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Mental Health Disorders in Young Urban Sexual Minority Men

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Abstract

Purpose—Very few studies have examined mental disorders among male sexual minority youth. We describe demographic correlates, comorbidity, and history of mental disorders and suicidality in a large sample of male sexual minority youth.

Methods—Structured diagnostic interviews were conducted with 449 racially diverse, urban sexual minority males, ages 16-20, who were recruited using a social-network driven sampling methodology.

Results—Lifetime major depressive episode (MDE) affected 33.2% of the youth. Lifetime conduct disorder (23.6%), alcohol abuse/dependence (19.6%), posttraumatic stress disorder (PTSD; 16.0%), and nicotine dependence (10.7%) were also common. Black participants were less likely than White participants to be diagnosed with lifetime MDE, alcohol abuse/dependence, nicotine dependence, suicidal ideation, and anorexia, as well as past 12-month alcohol abuse/dependence (*OR*'s range from .08-.46). Relative to participants identifying as gay, bisexual identified youth were at higher risk for lifetime PTSD (*OR*=2.04), and participants who did not identify as gay or bisexual were at higher risk for both lifetime and past 12-month nicotine dependence (*OR*'s = 4.36 and 3.46, respectively). Most participants with mental disorders never received treatment, and comorbidity was common.

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Implications and Contribution: This study describes the frequency of mental disorders among male sexual minority youth using structured psychiatric interviews. Major depressive episode, conduct disorder, alcohol abuse/dependence, posttraumatic stress disorder, and nicotine dependence were common, and most youth with mental disorders had not received treatment.

Conclusions—MDE, conduct disorder, alcohol abuse/dependence, PTSD, and nicotine dependence are common and infrequently treated in young sexual minority men. Some within-group disparities emerged, suggesting factors related to racial background and self-identification may help to understand resilience to the unique stressors experienced by these young men.

Keywords

minority health; homosexuality, male; mental disorders; comorbidity; frequency; adolescents, male; young adult; age of onset

Minority stress theory posits that lesbian, gay, and bisexual (LGB) people may experience mental health disparities due to stressors related to societal stigma (e.g., discrimination, victimization) [1]. Indeed, LGB adults are at higher risk for depressive, anxiety, and substance use disorders than heterosexual adults [2]. Less is known, however, regarding potential mental health disparities among LGB youth.

Structured psychiatric interviews are the epidemiological gold standard for assessing mental disorders, but have rarely been used with LGB youth [3]. A cohort study involving a small sample ($N=28$) of LGB youth in New Zealand suggested they were more likely than their heterosexual peers ($N=979$) to experience major depression, generalized anxiety disorder, conduct disorder, and nicotine dependence [4]. Other studies have compared frequencies of mental health disorders among heterosexual versus sexual minority homeless youth [5,6]; however, results may not generalize to non-homeless youth.

Due to the large representative samples necessary to recruit adequate numbers of LGB people, many population-based studies are also forced to aggregate LGB individuals across sex, sexual orientation, and race/ethnicity. To our knowledge only three studies have described the frequency of mental disorders among male sexual minority youth using psychiatric interviews. Two were conducted with homeless youth [6,7]. The other study described frequencies of 12-month diagnoses in the subsample of 121 male-born sexual minority youth in Chicago (recruited via incentivized peer recruitment, email advertisements, flyers distributed at events and locations frequented by LGB people, etc.) [3]. Substance use disorders and lifetime mental disorders, however, were not examined. One goal of the current study is to replicate these results, and extend them by examining substance use disorders and lifetime diagnoses, in a separate, larger sample of male sexual minority youth also living in Chicago.

Sexual Orientation

Meta-analysis has indicated that substance use and suicidality disparities between heterosexual and bisexual youth are greater than disparities between heterosexual and lesbian/gay youth [8,9]. However, an aggregate analysis of nine large school-based studies suggested differences in suicidality between bisexual versus lesbian/gay youth were inconsistent across the studies [10]. Further, in the subsample of male sexual minority youth in Chicago [3], bisexual males were *less* likely than gay males to have attempted suicide. Thus, we hypothesized that bisexual males in the current study would have greater

frequencies of substance use disorders, but not suicidality or other mental disorders, relative to gay males.

Race/Ethnicity

LGB people of color may experience discrimination based on race/ethnicity as well as sexual orientation; these stressors might have additive effects on mental health. Although a study did suggest Latino LGB adults were more likely than the White participants to have attempted suicide, Black LGB adults were less likely to be diagnosed with anxiety, depressive, and substance use disorders relative to White LGB adults [11]. Conversely, racial/ethnic minority LGB individuals may be more resilient to minority stress than White LGB people, as LGB people of color may: 1) have learned strategies for coping with racism that assist in coping with heterosexism, 2) flexibly highlight or downplay their sexual identity depending on the demands of the social context, or 3) draw upon religious communities or personal faith [12]. Thus, we set no hypotheses regarding race/ethnicity.

Other Goals of the Current Study

We describe patterns of comorbidity, as well as history (i.e., age of onset and symptom duration) and treatment utilization for each diagnosis. This study is the first to our knowledge to examine these variables among young sexual minority men. Thus, we had no *a priori* hypotheses.

METHODS

Procedures

We analyzed baseline data from an ongoing longitudinal cohort study of male sexual minority youth in Chicago first reported by Mustanski et al. [13]. The study was approved by the Institutional Review Boards at all study sites. Informed consent/assent was obtained from all participants. The Institutional Review Boards approved a waiver of parental permission for minor participants to allow for safe participation of youth whose parents were unaware or unaccepting of their child's sexual orientation. For more information on waivers of parental permission, see Mustanski [14].

