Lifetime Prevalence of Suicide Symptoms and Affective Disorders Among Men Reporting Same-Sex Sexual Partners: Results From NHANES III

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A B S T R A C T

Objectives. This study examined lifetime prevalence of suicide symptoms and affective disorders among men reporting a history of same-sex sexual partners.

Methods. In the third National Health and Nutrition Examination Survey, men aged 17 to 39 years were assessed for lifetime history of affective disorders and sexual behavior patterns. The study classified this subset of men into 3 groups: those reporting same-sex sexual partners, those reporting only female sexual partners, and those reporting no sexual partners. Groups were compared for histories of suicide symptoms and affective disorders.

Results. A total of 2.2% (95% confidence interval [CI] = 1.3%, 3.1%) of men reported same-sex sexual partners. These men evidenced greater lifetime prevalence rates of suicide symptoms than men reporting only female partners. However, homosexually/bisexually experienced men were no more likely than exclusively heterosexual men to meet criteria for lifetime diagnosis of other affective disorders.

Conclusions. These data provide further evidence of an increased risk for suicide symptoms among homosexually experienced men. Results also hint at a small, increased risk of recurrent depression among gay men, with symptom onset occurring, on average, during early adolescence. (*Am J Public Health.* 2000;90:573–578)

Recent surveys[1–7] suggest that lesbian and gay youth and young adults are at greater risk for suicide ideation, suicide attempts, and completed suicides than their heterosexual counterparts. Although much of this work has relied on convenience-based samples of volunteers, a recent case–control study[8] of junior and senior high school students in Minnesota revealed elevated rates of current suicidal intention and previous suicide attempts among homosexually or bisexually identified male students relative to their heterosexual male peers. A population-based survey[9] of high school students in Massachusetts also showed elevated risks for suicide ideation and previous attempts among those reporting a history of same-sex sexual behavior. Furthermore, a longitudinal cohort study[10] of New Zealand youth based on data collected during late adolescence and early adulthood in annual health surveys revealed an increased risk for a positive history of suicide attempts among lesbian and gay youth. All of these studies suggest far greater risks for suicide symptoms among homosexual/bisexual youth than among their heterosexual counterparts.

However, early identification of oneself as homosexual may be correlated with higher rates of psychological distress.[11] Given the restricted age range in these samples, it is possible that observed differences were biased in the direction of finding greater prevalence rates of suicide ideation and attempts than might exist in the adult male homosexual/bisexual population. Indeed, Herrell and colleagues,[12] who examined lifetime histories of suicide attempts in adult male twins concordant or disconcordant for homosexual experience, observed, as in the previous surveys, significantly higher rates of suicide attempts among homosexually experienced men than among exclusively heterosexual twins; however, these prevalence rates were much lower than those reported from the gay youth surveys.

Population-based psychiatric surveys that identify individuals who may differ in regard to sexual orientation are extremely rare.[13,14] This methodology, however, provides an opportunity to assess prevalence rates of psychopathology and social distress in the absence of help-seeking behavior or participation in gay-related community activities. We present findings from the third National Health and Nutrition Examination Survey (NHANES III),[15] which indirectly indexed homosexuality through ascertaining the genders of men's lifetime sexual partners. While the original purpose of these sexual behavior questions in NHANES III was to measure a behavioral risk factor for HIV infection, we used reports of sexual partner gender as a proxy for sexual orientation, classifying men as behaviorally heterosexual or homosexual/bisexual.

Sexual orientation is a complex concept with multiple measurable and intercorrelated dimensions, including sexual attraction; sexual behavior; sexual fantasies; emotional, social, and lifestyle preferences; and self-identification.[16] Although self-rated sexual orientation and self-reported sexual behavior do not perfectly covary, previous work has suggested that all of these dimensions may index a single underlying construct.[17] For example, in a national household survey of sexual behavior,[18] only 45% of men who reported same-sex sexual partners after the age of 18 years also self-identified as gay, homosexual, or bisexual, but nearly all (87%)

homosexually/bisexually self-identified men reported same-sex sexual behavior. In addition, 97% of men who did not identify as gay or bisexual also reported no same-sex sexual partner as an adult. Thus, the behavioral proxy errs in the direction of overclassifying men as homosexual/bisexual on the basis of their sexual behavior alone; however, it does appear to capture the majority of men who would consider themselves homosexual or bisexual.

