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Prevalence of Mental Disorders, Psychological Distress, and Mental Health Services Use Among Lesbian, Gay, and Bisexual Adults in the United States

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Recent estimates of mental health morbidity among adults reporting same-gender sexual partners suggest that lesbians, gay men, and bisexual individuals may experience excess risk for some mental disorders as compared with heterosexual individuals. However, sexual orientation has not been measured directly. Using data from a nationally representative survey of 2,917 midlife adults, the authors examined possible sexual orientation-related differences in morbidity, distress, and mental health services use. Results indicate that gay–bisexual men evidenced higher prevalence of depression, panic attacks, and psychological distress than heterosexual men. Lesbian–bisexual women showed greater prevalence of generalized anxiety disorder than heterosexual women. Services use was more frequent among those of minority sexual orientation. Findings support the existence of sexual orientation differences in patterns of morbidity and treatment use.

Perspectives on the prevalence of mental health disorders and the need for treatment services among lesbians and gay men have undergone remarkable changes over the last century (Bailey, 1999; Friedman, 1999). Although researchers long ago documented that “illness” models (Gonsiorek, 1996) of homosexuality lacked sufficient empirical support for theoretical predictions (Hooker, 1993), there is increasing concern that lesbians and gay men may be at elevated risk for some psychological disorders because of the harmful effects of social stigma (Fife & Wright, 2000; Kessler, Mickelson, & Williams, 1999; Markowitz, 1998; Mays & Cochran, 2001; Meyer, 1995; Otis & Skinner, 1996; Wright, Gronfein, & Owens, 2000). Researchers have shown that some forms of mental disorders, particularly affective, anxiety, and substance use disorders, are likely to be influenced by the effects of social stress (Döhrenwend, 2000; Kendler et al., 1995; Mazure, 1995). In this regard, homosexuality is still widely stigmatized despite greater acceptance evident in recent opinion polls of the American population (Butler, 2001). Lesbians and gay men commonly report

positive histories of victimization and discrimination (Herek, Gillis, & Cogan, 1999; Hershberger & D’Augelli, 1995; Krieger & Sidney, 1997), particularly in adolescence or young adulthood (D’Augelli, Hershberger, & Pilkington, 1998; Lock & Steiner, 1999). As a consequence, homosexuality may be a risk indicator for higher rates of psychological distress and some mental disorders.

Much of the recent population-based research in this area (Bloomfield, 1993; Cochran, Keenan, Schober, & Mays, 2000; Cochran & Mays, 2000a, 2000b; Faulkner & Cranston, 1998; Fergusson, Horwood, & Beautrais, 1999; Garofalo, Wolf, Wissow, Woods, & Goodman, 1999; Gilman et al., 2001; Herrell et al., 1999; Lock & Steiner, 1999; Remafedi, French, Story, Resnick, & Blum, 1998; Saewyc, Bearinger, Heinz, Blum, & Resnick, 1998; Sandfort, de Graaf, Bijl, & Schnabel, 2001; Stall & Wiley, 1988) was made possible by the serendipitous inclusion of questions concerning genders of sexual partners in large health-related studies of the general population. This attention to the occurrence of homosexual sexual behavior arose out of public health surveillance needs to track risk factors for HIV transmission in the general population. Fortunately, the addition in surveys of these questions concerning genders of sexual partners provided a first-time opportunity for researchers to compare mental health status between individuals likely to vary in sexual orientation without the usual problems of sampling bias or absent heterosexual control groups that plagued earlier research in this area (Bailey, 1999; Muehrer, 1995; Solarz, 1999).

The newer population-based work has found evidence of elevated risk for disorders in the mood, anxiety, and substance use spectrum among individuals classified as homosexual or bisexual

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by their sexual partner histories, although associations with the specific disorders are inconsistent across studies. Some, but not all, studies have observed higher rates of major depression (Cochran & Mays, 2000a, 2000b; Sandfort et al., 2001), suicide attempts (Herrell et al., 1999), and anxiety disorders (Cochran & Mays, 2000b; Sandfort et al., 2001) in homosexually active men when compared with heterosexually active men. Similarly, some, but not all, studies found higher rates of major depression (Gilman et al., 2001; Sandfort et al., 2001), suicide attempts (Gilman et al., 2001), some anxiety disorders (Gilman et al., 2001), and alcohol- and drug dependency disorders (Cochran & Mays, 2000b) in homosexually active women when compared with heterosexually active women.

