse who reported either exclusive heterosexuality (n = 9,714) or having any same-gender sex partners (n = 194) in the prior year. Although nearly three quarters of homosexually active individuals did not meet criteria for any of the six syndromes assessed, in multivariate logistic regression analyses, homosexually active men were more likely than other men to evidence major depression and panic attack syndromes. In contrast, homosexually active women were more likely than other women to be classified with alcohol or drug dependency syndromes. Both men and women reporting any same-gender sex partners were more likely than others to have used mental health services in the year prior to interview. These findings suggest a small increased risk among homosexually active populations in 1-year psychiatric morbidity and use of mental health care services.

Keywords

health surveys; homosexuality; mental disorders; psychiatry; substance-related disorders

Perspectives on possible relations between homosexuality and psychiatric disorders have changed remarkably over the last half of this century (1). While homosexuality was once viewed as a psychiatric disorder or as a strong indicator of one, beginning in the late 1950s, empirical studies using small, nonclinical samples repeatedly found no elevation in rates of general psychiatric morbidity among lesbians or gay men when they were compared with similar heterosexuals (2–8). More recently, however, research examining psychiatric symptoms among gay men and lesbians has emphasized the role of social stigmatization in creating a chronic social stressor in the lives of many gay men and lesbians (9–14). Over the last decade in particular, research focusing on the possible psychiatric sequelae of social stigmatization and, for gay men, the stress of coping with the human immunodeficiency virus (HIV) epidemic, increasingly has found evidence that lesbians and gay men may be at greater-than-expected risk for several stress-related disorders, including drug and/or alcohol abuse (9, 15–17), suicide attempts during adolescence and young adulthood (18–20), depressive distress (15, 21, 22), anxiety disorders (15), and perhaps bipolar episodes (23).

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One or the difficulties in interpreting the body of empirical evidence in this arena is that the majority of the studies carried out to date have used convenience-based samples drawn from the visible lesbian and gay community. As a result, findings may have been distorted by the selection bias inherent in using highly motivated volunteer samples (24). Population-based psychiatric surveys that identify individuals who may differ in terms of sexual orientation are extremely rare. To our knowledge, findings from only five such surveys have been reported. Two surveys (18, 19) examining the prevalence of suicide symptoms found an excess of suicide risk among homosexually active youth, particularly males. A third study (20), which did not include female respondents, also found greater risk for prior suicide attempts among homosexually experienced men when compared with exclusively heterosexually experienced men, but in terms of lifetime affective disorders, only a trend was observed for greater risk of recurrent episodes of depression. Possible differences with regard to other psychiatric symptoms, such as anxiety-related disorders and alcohol or drug dependency, were not assessed. Finally, two population-based studies from San Francisco, California, focusing on alcohol use among men (25) and women (26) found few or no differences between gay men or lesbians and heterosexual men or women, respectively. Neither study formally assessed the prevalence of alcohol use disorders.

In this study, we had two objectives: 1) to determine whether homosexually active individuals in the US population are at greater risk for selected psychiatric syndromes and related health care utilization and 2) to examine by gender the patterns of any greater psychiatric risk observed. To do so, we used data from the 1996 National Household Survey of Drug Abuse (NHSDA) (27), which indirectly indexed homosexuality among individuals aged 18 years or older by asking a question concerning the gender(s) of sexual partners in the year prior to interview. Also assessed was evidence for both alcohol and illicit drug dependency and four psychiatric syndromes (major depression, generalized anxiety disorder, panic attack, and agoraphobia) previously shown to be highly comorbid with substance dependency disorders (28). Prior research indicates that two of these mental health indicators (drug dependency and alcohol dependency) are more commonly diagnosed among men, while the other four are more frequently diagnosed in women (28–30). Given that effective health interventions targeted toward the gay community often differ in their approaches to lesbians and gay men (31), identifying gender-based differences within this subpopulation will facilitate the development of appropriate services.