Our interest in the present study was in examining evidence of greater prevalence rates of suicide-related behaviors associated with homosexuality and bisexuality in a population-based sample. In addition, we evaluated possible associations between homosexual/bisexual behavior patterns and lifetime prevalence of 3 affective disorders: major depression, mania, and dysthymia (as measured in NHANES III). Although homosexuality per se has not been shown in convenience-based samples to be reliably associated with higher rates of diagnosable psychiatric disorders,[19] some studies have revealed greater prevalence rates of depressive distress,[20,21] drug and alcohol use,[22,23] and psychiatric help seeking[24] among gay men and lesbians. NHANES III offered a rare opportunity to explore evidence, pro or con, of differences in prevalence of affective disorders between men who may differ in their sexual orientations, at least as measured by their reports of sex partners' gender.

Methods

Sample and Procedures

The NHANES is a periodic population-based health survey conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention. NHANES III, completed in the years 1988 to 1994, was the seventh of these periodic surveys and involved a complex, multistage sample of the civilian noninstitutionalized US population aged 2 months and older, yielding data for public use.[25] In a first assessment of the sample, information on nearly 40000 persons was obtained in their homes. Approximately 31000 of these individuals then underwent extensive physical examinations and further health assessments in special mobile examination trailers. During this second assessment, only participants aged 15 to 39 years (n=8786) were interviewed for presence of lifetime affective disorders and related symptoms, including suicidal behaviors. In addition, only men aged 17 to 59 years (n=5731) were asked the gender of their lifetime sexual partners. This resulted in a final sample of 3648 men between the ages of 17 and 39 years who

were assessed for both prevalence of affective disorders and related symptoms and genders of their lifetime sexual partners.

Measures

Psychiatric Diagnostic Assessment. In NHANES III, the depression and mania modules from the Diagnostic Interview Schedule,[26] originally developed for the National Institute of Mental Health's Epidemiologic Catchment Area research study, were administered.[27] Lifetime prevalence rates of symptoms associated with 7 affective disorders were measured: major depression; major depression, single episode; major depression, recurrent; dysthymia; mania; bipolar I disorder (mania and major depression); and atypical bipolar disorder (including bipolar II). The structured psychiatric interview renders psychiatric diagnoses for respondents' most extreme episodes of depression and/or elation based on criteria specified in the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (*DSM-III-R*).[28] We also report the age at which respondents first experienced depressive symptoms and their number of depressive episodes. Examination of possible episode comorbidity with alcohol or drug disorders was not possible owing to the limitations of the NHANES III data set.

Suicide ideation and attempts. As part of the Diagnostic Interview Schedule, respondents were asked 4 questions specifically related to suicide. The first asked whether there was ever a period of 2 weeks or more in which the participant "thought a lot about death" (thoughts of death). The second question asked whether there was ever a period of 2 weeks or more during which the participant felt "like (he) wanted to die" (desire to die). The third question specifically asked whether the participant "ever felt so low (he) thought of committing suicide" (suicide ideation). The final question asked whether the respondent had ever attempted suicide (suicide attempt). Positive responses to the 4 questions were summed to allow construction of an index of the number of suicide symptoms reported. Although thinking about death may appear to be only tangentially related to suicide ideation, approximately 61% of respondents who reported this symptom also indicated a history of a suicide attempt. In contrast, only 2% of those who did not report thinking about death indicated a previous attempt.