Because sexual orientation is a broader construct than same-gender sexual activity (Sell, 1997), the use of sexual behavior alone to determine identity has led to some concern about misclassification bias in these studies (Bailey, 1999; Cochran et al., 2000; Cochran & Mays, 2000b). Indeed, Bailey (1999) suggested that this approach indexes not only sexual orientation but also, to some degree, impulsivity among those who are heterosexual but may engage in same-gender sexual behavior at times. The effect of this might be to overestimate rates of mental health morbidity.

One aim of the current investigation was to explicitly examine the association between sexual orientation and psychological morbidity. To that end, we used data from the MacArthur Foundation National Survey of Midlife Development in the United States (MIDUS; Brim et al., 1996), a recently conducted population-based study of over 3,000 American adults ages 25 to 74 years, that in an unusual mix ascertained respondents' sexual orientation, 1-year prevalence of several mental health disorders, and a broad range of additional mental health indicators. This data set offers a unique opportunity to investigate differences in prevalence of stress-sensitive mental disorders and psychological distress reflective of possible subsyndromal disorders (Judd, Paulus, Wells, & Rapaport, 1996) among adults who vary in self-reported sexual orientation.

The second aim was the examination of mental health services use among individuals of different sexual orientation, again using the MIDUS data set. For some time it has been known that many lesbians and gay men face particular obstacles in seeking mental health services (Garnets, Hancock, Cochran, Goodchilds, & Peplau, 1991) including difficulties in accessing providers who are knowledgeable about lesbian and gay health and lifestyle issues (Kaufman et al., 1997; Liddle, 1997; Trippet, 1994). There is also some reason to believe that this population may access mental health related services at higher rates than others do. To date, only two population-based studies have actually examined use rates, with both finding higher use. In one, homosexually active men and women when compared with exclusively heterosexually active individuals were more likely to report receiving mental health services in the year prior to interview (Cochran & Mays, 2000b). In a second, homosexually active women more frequently reported using alcohol-related services in the previous 12 months than did exclusively heterosexually active women (Cochran et al., 2000). Neither study, however, directly measured sexual orientation, leading to some ambiguity about whether sexual orientation per se is a predictor of mental health use patterns.

Method

Source of the Data

In 1995, MIDUS was conducted to examine the social and psychological determinants of physical health and psychological well-being among Americans at midlife (Brim et al., 1996). The study drew eligible respondents between 25 and 74 years of age from the noninstitutionalized English-speaking population with a random-digit-dial telephone-sampling frame of the contiguous United States. One eligible individual was randomly selected from each household and interviewed over the telephone in Phase I. Then, in Phase II, respondents were asked to complete and return a self-administered questionnaire. Oversampling of both men and older respondents ensured adequate representation of harder to reach individuals. In approximately 70% of households estimated to have an eligible respondent, a telephone interview was successfully completed ($N = 3,485$). Of interviewed respondents, approximately 87% ($N = 3,032$) then returned a completed questionnaire, resulting in an overall response rate estimated as 60.8%. Of the final sample, 2,917 answered a single question in the questionnaire asking them if they would describe their sexual orientation as heterosexual ($n = 2,844$), homosexual ($n = 41$), or bisexual ($n = 32$). The last two groups were combined for subsequent analyses to increase power. We also dropped from further consideration 115 respondents who did not answer this question because of our inability to classify them for sexual orientation. Research from the General Social Survey that has addressed a similar issue of missing sexual behavior data in the General Social Survey Questionnaires has found that the rate of nonresponse to questions assessing possible homosexuality has been consistent over the past decade despite increasingly more prevalent reports of same-gender sexual behavior (Butler, 2001). Nonresponse has been associated most strongly with low general cooperativeness with the survey, low cognitive ability, and a belief that the questions are not applicable to the respondent, but not strongly with attitudes toward homosexuality (Smith, 1992).

Measures

Mental disorders. During Phase I, interviewers administered modules from the Composite International Diagnostic Interview Short Form (CIDI-SF; Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998) to render diagnoses based on *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM-III-R*; American Psychiatric Association, 1987) criteria for 1-year prevalence of major depression, generalized anxiety disorder, and panic disorder. The CIDI-SF is a structured diagnostic interview administered by trained interviewers and has been shown elsewhere (Blazer, Kessler, McGonagle, & Swartz, 1994; Wittchen, Kessler, Zhao, & Abelson, 1995; Wittchen, Zhao, Kessler, & Eaton, 1994) to provide reliable and valid diagnostic information when used in the context of population-based interviews such as the MIDUS.