MATERIALS AND METHODS

The NHSDA is a yearly population-based survey conducted by the Substance Abuse and Mental Health Services Administration in order to estimate the prevalence of substance use in the US population. The survey uses complex stratified, multistage cluster sampling of the civilian noninstitutionalized US population aged 12 years or older. Weights are assigned to allow for estimation of population parameters, adjusting for selection probability, nonresponse, and poststratification. The data set is available for public use and is described in more detail elsewhere (27, 28).

In 1996, supplements to the core interview assessed two domains of interest to the current study. Respondents aged 18 years or older were asked about the gender(s) of their sexual partners during the previous 12 months. This permitted classification of the sample into three groups: those claiming to have had no sexual partners in the past year (n = 2,479), those indicating only opposite-gender sex partners (n = 9,714), and those reporting any same-gender partners, with approximately two thirds having only same-gender partners (n = 135) and one third having sex partners of both genders (n = 59). Because individuals with no sexual partners in the prior year could not be reliably classified with regard to sexual

orientation, they were dropped from further consideration. Thus, the final sample consisted of 9,908 respondents who reported having at least one sexual partner in the previous year.

Interview questions also sought diagnostic screening evidence for the possible presence or absence of six psychiatric disorders in the prior year. These included major depression, generalized anxiety disorder, panic attacks, agoraphobia, and drug and/or alcohol dependency. The interview itself did not strictly follow the criteria of the *Diagnostic and Statistical Manual of Mental Disorders*, Third Edition, Revised (DSM-III-R) (32) or the Fourth Edition of the DSM (DSM-IV) (33), which foreclosed rendering an interview-based diagnosis. However, respondents who were probable cases for the disorders could be identified, as described below.

Four mental health screening scales were developed by the Substance Abuse and Mental Health Services Administration using questions adapted from the National Comorbidity Survey, which was itself based on the University of Michigan-Composite International Diagnostic Interview (29). Using data from the National Comorbidity Survey, the Substance Abuse and Mental Health Services Administration determined optimal NHSDA scale cutpoints for classifying individuals as cases on the basis of extensive analyses examining differential outcomes in subsamples that varied by age, sex, race, education, urbanicity, and geographic region (28). The four screening scales developed for use in the NHSDA were highly effective in identifying diagnosed cases in the National Comorbidity Survey sample (final kappa values ranged from 0.92 to 1.00) (28).

Diagnosis of both drug dependency and alcohol dependency (34) corresponded to modified DSM-IV criteria, which require the presence of three or more of seven specific symptoms (33). One criterion, withdrawal symptoms, was not assessed during the interview. In all, questions were asked about the use of nine different classes of drugs (marijuana, cocaine, heroin, hallucinogens, inhalants, pain killers, tranquilizers, stimulants, and sedatives) as well as alcohol. Dependency on a specific class of drug was coded as affirmative if the respondent indicated having had three or more of the following symptoms in the previous 12 months: tolerance for the drug, frequent consumption of larger amounts over a longer period man intended, a desire to cut down on use but an inability to do so, the spending of a great deal of time in drug-related activities, impairment in social obligations or recreational activities because of substance use, and the presence of emotional and/or physical problems caused by drug use. The nine nonalcohol drug classes were collapsed into a single category of illicit drug dependency, leaving alcohol dependency separate. A further restrictive criterion for alcohol dependency was use of alcohol in a minimum of 25 days in the prior year. Using data from the National Comorbidity Survey, Epstein and Gfroerer (34, 35) compared dependency estimates using the NHSDA strategy of labeling caseness for dependency syndrome and diagnosing according to strict DSM-IV diagnostic criteria. They report that this method proved to be a good approximation of diagnosis.

Three questions in the interview assessed use of related health care services. Respondents indicated whether they had received any treatment or counseling for drug or alcohol use in the past 12 months. In addition, they reported on whether they had received any inpatient or outpatient health services in the prior year for psychological or emotional reasons. Those who answered in the affirmative for any of the three types of health care were classified as having used mental health/substance abuse services.