Sexual behavior history. Men were initially asked the age at which they first had sexual intercourse. Those who indicated having engaged in sexual intercourse were then questioned about total number of sexual

partners during their lifetime. Subsequent questions obtained information concerning numbers of female and, separately, male partners. Finally, men were asked the number of partners of unspecified gender with whom they had had sexual intercourse in the previous year. From this information, we classified individuals into 3 categories: no sexual partners reported (n=187), female sex partners only (behavioral heterosexuality) (n=3208), and any male sex partners reported (behavioral homosexuality/bisexuality) (n=108). The last category included 14 men who reported only male sex partners during their lifetime and 94 men who indicated both male and female partners. Information on gender of sex partners for 145 men (4% of the original sample) was missing, and these individuals were excluded from the final sample.

Data Analysis

Data were analyzed with SUDAAN,[29] a set of statistical software programs designed specifically for complex weighted sample designs such as that used in NHANES III. We report lifetime prevalence of suicide symptoms and major affective disorders among those with differing sexual behavior histories. Several factors, such as age, race/ethnicity, family income, and, to some extent, education, may be possible confounders through their known associations with psychiatric disorders[30] and demographic differences among men of varying sexual histories in NHANES III. Given the rarity of men reporting same-sex sexual partners, we were limited in the number of demographic confounders that could be effectively considered. We chose to statistically control for 3 such confounders: age, race/ethnicity, and family income. Years of education and family income among men in NHANES III are strongly associated ($\chi^2_3 = 63.57, P<.001$), and education is generally a less robust correlate of psychiatric disorders than income.[30]

We report results of univariate, logistic, and multiple regression analyses, including logistic odds ratios and confidence intervals (CIs), as appropriate, both adjusted and unadjusted for the effects of possible confounders. All confidence intervals were estimated with 95% certainty. As a result of the small sample size for men reporting same-sex partners, there were wide confidence intervals surrounding the estimate, reflecting the greater uncertainty associated with the population parameter.[31] This reduced our power to detect statistically significant effects. All significance tests were based on the criterion of $P<.05$.

Results

Characteristics of Men Reporting Same-Sex Partners

Approximately 2.2% (95% CI=1.3%, 3.1%) of men in the weighted NHANES III sample reported any male sex partners in their lifetime (Table 1). Patterns of sexual histories varied significantly by age (χ^2_8=77.74, $P<.001$); understandably, men who were not yet sexually experienced were clustered in the youngest age categories. Reflecting this age difference, levels of educational achievement also varied significantly across the 3 groups (χ^2_6=43.92, $P<.001$). Furthermore, men's reports of sex partner genders differed across racial/ethnic backgrounds (χ^2_6=56.22, $P<.001$) and self-reported family income levels (χ^2_2=6.67, $P<.05$).

With the exception of partner gender, men's sexual histories, as indexed in NHANES III, did not differ appreciably. Among all sexually experienced men, the average age at first sexual intercourse was 16.6 years (95% CI=16.3, 16.8). There was a trend for men who reported any same-sex partners to be younger at first sexual intercourse (mean=15.7, SE=0.5) than men who did not (mean=16.6, SE=0.1) ($P=.05$). Overall, sexually experienced men reported a median of 5.9 lifetime sexual partners, regardless of partners' gender (95% CI=5.5, 7.4).

Although the median number of partners reported by homosexually experienced men (median=9.9) was two thirds greater than that reported by exclusively heterosexually experienced men (median=5.8), there was great variation in numbers of partners reported by the former group. Consequently, there were no statistically significant differences in lifetime numbers of partners between the 2 groups (t_{49}=1.48, $P>.10$); statistical control for possible demographic confounding did not alter these results. (All t test results were obtained via 2-tailed tests for unpaired samples.)