In addition, the MIDUS Questionnaire included items that we coded for presence or absence of alcohol- and drug-dependency disorders using screening methods based on modified *DSM-IV* criteria (4th ed.; American Psychiatric Association, 1994) that were developed by the Substance Abuse and Mental Health Services Administration for the National Household Survey on Drug Abuse (Epstein & Gfroerer, 1995). A diagnosis of 1-year prevalence of alcohol dependency disorder was made if the respondent reported three or more of the following symptoms occurring in the previous 12 months: (a) using alcohol in larger amounts or for longer periods of time than intended, (b) being under the influence of alcohol or recovering from alcohol use while engaged in social obligations, (c) experiencing emotional or physical problems from alcohol use, (d) having an irresistible urge to use alcohol, (e) spending a great deal of time using or getting over use of alcohol, or (f) developing tolerance to alcohol effects. Respondents also indicated if they had used substances in any of 10 categories of illicit drugs or nonprescribed medications in the previous 12 months. If so, they were assessed for symptoms of substance dependency

identical to the six symptoms described above. Those evidencing three or more symptoms received a positive diagnosis for 1-year prevalence of drug dependency disorder. Although the Questionnaire did not assess for presence of withdrawal symptoms, the diagnostic screening method used has been shown to have excellent reliability and validity for identifying individuals with substance use disorders in National Comorbidity Survey (Epstein & Gfroerer, 1995).

Distress indicators. During the interview, respondents were asked to describe their mental or emotional health currently and at age 16 years with one of five descriptors ranging from 1 (*poor*) to 5 (*excellent*). We recoded each of their responses into two categories ("fair" or "poor" vs. "good," "very good," or "excellent"). The MIDUS Questionnaire also asked individuals if, in the past 12 months, they had "experienced or been treated" for several health problems, two of which were related to psychological well-being: "anxiety, depression, or some other emotional disorder" and "alcohol or drug problems." These were used as two additional indicators of recent mental health difficulties. A fifth indicator of nonspecific psychological distress administered in the questionnaire consisted of six items that respondents answered using one of five ordinally scaled responses ranging from 1 (*all of the time*) to 5 (*none of the time*; other descriptors being *most of the time*, *some of the time*, *a little of the time*). Specifically, they were asked how often in the past 30 days had they felt "so sad nothing could cheer you up," "nervous," "restless or fidgety," "hopeless," that "everything was an effort," or "worthless." We reverse scored, standardized, and summed responses to calculate an index of current psychological distress (Kessler, Mickelson, et al., 1999). Respondents scoring at the 84th percentile or above (equivalent to 2 standard deviations above the mean if the distribution were normal) were labeled as *experiencing high current distress*.

Treatment use. The MIDUS included several measures of treatment use for mental health complaints. In the Questionnaire, respondents were asked how many times in the prior 12 months they had seen a psychiatrist, psychologist, professional counselor, marriage therapist, or social worker for emotional or mental health reasons or for their own personal problems, including those related to drug or alcohol use. Individuals who reported one or more visits were coded as using services of a mental health provider. In addition, respondents were asked how many times they had seen a general practitioner or medical doctor for similar reasons. Individuals reporting one or more of these visits were considered to have seen a general physician for a mental health or emotional complaint. Also, the Questionnaire listed 11 types of self-help groups for problems ranging from life transitions to problems with alcohol. Respondents were asked the number of times they had attended such groups in the prior 12 months. We coded individuals who indicated attendance at least once in any of the 11 categories as having attended a self-help group. Finally, participants were asked if they had taken a prescription medication in the past 30 days for "nerves, anxiety, or depression." We coded a positive response to this item as use of psychiatric medication.

Demographics. Respondents provided information concerning several demographic characteristics that may confound associations between sexual orientation and mental health outcomes (Butler, 2001; Cochran et al., 2000; Cochran & Mays, 2000b; Gilman et al., 2001). These included age, racial background, educational attainment, and current marital or cohabitation status. Cohabitation was defined in the interview as "living with someone in a steady, marriage-like relationship." For analysis purposes, we combined married and cohabiting respondents. In addition, participants were asked if they had received treatment for HIV or AIDS in the prior 12 months. Current health insurance status was assessed by several questions asking respondents if they had private or government-sponsored health coverage from various sources. Those who indicated health insurance from any source were coded as having health insurance.