Respondents also provided information on personal demographic characteristics, including age, level of education, annual personal income, and ethnic/racial background. They were queried about experiences with HIV testing, but neither the results of testing nor the presence or absence of any HIV-related diagnosis was determined.

Data were analyzed using SUDAAN (36), a set of statistical software programs designed specifically for complex weighted sample designs such as that used in the NHSDA. In this paper, we report the 1-year prevalence of psychiatric syndromes and utilization of related health care services among persons of differing sexual partner patterns. Analyses examining associations between positive diagnoses for the six psychiatric syndromes, utilization of health services, and demographic characteristics and sexual histories were conducted using logistic regression models. Data are presented separately for men and women, given substantial prior research (29, 30) that strongly demonstrates differential gender-related patterns for the psychiatric disorders measured. Furthermore, because several additional factors such as age, race/ethnicity, educational attainment, and income are known risk factors for the psychiatric syndromes examined here (29, 30) and have been shown in a prior population-based survey to vary between homosexually and heterosexually active men recruited with methods similar to those of the NHSDA (20), they were considered possible confounders. We report results from analyses both unadjusted and adjusted for the demographic confounders, using 95 percent confidence intervals to indicate sampling variability.

RESULTS

Overall, 1.6 percent (95 percent confidence interval (CI): 1.2, 2.1) of sexually active persons reported having had one or more same-gender sex partners in the previous year. Of these, approximately 57 percent (95 percent CI: 52, 62) were men. Table 1 presents gender-specific estimated demographic characteristics from respondent data. Among men, persons who reported having any same-gender sex partners possessed higher levels of education than those indicating only opposite-gender sex partners, after adjustment for the remaining demographic factors. Among women, persons who claimed to have had any same-gender sex partners were younger than those who did not, after similar adjustment for other demographic factors. Otherwise, homosexually active men and women were similar to exclusively heterosexually active men and women, respectively. As might be expected, respondents reporting any same-gender sex partners in the prior year were more likely than persons indicating only opposite-gender sex partners to report having had an HIV test at some time in the past (68 percent tested (95 percent CI: 62, 74) vs. 36 percent tested (95 percent CI: 35, 37); $p < 0.001$). Primarily, these were homosexually active men (83 percent tested; 95 percent CI: 64, 100) as opposed to homosexually active women (47 percent tested; 95 percent CI: 28, 65).

Table 2 shows 1-year prevalences of the six psychiatric syndromes measured in the 1996 NHSDA by both gender and the gender of sex partners in the prior year. Overall, 15.3 percent (95 percent CI: 14.0, 16.6) of the sample met criteria for at least one psychiatric syndrome. The most common syndrome was major depression (6.9 percent; 95 percent CI: 6.1, 7.8), followed by alcohol dependency (4.9 percent; 95 percent CI: 4.2, 5.5). In addition, approximately 6.2 percent (95 percent CI: 5.3, 7.1) of individuals reported receiving mental health or substance use services in the prior year. As has been shown elsewhere (28, 29), overall men were more likely than women to evidence both drug dependency (adjusted odds ratio (OR) = 2.37; 95 percent CI: 1.67–3.35) and alcohol dependency (adjusted OR = 3.73; 95 percent CI: 2.76–5.05) and were less likely to be diagnosed with major depression (adjusted OR = 0.70; 95 percent CI: 0.50–0.98), after adjustment for possible confounding due to age, educational attainment, income, or ethnic/racial background. There were no other gender differences in the prevalence of psychiatric syndromes or in treatment utilization.