Among men who had had sex with women, including those reporting same-sex partners, the median number of lifetime female partners reported was 5.8 (95% CI=5.4, 7.0); there was no statistically significant difference in number of female sex partners between bisexually experienced men (median=4.0) and exclusively heterosexually experienced men (median=5.8; t_{49}=1.63, $P>.10$). Again, statistical adjustment for possible demographic confounding did not change these results. Finally, sexually experienced men reported a median of 0.60 (95% CI=0.57, 0.63) sex partners of unspecified gender in the previous year. Again, numbers of partners in the previous year did not differ significantly between the 2 groups (median=0.6 vs median=0.6; t_{49}=0.69, $P>.10$), even with adjustment for possible demographic confounding.

Lifetime Prevalence of Suicide Symptoms

Approximately half of homosexually experienced men reported a positive lifetime history of at least 1 suicide-related symptom (Table 2). Overall, prevalence rates of all 4 suicide symptoms were significantly greater among these men than among men who reported exclusively opposite-sex sexual partners (Table 3). These differences remained for 3 of the 4 symptoms assessed by the Diagnostic Interview Schedule (desire to die, suicide ideation, and suicide attempt) after statistical adjustment for possible demographic confounding. Indeed, nearly a fifth (19.3%; 95% CI=7.8%, 30.8%) of men with same-sex sexual histories reported at least 1 previous suicide attempt in their lives. On average, men reporting previous male sex partners evidenced significantly greater numbers of lifetime suicide symptoms (mean=1.2, SE=0.2) than men who reported only female sex partners (mean=0.5, SE=0.3; t=3.42, $P<.01$). Statistical adjustment for demographic confounding did not change these results.

In contrast, while sexually inexperienced men also differed significantly from heterosexually experienced men in two instances, differences were in the opposite direction. Sexually inexperienced men evidenced lower lifetime prevalence rates of wishing to die and suicide attempts than heterosexually experienced men. The lifetime prevalence of suicide attempts among sexually inexperienced men was 0.5% (95% CI=0.0%, 1.0%). The prevalence rate for exclusively heterosexually experienced men was estimated as 3.6% (95% CI=2.7%, 4.5%).

Among men indicating a history of male sex partners, age was a significant correlate of reporting a positive history of a previous suicide attempt. Despite the fact that approximately 61% of homosexually experienced men were younger than 30 years at the time of the interview, this younger group (aged 17 to 29 years) represented 98% of those who reported a previous suicide attempt (χ^2_1=9.21, $P<.01$). In contrast, among both sexually inexperienced men and men who reported exclusively female sex partners, prevalence rates of previous suicide attempts were unrelated to age at interview. All sexually inexperienced men who reported a previous suicide attempt were younger than 30 years; however, this reflected the low numbers of these men in the older age group (χ^2_1=1.81, $P>.05$). Similarly, among those with exclusively heterosexual experience, prevalence of suicide attempts did not vary significantly between younger and older men (χ^2_1=0.21, $P>.10$).

TABLE 1—Demographic Characteristics, by Self-Reports of Lifetime Sex Partners, Among Men Aged 17 to 39 Years: NHANES III, 1988–1994

Characteristic	Any Male Partners (Weighted n = 78), %	Female Partners Only (Weighted n = 3214), %	No Sexual Intercourse (Weighted n = 211), %
Age, y*			
17–19	9.1	8.8	58.8
20–24	16.4	20.2	26.4
25–29	35.2	22.5	10.5
30–34	18.5	25.7	3.3
35–39	20.9	23.0	0.9
Education, y*			
<9	5.9	6.2	4.0
9–12	49.6	51.8	70.3
13–15	20.9	23.1	22.4
≥16	23.6	18.9	3.3
Family income, $*			
<20 000	55.5	31.0	28.3
≥20 000	44.5	69.0	71.7
Ethnic/racial background*			
White, not Hispanic	68.8	71.2	71.7
Black, not Hispanic	20.3	12.4	6.0
Hispanic	10.3	7.8	7.2
Other	0.6	8.6	15.1

Note. Values are weighted percentages. Sample sizes are weighted for selection probability, nonresponse, and poststratification. Percentages sum to 100% except for rounding error.
*$P<.05$.