Statistical Analysis

The publicly available MIDUS data set includes trimmed weights that adjust for selection probability, nonresponse, and poststratification. Addi-

tional information about the design and data collection methods for the MIDUS, as well as the weighting methodology, is given in more detail on the MIDUS web page (<http://midmac.med.harvard.edu/research.html>). We used the weighted data set to examine prevalence of study outcomes, combining those individuals who reported homosexual or bisexual sexual orientations. This commonly used approach (Cochran et al., 2000; Cochran & Mays, 2000b; Gilman et al., 2001; Saewyc et al., 1998; Safren & Heimberg, 1999) was necessitated by the low rate of sexual minority status in the sample. Logistic regression methods were used to estimate the associations of sexual orientation with 1-year prevalence of mental health disorders and indicators of psychological distress, adjusting for possible demographic confounding due to age, race, educational attainment, relationship status (Kessler, McGonagle, Swartz, Blazer, & Nelson, 1993; Kessler et al., 1994; Marks & Lambert, 1998; Regier et al., 1993), and where warranted, reports of treatment for HIV or AIDS. For treatment use outcomes, we also considered current health insurance status as a possible confounder and included it in the equations. We estimated all models separately for men and women, given the well-documented robust effects of gender on the outcome variables of interest (Kandel, Chen, Warner, Kessler, & Grant, 1997; Kessler et al., 1994; Wilsnack & Wilsnack, 1997). The Taylor series linearization method was used to estimate sampling variance (Shah, Barnwell, & Bieler, 1996). We report exponentiated logistic regression coefficients in the form of odds ratios (ORs) with 95% confidence intervals (CI). Both point estimates and their standard errors are reported in the text. All sample sizes and estimates are weighted.

Results

Characteristics of the Sample

Overall, 2.5% ($SE = 0.3\%$) of the respondents reported being homosexual or bisexual (see Table 1). This prevalence did not appear to vary substantially between men (2.9%, $SE = 0.5\%$) and women (2.2%, $SE = 0.5\%$; adjusted [adj] OR = 1.53, 95% CI: 0.90–2.61). Among men, those who were gay or bisexual differed from heterosexual men in their patterns of relationship status but not in other demographic characteristics. Lesbian–bisexual women also differed in their patterns of relationship status, but in addition, they were younger than the heterosexual women. We did not observe any appreciable differences in levels of insurance coverage among either men (adj OR = 1.78, 95% CI: 0.73–4.37) or women (adj OR = 1.30, 95% CI: 0.50–3.38) of differing sexual orientation, after adjusting for demographic differences.

Self-reported HIV infection or AIDS was rare. Approximately 7% (weighted [wt] $n = 3$) of homosexual–bisexual men reported treatment in the prior 12 months for HIV or AIDS in contrast to 0.4% (wt $n = 5$) of heterosexual men. No lesbian–bisexual woman reported HIV or AIDS treatment in the 12 months prior to interview.

Twelve-Month Prevalences of Mental Health Disorders

Gay and bisexual men were more likely than heterosexual men to be diagnosed with at least one of the five mental health disorders assessed in the MIDUS, after we adjusted for possible demographic confounding (see Table 2). In particular, gay and bisexual men were 3.0 times more likely to meet criteria for major depression and 4.7 times more likely to meet criteria for a panic disorder than were heterosexual men. Further, nearly 20% of gay–bisexual men overall were comorbid for two or more disorders (49%, $SE = 13.4\%$, of those meeting criteria for any disorder), a prev-

Table 1
 Characteristics of Individuals in the National Survey of Midlife Development by Gender and Sexual Orientation:
 Weighted Percentages Shown

Characteristic	Men		<i>p</i>	Women		<i>p</i>
	Heterosexual (<i>n</i> = 1,239)	Gay-bisexual (<i>n</i> = 37)		Heterosexual (<i>n</i> = 1,604)	Gay-bisexual (<i>n</i> = 37)	
Age, in years			.42			.02
25-39	39.6	54.9		41.3	69.5	
40-74	60.4	45.1		58.7	30.5	
Race			.11			.56
White	84.3	93.0		83.8	82.5	
Not White	15.7	7.0		16.2	17.5	
Educational attainment, in years			.67			.96
0-12	48.0	42.2		53.0	51.0	
13-15	24.1	25.7		26.9	31.7	
16 or more	27.8	32.1		20.1	17.3	
Marital/relationship status			< .01			< .01
Married	75.2	31.5		65.3	17.2	
Cohabiting	5.2	28.5		5.8	30.6	
Other	19.6	39.9		28.9	52.2	

Note. Actual sample size is 1,382 heterosexual men, 1,462 heterosexual women, 41 gay or bisexual men, and 32 lesbian or bisexual women. Probability values were estimated from logistic modeling evaluating probability of sexual minority orientation from all demographic characteristics (age, ethnicity/race, education, and relationship status) simultaneously.

alence exceeding that seen among heterosexual men (approximately 30%, *SE* = 3.3% of men meeting criteria for any disorder). Differences observed between gay-bisexual and heterosexual men were unchanged when effects associated with treatment for HIV or AIDS in the prior year were considered, although the low prevalence of HIV infection greatly limited our power to detect such a difference.