Table 3 summarizes the relations between 1-year psychiatric histories and the gender(s) of sex partners. Men who reported having same-gender sex partners were more likely than

exclusively heterosexually active men to be diagnosed with at least one psychiatric syndrome. In particular, they were more likely to evidence the syndromes of major depression and panic attack than the other men. In addition, homosexually active men were more likely than exclusively heterosexually active men to report that they had received mental health or substance use services in the year prior to interview. Overall, men who evidenced at least one psychiatric syndrome were more likely than those who did not to have used mental health or substance use services in the prior year, after adjustment for demographic characteristics (adjusted OR = 8.33; 95 percent CI: 5.56–12.50). This relation did not differ between men reporting any same-gender sex partners (33 percent received services; 95 percent CI: 9,57) and those reporting only opposite-gender sex partners (21 percent received services; 95 percent CI: 16, 27) (adjusted OR = 1.81; 95 percent CI: 0.58, 5.58). However, among those men who did not meet criteria for any of the six psychiatric syndromes, homosexually active men were more likely to acknowledge receiving services (9 percent; 95 percent CI: 1, 17) than were exclusively heterosexually active men (3 percent; 95 percent CI: 2, 4) (adjusted OR = 3.53; 95 percent CI: 1.25, 10.00).

Among women, those who indicated having same-gender sex partners were no more likely than exclusively heterosexually active women to meet criteria for at least one psychiatric disorder. However, in terms of specific syndromes, homosexually active women were more likely than other sexually active women to evidence drug or alcohol dependency. No other differences were observed for the remaining four psychiatric syndromes. Like men, women who reported having any same-gender sex partners were also more likely than exclusively heterosexually active women to indicate that they had received mental health or substance use services in the year prior to interview. Among those evidencing at least one psychiatric syndrome, use of mental health/substance abuse services was reported by 48 percent (95 percent CI: 22, 74) of homosexually active women and 22 percent (95 percent CI: 18, 26) of exclusively heterosexually active women (adjusted OR = 2.76; 95 percent CI: 0.95, 7.99). In contrast, among women who did not meet criteria for any of the six psychiatric syndromes measured, use of such services was lower: It was reported by approximately 5 percent (95 percent CI: 0, 10) of women acknowledging any female sex partners and by 3 percent (95 percent CI: 2, 4) of women indicating only male sex partners (adjusted OR = 1.81; 95 percent CI: 0.53, 6.12).

Comparing only men and women reporting any same-gender sex partners, there were no significant gender differences in the prevalence of any of the six syndromes or use of mental health/substance abuse services, with or without consideration of the effect of other demographic influences. Furthermore, there were no significant differences between persons reporting only same-gender sex partners and those reporting both male and female partners in the past year, when data were examined separately by gender.

DISCUSSION

Consistent with most current views on the relation between homosexuality and psychological disorders (1), we estimated that nearly three quarters of individuals who reported having same-gender sex partners in the previous year did not meet criteria for any of six concomitant psychiatric syndromes. These findings parallel much prior work that has shown an absence of diagnosable psychopathology in the majority of gay men and lesbians surveyed in convenience-based samples, where volunteers were not selected on the basis of HIV risk (2–8, 17). The fact that the NHSDA is a population-based sample drawn without reference to either sexual orientation or level of psychopathology provides further strong support for the conclusion that homosexual behavior is not usually accompanied by psychiatric disturbance.

Despite this, we did find increased risk for several psychiatric disorders in this population, in comparison with sexually active individuals who reported having exclusively opposite-gender partners. Specifically, as compared with exclusively heterosexually active men, men reporting same-gender sex partners appear to be at greater risk for the diagnosis of major depression and panic attacks. This finding may partly be due to the psychological effects of coping with the HIV epidemic among gay men. Recent studies examining associations between HIV risk and male homosexuality in the United States have repeatedly documented higher-than-expected levels of depressive distress (21, 22) and a broad spectrum of psychiatric disturbances, primarily depression and anxiety (15, 37), among gay men who are infected or at high risk for infection. Unfortunately, HIV infection status was not assessed in the NHSDA, but we did find that more than four fifths of men reporting same-gender partners had previously been tested for HIV infection. A sizable minority of these men presumably are infected with HIV (38) and aware of their infection status.