TABLE 2—Lifetime Prevalence Rates of Suicide Symptoms and Affective Disorders, by Self-Reported Genders of Lifetime Sex Partners, Among Men Aged 17 to 39 Years: NHANES III, 1988–1994

Psychiatric History	Any Male Partners, %	Female Partners Only, %	No Sexual Intercourse, %
Suicide-related symptoms			
Thoughts of death	38.6	24.3	22.7
Desire to die	18.5	7.6	1.9
Suicide ideation	41.2	17.2	13.0
Suicide attempt	19.3	3.6	0.5
Any suicide symptom	53.2	33.2	28.1
Affective disorders			
Major depression	15.3	6.5	2.3
Single episode	3.2	1.8	0.0
Recurrent	12.2	3.5	2.2
Mania			
Bipolar I	0.9	1.2	0.1
Atypical bipolar	3.8	1.4	1.1
Dysthymia	6.6	4.7	4.4
Any affective disorder	21.5	8.8	5.5

Note. Values are weighted percentages. Weighted sample sizes are 78 for men reporting any male sex partners, 3214 for men reporting only female sex partners, and 211 for men reporting no previous sexual intercourse.

Lifetime Prevalence of Affective Disorders

Overall, 6.4% (95% CI=5.1%, 7.8%) of the men met criteria for at least 1 episode of major depression in their lives (Table 2). More often than not, men were diagnosed with recurrent depression (3.6%; 95% CI=2.6%, 4.7%) as opposed to a single episode (1.7%; 95% CI=0.9%, 2.4%), reflecting the recurrent nature of depression. While there were no differences in lifetime prevalence of depression among the 3 groups of men, there was a trend (*P*=.05) for greater prevalence rates of recurrent depression among homosexually experienced men than among exclusively heterosexually experienced men; however, this trend attenuated with control for demographic confounding (Table 3). Among men with a positive history of depression, no differences were observed in median number of episodes reported (homosexually experienced men, median=2.6 episodes; heterosexually experienced men, median=2.4 episodes; t_{49}=0.15, *P*>.10). Still, homosexually experienced men were younger (mean=14.8 years, SE=1.7) than exclusively heterosexually experienced men (mean=20.4 years, SE=1.1) when they first experienced depressive symptoms (t_{49}=2.52, *P*<.05), and this difference held after adjustment for age differences between the 2 groups. In all, approximately 15% (95% CI=2.6%, 28.0%) of men reporting same-sex partners met *DSM-III-R* criteria for lifetime major depression.

No significant differences were observed between homosexually experienced men and men reporting only female sex partners in regard to lifetime prevalence of mania or dysthymia, with or without adjustment for possible demographic confounding. Among homosexually experienced men, approximately 7% (95% CI=0.7%, 12.6%) met criteria for a lifetime diagnosis of dysthymia.

Nearly 22% (95% CI=6.1%, 36.8%) of men reporting same-sex partners met lifetime diagnostic criteria for at least 1 affective disorder. This prevalence was greater than that observed among men reporting exclusively heterosexual sexual behavior histories. However, the difference attenuated with adjustment for confounding (Table 3). Comparisons of men who were sexually inexperienced and those who were exclusively heterosexually experienced revealed few differences.

TABLE 3—Association Between Self-Reported Genders of Lifetime Sex Partners and Lifetime Prevalence of Suicide Symptoms and Affective Disorders Among Men Aged 17 to 39 years in NHANES III, 1988–1994: Results of Logistic Regression Analyses