Differences between lesbian-bisexual and heterosexual women in prevalence of individual mental health disorders were less

common than differences among men. Although we observed higher prevalences among lesbian-bisexual women of meeting diagnostic criteria across all of the five disorders, only generalized anxiety disorder appeared more prevalent among lesbian-bisexual women than among heterosexual women. Similar to what was observed in comparisons among men, however, lesbian-bisexual women were more likely to be diagnosed with two or more of the five disorders than heterosexual women. Approximately 54% (*SE* = 15.4%) of lesbian-bisexual women meeting criteria for any

Table 2
 Prevalences of Mental Health Disorders in the National Survey of Midlife Development by Gender and Sexual Orientation:
 Twelve-Month Prevalences and Results of Multivariate Logistic Regression Analyses

Disorder	Men					Women						
	Heterosexual (<i>n</i> = 1,239)		Gay-bisexual (<i>n</i> = 37)		Adj OR	(95% CI)	Heterosexual (<i>n</i> = 1,604)		Lesbian-bisexual (<i>n</i> = 37)		Adj OR	(95% CI)
%	<i>SE</i>	%	<i>SE</i>	%			<i>SE</i>	%	<i>SE</i>			
Major depression	10.2	0.9	31.0	8.0	3.57*	(1.71-7.43)	16.8	1.1	33.5	10.0	1.88	(0.71-4.98)
Generalized anxiety disorder	1.8	0.4	2.9	2.9	1.35	(0.19-9.34)	3.8	0.6	14.7	7.0	3.88*	(1.18-12.77)
Panic disorder	3.8	0.6	17.9	6.6	5.09*	(2.00-12.99)	8.6	0.8	17.1	7.1	2.05	(0.72-5.82)
Alcohol dependency	5.6	0.7	8.9	4.4	1.30	(0.40-4.23)	3.4	0.5	11.8	7.1	2.51	(0.60-10.48)
Drug dependency	2.7	0.4	9.2	5.4	2.46	(0.55-11.07)	1.5	0.4	6.5	6.2	3.45	(0.39-30.64)
Positive for at least 1 disorder	16.7	1.1	39.8	8.4	2.71*	(1.34-5.48)	24.6	1.3	43.7	10.3	1.86	(0.75-4.57)
Comorbid for 2 or more disorders	5.0	0.6	19.6	6.8	3.85*	(1.50-9.87)	7.7	0.8	23.5	9.0	2.88*	(1.02-8.15)

Note. Weighted percentages and standard errors are shown. Multivariate logistic regression analyses were conducted separately by gender. Odds ratios (OR) and their 95% confidence intervals (CI) were adjusted for age, level of education, relationship status (married/cohabiting vs. not), and race. Adj = adjusted.

* *p* < .05.

of the five disorders also met criteria for at least a second disorder. In contrast, 30% ($SE = 2.8\%$) of heterosexual women meeting criteria for any disorder were comorbid.

Indicators of Past and Recent Psychological Distress

Gay-bisexual men reported higher levels of current and past psychological concerns than heterosexual men in all but reports of a recent drug or alcohol problem (see Table 3). In contrast, whereas lesbian-bisexual women were somewhat more likely to rate their own mental health at age 16 as worse than heterosexual women did at that age, there were no appreciable differences between the two groups of women in current indicators of psychological distress.

Treatment Use in Past Year

Over half of the gay-bisexual men reported using at least one of the four types of mental health services measured in the MIDUS survey (see Table 4). After adjusting for demographic characteristics and current health insurance status, we found that gay-bisexual men were more likely than heterosexual men to report using at least one type of mental health care, including seeing a mental health provider at least once in the 12 months prior to interview, seeing a general physician for a mental or emotional complaint, or attending a self-help group for any of a number of reasons. They were also more likely to report taking a prescribed medication for an emotional or mental complaint in the month prior to interview. These results did not change when the possible effects of receiving HIV or AIDS treatment were considered, although, again, we had low power to detect this effect if it, in fact, existed.