The current findings are consistent with a recent report from the Third National Health and Nutrition Examination Survey (20) comparing lifetime prevalences of affective disorders between men reporting any prior same-gender sex partners and those claiming only opposite-gender sex partners. The investigators reported that men with same-gender sex partners were possibly at a small increased risk for recurrent depression, but because of the study's relatively low power to detect differences in a rare subpopulation (a problem shared by the current study), the results did not reach statistical significance. Approximately 15 percent of homosexually experienced men in the Third National Health and Nutrition Examination Survey met DSM-III-R criteria for lifetime major depression, as opposed to 6.5 percent of exclusively heterosexually experienced men (20). This prevalence is similar to the pattern of 1-year prevalence we observed in the NHSDA, where slightly more than 13 percent of men reporting same-gender sex partners met criteria for major depression in contrast to approximately 5 percent of exclusively heterosexually active men. Although the diagnostic time periods of the two studies differ, the findings are consistent in suggesting that gay men may experience a small increased risk for depression.

We also estimated that women who reported having same-gender sex partners were more likely than exclusively heterosexually active women to meet criteria for drug and alcohol dependency. This finding is consistent with several convenience-based surveys of lesbian and bisexual women's drug and alcohol use (9, 16, 17), though it is at odds with a randomly drawn sample of women in the San Francisco area (26), where self-ratings of being a problem drinker or recovering alcoholic did not show an excess risk for lesbian and bisexual women. However, the San Francisco survey suffered from a very low response rate (23 percent). Prior researchers (9, 17) have emphasized that moderate use of alcohol and illicit drugs, primarily marijuana and cocaine, is more normative among lesbians than among heterosexual women. In addition, there appear to be differential patterns of alcohol and drug use in the gay community in contrast to the general US population, including a relative absence of age-related declines in consumption (9). With greater prevalence of alcohol or drug use among lesbian and bisexual women (9, 17) in contrast to other women, more are at risk for developing alcohol or drug dependency.

In previous studies (9), an interactional pattern of problem alcohol use has been observed when gender and sexual orientation are jointly considered. Specifically, although studies of gay men frequently find no elevated risk for heavy drinking or alcohol abuse in relation to heterosexual men, patterns of problem drinking or heavy alcohol use among lesbians appear more similar to those of men in general than to those of heterosexual women (9, 17, 39). We observed a similar pattern. However, despite the greater risk for alcohol dependency that we estimated among homosexually active women in comparison with exclusively heterosexually active women, the 1-year prevalence of alcohol dependency was far lower (7

percent) than previously reported estimates of problem alcohol use among lesbians. These estimates have clustered around 30 percent (12, 26). To some extent, this may reflect differential classification of problematic alcohol use. For example, in a large-scale survey (17) of 748 lesbian and bisexual women in Chicago, Illinois, 23 percent of women were classified as having an alcohol problem (defined as reporting two or more alcohol dependency symptoms in the prior year). Similarly, we estimated that 19 percent (95 percent CI: 9, 29) of homosexually active women will report having two or more of the six alcohol dependency symptoms assessed in the 1996 NHSDA. However, this threshold for diagnosing the presence of alcohol dependency is lower than accepted diagnostic criteria (33) and appears to overstate problem use of alcohol among lesbian and bisexual women.

We also estimated greater 1-year prevalence of mental health/substance abuse service utilization among men and women who reported having any same-gender sex partners when compared with those who were exclusively heterosexually active. Very little is known about rates of mental health/substance abuse service utilization among the lesbian and gay male population. Two prior convenience-based national surveys of lesbians (10, 40) found that 75–80 percent of the women surveyed reported use of mental health services at some time in their lives. In both surveys, the most common reasons for seeking therapy were depression and relationship difficulties. A third survey (41) specifically compared utilization rates in a relatively small sample of lesbians and heterosexual women, finding that 78 percent of the lesbians but only 29 percent of the heterosexual women studied had ever been in psychotherapy. Positive community norms concerning use of psychotherapy are thought to exist for lesbian and bisexual women (10), though this has not been demonstrated empirically. For gay men, the existence of extensive HIV-related counseling services may facilitate entry into treatment. We estimated that approximately 16 percent of men and women who reported having same-gender sex partners in the past year had also used mental health/substance abuse services during the same time period. For lesbians and gay men, access to competent mental health/substance abuse services is complicated by the negative stereotypes of homosexuality among many health care service providers, which may result in inappropriate or inadequate care (42). Nonetheless, our findings and those of other studies suggest that lesbians and gay men may be overrepresented among persons receiving mental health care services.