Psychiatric History	Unadjusted Logistic Odds Ratio[a] (95% Confidence Interval)		Adjusted Logistic Odds Ratio[b] (95% Confidence Interval)	
	Any Male Partners	No Sex Partners	Any Male Partners	No Sex Partners
Suicide-related symptoms				
Thoughts of death	1.95 (1.05, 3.63)*	0.91 (0.58, 1.45)	1.86 (0.97, 3.57)	0.74 (0.43, 1.28)
Desire to die	2.18 (1.23, 6.32)*	0.24 (0.08, 0.70)*	2.47 (1.01, 6.05)*	0.27 (0.09, 0.85)*
Suicide ideation	3.38 (1.80, 6.32)*	0.72 (0.37, 1.39)	3.11 (1.56, 6.19)*	0.81 (0.38, 1.71)
Suicide attempt	6.45 (2.74, 15.23)*	0.12 (0.04, 0.42)*	5.36 (2.21, 12.98)*	0.28 (0.13, 0.59)*
Any suicide symptom	2.29 (1.33, 3.92)*	0.79 (0.52, 1.18)	2.16 (1.21, 3.83)*	0.72 (0.44, 1.20)
Affective disorders				
Major depression	2.60 (0.84, 8.09)	0.34 (0.11, 1.03)	2.42 (0.75, 7.78)	0.38 (0.13, 1.14)
Single episode	1.82 (0.25, 13.24)	0.01 (0.00, 0.01)*	1.87 (0.27, 12.89)	0.02 (0.01, 0.03)*
Recurrent	3.77 (1.00, 14.25)	0.63 (0.19, 2.11)	3.64 (0.93, 14.20)	0.74 (0.20, 2.71)
Mania				
Bipolar I	0.76 (0.15, 3.73)	0.07 (0.01, 0.63)*	0.59 (0.12, 2.92)	0.07 (0.01, 0.62)*
Atypical bipolar	2.72 (0.32, 22.74)	0.79 (0.13, 4.68)	2.32 (0.29, 18.70)	0.97 (0.14, 6.68)
Dysthymia	1.43 (0.53, 3.89)	0.92 (0.35, 2.41)	1.23 (0.42, 3.61)	1.17 (0.49, 2.79)
Any affective disorder	2.82 (1.03, 7.71)*	0.60 (0.27, 1.33)	2.55 (0.90, 7.24)	0.63 (0.30, 1.34)

[a]Referent category is men reporting female sex partners only.
[b]Referent category is men reporting female sex partners only. Odds ratios are adjusted for age, race/ethnicity, and family income.
*P<.05.

Discussion

Results reported here provide further evidence that homosexually experienced men are at greater risk for suicide symptoms than would be predicted from estimates of the general male population. In the current study, comparisons of homosexually experienced men with those reporting only opposite-sex sexual partners suggest that the former may be more than 5 times as likely to have attempted suicide. Nevertheless, the self-reported lifetime prevalence of a previous suicide attempt found here (19%) is somewhat lower than the rates revealed in 2 recent surveys of high school students. In one, a case–control study of students in Minnesota,[8] 28% of self-identified homosexual/bisexual male students reported a history of suicide attempts. In another, a population-based survey of students in Massachusetts,[9] 27.5% of those with a history of same-sex sexual contact reported at least 1 previous attempt. Furthermore, 41% of men with same-sex experience reported suicide ideation at some time in the past in NHANES III. This contrasts with the lifetime prevalence of 31% found among homosexual/bisexual male students from Minnesota and the 12-month prevalence of 41.7% among male students from Massachusetts reporting same-sex sexual contact.

One of the possible reasons for lower prevalence rates of suicide attempts in NHANES III than in the 2 recent surveys of high school students is the age difference of participants across the 3 studies. In the present sample, which included men aged 17 to 39 years, reports of previous suicide attempts were clustered among those younger than 30 years. Furthermore, the prevalence we observed is highly similar to that reported in a sample of homosexually experienced twins (16%) from a recent study.[12] This finding also supports earlier work[1–9] emphasizing the risk of suicide attempts among gay youth.

At the same time, our findings suggest that this elevated risk might not continue throughout later adulthood. Well-documented[32] patterns of recall bias in psychiatric surveys hint that the declining prevalence we observed may reflect, in part, reporting bias. Previous studies have shown that severe psychiatric symptoms and those occurring within the past 5 years are more likely to be recalled during interviews.[32] Therefore, if suicide attempts among gay men are clustered in adolescence and young adulthood, older men may not recall or interpret early self-destructive behaviors, particularly less severe ones, as suicide attempts during a psychiatric interview focusing on lifetime symptoms. The effect of this would be to reduce apparent lifetime prevalence rates among older gay men. A second possibility is that there was an age cohort effect, although the basis for this is unclear.