Both men who met diagnostic criteria for any of the five disorders assessed or who reported high levels of current psychological distress in the month prior to interview can be thought of as

representing a subsample who would be most in need of psychological services. Among these men, gay-bisexual men (85.3%, $SE = 8.4\%$) were more likely than heterosexual men (45.2%, $SE = 3.1\%$) to report that they had received at least one of the four types of mental health services measured in the MIDUS study, after we had adjusted for demographic characteristics and current health insurance status (adj OR = 8.15, 95% CI: 1.87–35.54). Restricting the subsample to only those men who evidenced either any disorder or high levels of psychological distress did not alter these results appreciably, nor did additional adjustment for the possible effects of HIV or AIDS treatment in the past year.

Lesbian-bisexual women were also more likely than heterosexual women to report mental health-related treatment use in the year prior to interview after adjustments were made for demographic characteristics and current health insurance status. Approximately two thirds of lesbian-bisexual women reported accessing at least one of the four types of mental health care assessed in the MIDUS, with nearly a third reporting seeing a mental health provider, a rate greater than that reported by heterosexual women. Lesbian-bisexual women were also more likely than heterosexual women to report attending a self-help group in the prior year and showed a trend toward more frequent reporting of seeing a general physician for a mental health or emotional complaint. Among those women who either met diagnostic criteria for any disorder or who reported a high level of current distress, lesbian-bisexual women (94%, $SE = 5.9\%$) were more likely than heterosexual women (54%, $SE = 2.6\%$) to report receiving at least one of the four types of mental health services, after we had adjusted for demographic characteristics and health insurance status (adj OR = 14.54, 95% CI: 1.67–126.44). These results showed negligible change when the analysis was restricted to only those women who evidenced any disorder, but they did attenuate when the analysis was repeated among only those women with high levels of psychological distress (adj OR = 4.29, 95% CI: 0.36–51.55).

Table 3
Indicators of Past and Recent Psychological Distress in the National Survey of Midlife Development by Gender and Sexual Orientation: Weighted Percentages and Results of Multivariate Logistic Regression Analyses

Indicator	Men						Women					
	Heterosexual (<i>n</i> = 1,239)		Gay- bisexual (<i>n</i> = 37)		Adj OR	(95% CI)	Heterosexual (<i>n</i> = 1,604)		Lesbian- bisexual (<i>n</i> = 37)		Adj OR	(95% CI)
	%	SE	%	SE			%	SE	%	SE		
Rates own mental health as "fair" or "poor":												
At age 16	6.1	0.7	17.8	6.4	3.10*	(1.30–7.38)	8.4	0.8	22.8	8.4	2.62	(0.97–7.09)
At present	7.7	0.9	20.4	6.9	3.47*	(1.51–7.98)	11.1	1.0	14.3	6.5	1.18	(0.40–3.48)
High current distress ^a	12.5	1.0	33.1	7.9	3.15*	(1.50–6.63)	18.4	1.2	18.4	7.4	0.85	(0.32–2.26)
Reports experiencing or being treated in past year for												
Anxiety, depression, or other emotional disorder	13.8	1.0	38.4	8.2	3.63*	(1.78–7.39)	24.5	1.2	24.6	8.2	1.01	(0.41–2.47)
Alcohol or drug problem	4.5	0.7	12.4	5.5	2.52	(0.84–7.54)	1.6	0.4	4.7	3.8	1.88	(0.34–9.98)

Note. Weighted percentages and standard errors are shown. Multivariate logistic regression analyses conducted separately by gender. Odds ratios (OR) and their 95% confidence intervals (CI) were adjusted for age, level of education, relationship status (married/cohabiting vs. not), and race. Adj = adjusted.

^a Distress score at 84th percentile or above.

* $p < .05$.

Table 4
Self-Reported Mental Health-Related Treatment Use in the National Survey of Midlife Development by Gender and Sexual Orientation: Twelve-Month Prevalences and Results of Multivariate Logistic Regression Analyses