Several considerations should be kept in mind in interpreting the findings reported here. First, infrequent reporting of same-gender sex partners is an important limitation in our ability to detect differences should they exist. Second, sexual behavior is not a perfect correlate of sexual orientation (43). Prior population-based research (44) examining patterns of sexual behavior and self-reported sexual orientation found that approximately two thirds of individuals reporting having same-gender sex partners in the prior year also would identify as lesbian, gay, or bisexual if asked, but approximately one fourth of lesbian, gay, and bisexual individuals would report having no sex partners in the prior year. Therefore, we expect that the majority of individuals in the NHSDA who indicated having same-gender sex partners also would identify their sexual orientation as gay or bisexual, but perhaps as many as one third would not. Furthermore, it seems reasonable to estimate that one fourth of persons identifying as lesbian, gay, or bisexual would be among the approximately 20 percent of the NHSDA sample who reported having no sex partners in the prior year. Third, given the paucity of prior population-based research on questions related to homosexuality, the sources and effects of bias in this area are not well understood yet. Bias in estimating the association between homosexuality and psychopathology is possible via at least three mechanisms. Failure to disclose same-gender sex partners would tend to bias results toward the null if psychiatric risk is associated with homosexual sexual experience. In addition, if homosexual/bisexual orientation and not behavior is associated with psychopathology, we may have over-or underestimated strengths of association. In contrast, if willingness to

disclose socially stigmatizing information about one's sexual history is positively associated with a similar willingness to disclose symptoms of psychopathology, we may have overestimated the association between homosexual sexual experience and psychopathology.

Despite diese limitations, the current study provides some of the first population-based prevalence estimates of relatively common psychiatric syndromes and utilization of related health care services among homosexually active individuals in the United States. On the one hand, our findings lend support to the belief that homosexuality per se is not indicative of psychiatric disturbance, and confirms some observations drawn from convenience-based samples recruited from the visible lesbian and gay male community. At the same time, however, we did find mat recent homosexual behavior was associated with several psychiatric syndromes (though differentially for men and women) and with mental health/substance abuse health care service utilization. The reasons for the increased risk may include the stress of coping with social stigmatization (9, 11, 13, 21). The investigation of this and other explanations is an important area for further research.

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Abbreviations

CI	confidence interval
DSM	Diagnostic and Statistical Manual of Mental Disorders
HIV	human immunodeficiency virus
NHSDA	National Household Survey of Drug Abuse
OR	odds ratio

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TABLE 1

Demographic characteristics of sexually active Individuals aged 18 years or older, by self-reported gender(s) of sexual partners In the previous year, National Household Survey of Drug Abuse, 1996*

Characteristic	Men					Women				
	Any same-gender partner reported		Opposite-gender partner(s) only		*P* value†	Any same-gender partner reported		Opposite-gender partner(s) only		*P* value†
	Mean or%	SE‡	Mean or%	SE		Mean or%	SE	Mean or%	SE	
Mean age (years)	34	1.4	37	0.4	0.12	33	1.2	37	0.4	0002
Level of education (%)					0.05					0.24
Less than 12 years	8	3	16	1		25	10	15	1	
High school diploma	22	7	33	1		29	7	34	1	
Some college	28	8	24	1		17	4	25	1	
College degree	42	8	28	2		29	7	25	1	
Personal annual Income more than $20,000 (%)	66	7	66	1	0.79	36	7	33	1	0.14
Ethnic/racial background (%)					0.70					
White, not Hispanic	73	6	74	1		69	6	76	1	
Black, not Hispanic	11	3	11	1		12	3	11	1	
Hispanic	7	2	11	1		14	4	9	1	
Other	9	6	4	1		4	4	4	1	

*Percentages were estimated using sampling weights.