The current study also suggests that men with lifetime histories of same-sex sexual partners may well be at somewhat higher risk for a lifetime diagnosis of major affective disorder than exclusively heterosexually experienced men, although the small sample size is an important limitation in our ability to detect such differences. Population-based surveys of the prevalence of psychiatric disorders within homosexual populations are virtually nonexistent, despite the well-known stigmatization associated with homosexuality[33] that can serve as an important risk factor for psychiatric symptoms, if not diagnosable disorders. Indeed, other studies of gay men have shown elevated levels of depressive distress,[20,21] indicating a possible vulnerability to higher rates of affective disorders, particularly depression and dysthymia.

Although NHANES III assessed only 3 types of affective disorders (major depression, mania, and dysthymia), it provides one of the few population-based estimates of psychiatric disorders among homosexually experienced men of which we are aware. We estimate that as many as 1 in 5 homosexually active men may have a lifetime history of an affective disorder, primary recurrent depression, and that the onset of these depressive symptoms occurs at a younger age than in exclusively heterosexually experienced men. This latter finding provides further evidence that adolescence may be a particularly difficult time for young gay men.[3,5,33–35] Nevertheless, our findings do not contradict current views[36] that emphasize the distinction between psychopathology and homosexuality. Consistent with that perspective, we estimate that the great majority of homosexually active men will not report positive lifetime histories of affective disorders or suicide attempts.

One of the shortcomings of the current study is that sexual orientation was not directly assessed in NHANES III. Instead, we relied on men's self-reports of the genders of their sexual partners over their lifetimes. Previous research[18] indicates that most homosexually identified men will be correctly classified as homosexual by behavioral proxy alone but that perhaps half of the men so classified would not self-identify as homosexual/bisexual if asked. Misclassification bias is clearly present, but a full understanding of its possible effects is complicated. The willingness of men to report same-sex partners in a population-based survey such as NHANES III is unknown; thus, the extent to which homosexually experienced men either failed to specify their numbers of partners or declared no male sex partners cannot be determined. It has been found, in other population-based surveys,[13,18] that approximately 2% to 7% of all men will report having had male sexual partners. This is consistent with the prevalence observed in NHANES III. But failure to disclose would tend to bias results toward the null if suicide or psychiatric risk were associated with homosexual sexual experience.

We have a second concern, with opposite implications, in interpreting the results reported here: it is unknown to what extent willingness to disclose socially stigmatizing information about one's sexual history is positively associated with a similar willingness to disclose symptoms of psychopathology. Thus, in the current study, there is the possibility of both underestimation and overestimation of the association between homosexual sexual experience and psychopathology.

Nevertheless, although the causal reasons for the elevation in risk we observed for suicide symptomatology among men reporting same-sex partners, particularly young men—and the possible small increased risk of recurrent depression—are not known at this point, the evidence of greater risk in this population appears increasingly indisputable. Many questions remain, however. The implication of this finding of elevated risk for completed suicides is indeterminable.[8] Attempted and completed suicides are thought to reflect somewhat different phenomena.[8,36] Also, because women in NHANES III were not asked questions related to sex partner gender, no information is available concerning similar possible elevated risks among lesbians and bisexual women.

In addition, the differences observed in suicide symptoms and possibly recurrent depressive disorders among men with different sexual histories in NHANES III may result from widely disparate factors. These factors might include stigmatization and psychosocial stress among homosexually experienced men, as hypothesized by some,[5,21,34] or differences in response bias in which there is possibly a lower threshold among homosexual men for reporting negative psychological symptoms. Only further research in this area can begin to answer these questions definitively. □

Contributors

Acknowledgments

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