Treatment use	Men						Women					
	Heterosexual (n = 1,239)		Gay- bisexual (n = 37)		Adj OR	(95% CI)	Heterosexual (n = 1,604)		Lesbian- bisexual (n = 37)		Adj OR	(95% CI)
	%	SE	%	SE			%	SE	%	SE		
Saw mental health provider	7.5	0.8	19.4	6.2	3.38*	(1.05-5.41)	10.7	0.9	33.0	9.4	3.37*	(1.41-8.08)
Saw general physician for mental/emotional complaint	15.4	1.1	45.0	8.6	4.53*	(2.24-9.15)	20.1	1.2	36.9	10.4	2.40*	(1.00-5.78)
Attended self-help group	3.9	0.6	15.3	6.1	5.03*	(2.7-12.24)	8.3	0.8	27.8	9.2	3.27*	(1.24-8.63)
Took psychiatric medication*	5.6	0.7	24.8	7.1	5.70*	(2.55-12.76)	13.5	1.0	19.2	8.0	1.78	(0.61-5.18)
Use of 1 or more treatment method	24.9	1.3	56.7	8.5	3.78*	(1.90-7.51)	35.8	1.4	66.0	9.6	3.37*	(1.39-8.19)

Note. Weighted percentages and standard errors are shown. Multivariate logistic regression analyses conducted separately by gender. Odds ratios (OR) and their 95% confidence intervals (CI) adjusted for age, level of education, relationship status (married/cohabiting vs. not), race, and current health insurance status. Adj = adjusted.

* Took prescription medication for psychiatric reason in past 30 days.

* $p < .05$.

Discussion

Over the past few years, evidence has emerged from several population-based studies that patterns of mental health morbidity and services use among lesbian, gay, and bisexual adults may differ in important ways from those of heterosexual women and men (Cochran et al., 2000; Cochran & Mays, 2000a, 2000b; Gilman et al., 2001; Sandfort et al., 2001). All of this work, however, has suffered from the same methodological limitation: an indirect measurement of sexual orientation that has called into question the validity of study findings (Bailey, 1999). In the present work, sexual orientation was measured explicitly, and our findings demonstrate that minority status sexual orientation is associated with somewhat higher rates of mental health morbidity, including comorbidity, and use of mental health services. Although approximately 58% ($SE = 6.6\%$) of lesbian, gay, and bisexual individuals studied did not evidence any of the five disorders assessed in the MIDUS, in the group as a whole, we did observe higher prevalences on all of the mood, anxiety, and substance use disorders measured when they were compared with heterosexuals of the same gender. Among men, these differences were most extreme for major depression and panic disorder, whereas among women the difference was more extreme for generalized anxiety disorder. Among men also, we observed higher rates of current psychological distress in those who were gay or bisexual compared with heterosexual men. Perhaps reflecting the well-known stress of adolescence for many gay youths (Savin-Williams, 1994), we also found that minority sexual orientation was a risk indicator for retrospective reports of poorer mental health in adolescence among men and perhaps among women.

In many ways, our findings are consistent with several recent large scale studies that used similar survey methodology in comparing homosexually versus exclusively heterosexually active adults in the United States (Cochran et al., 2000; Cochran & Mays,

2000a, 2000b; Gilman et al., 2001). In all three surveys, there was a general elevation in rates of mental health morbidity among individuals classified as probably lesbian, gay, or bisexual. Further, in two out of the three (Cochran & Mays, 2000a, 2000b), homosexually active men were more likely to meet criteria for major depression diagnoses than heterosexually active men, as we observed here. Additionally, one of two studies found higher rates of panic attack (Cochran & Mays, 2000b), and neither of two studies (Cochran & Mays, 2000b; Gilman et al., 2001) found higher rates of alcohol or drug dependency among homosexually active men. However, the picture is less clear with women. One earlier study, using data from the 1996 National Household Survey on Drug Abuse (Cochran & Mays, 2000b), found higher 1-year prevalence rates of drug and alcohol dependency but not of depression or anxiety disorders among homosexually active women when compared with exclusively heterosexually active women. A second study (Gilman et al., 2001), using data from the National Comorbidity Survey, found higher rates than expected among homosexually active women for 1-year prevalence of depression, posttraumatic stress disorder, and simple phobia but not for drug or alcohol dependency. In contrast, we found evidence for elevated risk for generalized anxiety disorder. At present, it is unclear whether the somewhat elevated general risk is definitively associated with specific disorders.

We also found evidence suggesting that individuals with minority sexual orientation experience greater prevalence of comorbid disorders. In the current study, approximately 20% of gay-bisexual men and 24% of lesbian-bisexual women met criteria for two or more disorders in the year prior to interview, a comorbidity rate three to nearly four times greater than that observed among heterosexuals of the same gender. In general, comorbidity is a predictor of illness severity and higher rates of treatment use (Kessler, Zhao, et al., 1999). Consistent with this, we also observed that minority sexual orientation status was positively asso-

ciated with higher use rates of mental health services. From the MIDUS survey, we estimated that approximately 7% of midlife adults receiving services from a mental health provider each year are lesbian, gay, or bisexual, although this population represents perhaps less than 3% of Americans. This use estimate is consistent with earlier reports (Cochran et al., 2000; Cochran & Mays, 2000a) and underscores the relative frequency with which mental health providers either knowingly or unknowingly render care to this population.