†Estimated from logistic regression modeling evaluating the probability of same-gender sex partners from all demographic characteristics (age, ethnlcity/race, education, and income) simultaneously.

‡SE, standard error.

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TABLE 2

One-year prevalence (%) of psychiatric syndromes and utilization of health care services, by self-reported gender(s) of sexual partners in the previous year, National Household Survey of Drug Abuse, 1996*

Psychiatric variable	Men				Women			
	Any same-gender partner reported (unweighted *n* = 98)		Opposite-gender partner(s) only (unweighted *n* = 3,922)		Any same-gender partner reported (unweighted *n* = 96)		Opposite-gender partner(s) only (unweighted *n* = 5,792)	
	%	SE†	%	SE	%	SE	%	SE
Major depression	13.3	4.4	5.1	0.6	15.0	5.2	8.4	0.7
Generalized anxiety disorder	3.1	1.9	1.6	0.4	3.5	1.8	2.6	0.5
Panic attack	6.4	2.8	2.0	0.4	7.2	4.3	3.8	0.5
Agoraphobia	3.5	2.6	0.9	0.3	3.4	1.6	2.1	0.3
Drug dependency	5.7	2.5	2.8	0.3	5.0	2.0	1.3	0.2
Alcohol dependency	10.6	4.0	7.6	0.6	7.0	2.6	2.2	0.2
Any psychiatric syndrome	28.8	6.2	15.2	0.9	24.0	6.0	15.0	0.8
Receipt of mental health or substance abuse services	16.1	4.8	5.9	0.6	15.1	5.4	6.3	0.6

*Percentages were estimated using sampling weights.

†SE, standard error.

TABLE 3

Unadjusted and adjusted odds ratios relating 1-year prevalence of psychiatric syndromes and utilization of mental health care services to self-reports of same-gender sexual partners in the previous year, National Household Survey of Drug Abuse, 1996

Psychiatric variable	Men				Women			
	OR*,†	95% CI*	Adjusted OR‡	95% CI	OR†	95% CI	Adjusted OR‡	95% CI
Major depression	2.87	1.30, 6.33	2.94	1.38, 6.28	1.94	0.86, 4.41	1.79	0.74, 4.32
Generalized anxiety disorder	2.02	0.53, 7.70	2.32	0.55, 9.70	1.35	0.46, 3.94	1.54	0.49, 4.86
Agoraphobia	4.04	0.73, 22.29	4.85	0.94, 25.17	1.65	0.63, 4.36	1.41	0.52, 3.84
Panic attack	4.41	1.84, 10.59	4.30	1.53, 12.13	2.02	0.56, 7.35	1.78	0.40, 8.33
Drug dependency	2.09	0.83, 5.26	2.05	0.86, 4.93	3.97	1.65, 9.52	3.27	1.23, 8.70
Alcohol dependency	1.45	0.62, 3.41	1.33	0.55, 3.22	4.28	2.02, 9.08	2.85	1.16, 6.98
Any psychiatric syndrome	2.26	1.21, 4.23	2.29	1.34, 3.89	1.79	0.92, 3.46	1.63	0.76, 3.48
Receipt of mental health or substance abuse services	3.08	1.48, 6.40	3.10	1.52, 6.31	2.66	1.14, 6.23	2.90	1.26, 6.70

*OR, odds ratio; CI, confidence interval.

†Odds ratio was estimated from logistic regression modeling. Referent group was persons reporting opposite-gender sex partners only.

‡Odds ratio was estimated from logistic regression modeling including age, ethnicity/race, education, and income. Referent group was persons reporting opposite-gender sex partners only.