Research on treatment needs in this population has been sparse (Bieschke, McClanahan, Tozer, Grzegorek, & Park, 2000), but there are indications that providers may view treatment needs and appropriate interventions for lesbian and gay male patients as little different from others seeking services (Gambrill, Stein, & Brown, 1984). This contrasts with the views of lesbians and gay men themselves who articulate that there are differences in their therapeutic needs (Bieschke et al., 2000; Garnets et al., 1991). One issue that has been noted is that providing appropriate mental health services for lesbians and gay men is complicated by the negative stereotypes of homosexuality held by individuals in general, of whom some are service providers (Garnets et al., 1991). A second is that lesbians and gay men may enter therapy and use self-help groups for reasons other than mental health morbidity, including seeking assistance in issues generated by their minority status of sexual orientation (Hughes, Haas, & Avery, 1997; Trippet, 1994) and coping efforts related to the HIV epidemic. Our results suggest, too, that assessment and intervention strategies may profit from taking into account the greater probability that mental health disorders in this population will be comorbid. Although the need to consider lifestyle differences in delivering appropriate interventions has been widely noted (Perez, DeBord, & Bieschke, 2000), our findings also hint that unrecognized differences in patterns of comorbidity may lead to differential rates of treatment effectiveness.

Although the current study represents an improvement over previous methodologies, there are three study limitations to be kept in mind. First, like other recent population-based studies (Cochran et al., 2000; Cochran & Mays, 2000a, 2000b; Garofalo et al., 1999; Gilman et al., 2001; Remafedi et al., 1998; Sandfort et al., 2001), our power to detect associations between sexual orientation and mental health outcomes was limited because of the low numbers of lesbian, gay, and bisexual individuals in the MIDUS survey. It is possible that the differences we observed that failed to achieve statistical significance would, in fact, do so with a larger sample. Indeed, the MIDUS included only 73 actual persons (out of more than 3,000 people interviewed) who reported a homosexual or bisexual sexual orientation. Across several recent studies, comparisons have relied on the responses of very few individuals who can be classified as homosexual or bisexual in the context of possible threats of misclassification of sexual orientation status (Black, Gates, Sanders, & Taylor, 2000; Cochran et al., 2000). The effect of this is unstable point estimates of the prevalence of disorders in those of minority sexual orientation. Only larger samples in future surveys, perhaps from oversampling for sexual orientation minorities, can remedy this problem and definitively isolate what true sexual orientation-associated differences exist in mental health morbidity. Second, both nonresponse (failure to participate in the survey) and response (willingness to disclose a sexual minority status during the interview) bias may be confounded in unknown

ways with disclosure of psychological symptoms leading to either over- or underestimation of mental health disorders (Cochran & Mays, 2000a). The measurement of sexual orientation in studies where individuals are recruited by general methods is a relatively new occurrence in surveys, and as yet, there is little known about the effects of bias associated with its determination (Black et al., 2000; Butler, 2001). Third, the MIDUS screened for a limited number of psychiatric disorders and did not measure some where there might also be as-yet undetected but important differences associated with sexual orientation. In particular, given the research evidence suggesting common experiences with antihomosexual harassment and threat of violence in this population (Herek et al., 1999; Mays & Cochran, 2001), we anticipate that the prevalence of posttraumatic stress disorder might be elevated. The restricted number of disorders assessed in the survey most likely biased downward our estimates of both screening positive for any disorder or comorbidity.

Nevertheless, our findings underscore the growing body of work suggesting that minority sexual orientation status is a risk indicator for differences in both prevalence and patterns of mental health disorders and services use. The cause for this is not known; however, there is reasoned sense that it might be related to the effects of social stigma surrounding homosexuality or the subtle ways in which the lives of lesbians and gay men differ from those of heterosexual women and men (Cochran, 2001). The mechanisms by which this occurs may include experiences with discrimination (Kessler, Mickelson, et al., 1999; Mays & Cochran, 2001; Meyer, 1995) or perhaps other psychosocial factors, such as deficits in social support (Lackner et al., 1993) or HIV-related grief (Goodkin et al., 1999). Only future research examining these issues can clarify the actual causal factors that may account for the differences observed here and elsewhere.

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