Participants

Participants ($N = 450$) were recruited from Chicago and surrounding areas from December 2009 to February 2013. Previous reports from this study indicated there were 451 participants [15]; the discrepancy is due to removal of one participant who was later discovered to not meet the age eligibility criteria. Inclusion criteria were: 1) aged 16-20 years; 2) male birth sex; 3) English-speaking; 4) have had sex with a male or identify as gay/bisexual; and 5) available for follow-up for 2 years. For recruitment, respondent driven sampling [16] was used, but adapted to allow a higher proportion of initial recruits (i.e., “seeds”). Seeds ($n=172$, 38.3%) were recruited through community outreach, school organizations, flyers posted in community locations frequented by LGB youth, and geo-social network applications (i.e., Grindr & Jackd). Both seeds and “sprouts” (i.e., youth recruited by other participants) were permitted to recruit at most 3 other youth into the

study. On average, each seed recruited .54 ($SD=.91$) sprouts, and each sprout recruited .67 ($SD=.95$) other sprouts. For seeds who recruited at least one sprout, the median number of waves of sprouts was 2, and the maximum number of waves was 8.

Measures

The Computerized Diagnostic Interview Schedule, Version IV (C DIS-IV) [17], is a structured interview that can be administered by trained lay interviewers to establish presence, age of onset, and duration of Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) [18] mental disorders. Participants completed modules assessing lifetime and 12-month diagnoses of PTSD, major depressive episode (MDE), alcohol abuse, alcohol and nicotine dependence, conduct disorder, anorexia, and bulimia. For this analysis, we combined participants with alcohol abuse or dependence, as the DSM-V [19] has combined substance abuse and dependence into one diagnosis. The C DIS-IV suicidality module queried lifetime suicidal ideation and attempts.

Site supervisors attended C DIS-IV administration training by the interview creators, and then trained and supervised all interviewers according to protocol. Interviewers had bachelor's degrees and experience with the target population. All interviewers were regularly audited for fidelity to the interview protocol by a psychologist.

Age of onset for each diagnosis is determined by querying when the participant first experienced any of the endorsed symptoms. Participants are also asked when they last experienced any of the endorsed symptoms. Symptom duration is then determined by calculating the length of time between the most recent symptoms and the age of onset, and subtracting any remission periods of at least one year duration.

The C DIS-IV also assesses treatment utilization for each diagnosis. Consultation with a health professional regarding the disorder during the previous year was the only type of service that was considered past year treatment. For most disorders, ever having consulted a health professional was considered lifetime treatment. However, for alcohol use disorders, AA and group therapy were also included as lifetime treatment options queried. For nicotine dependence, only classes or groups for quitting tobacco, nicotine gum or patches, or nicotine-free cigarettes were considered lifetime treatments.

For the DSM-IV diagnosis of anorexia, criterion A involves refusal to maintain adequate body weight (85% of expected body weight given age and height) [18]. C DIS-IV scoring indicates criterion A can be satisfied by being underweight according to this more objective criterion, or by an affirmative response to a question asking if anyone had told the participant they were “too thin to be healthy.” To more closely follow the DSM-IV, we modified the scoring by requiring refusal to maintain at least 85% of adequate body weight to satisfy criterion A.

The Family Affluence Scale [20] was administered to assess socioeconomic status. We adapted the measure to the age of the sample by adding the phrase “growing up” to questions assessing participants’ experiences while living with their family.

Statistical Analysis

We estimated unadjusted frequencies and standard errors based on the entire sample, as well as subsamples defined by race/ethnicity, sexual orientation, and age. To test for differences in frequencies of mental disorders between these subsamples, we used logistic regression to model each diagnosis onto race/ethnicity, sexual orientation, and age simultaneously. Adjusted odds ratios and 95% confidence intervals were estimated. Medians, as well as 25th and 75th percentiles, were calculated to describe age of onset, while means and standard deviations were calculated to describe the duration of symptoms for each disorder. We calculated the frequency of treatment utilization for participants with each diagnosis.

RESULTS

Participant Characteristics

Due to one participant's scheduling difficulties, the C DIS-IV was not administered to him, resulting in an analytic sample of 449. The mean age was 18.9 ($SD=1.3$). Almost three quarters of the participants ($n=329$; 73.3%) identified as gay, while 96 (21.4%) identified as bisexual, and 24 (5.3%) used other language to describe their sexual orientation. Relative to the general population of Chicago [21], Black individuals were overrepresented ($n=240$; 53.5%). Ninety (20.0%) participants were Hispanic/Latino, 81 (18.0%) were White, and 38 (8.5%) were of another race (i.e., 7 were American Indian/Alaska Native, 7 were Asian, and 24 were multiracial).

About half the participants lived with their parents ($n=233$; 51.9%), while 188 (41.9%) had some other stable housing, and 28 (6.2%) lacked stable housing. Most participants were of medium (40.5%) or high (41.6%) socioeconomic status, while 17.1% were of low socioeconomic status; 3 (0.7%) participants were missing this data. High school had not been completed by 173 of the youth (38.5%), while 120 (26.7%) youth had a high school education or equivalent, and 156 (34.7%) had acquired some education beyond high school. Chi-square tests suggested that seeds and sprouts did not have significantly different rates of mental disorders.

Frequencies of Mental Health Disorders and Difficulties

Table 1 presents unadjusted frequencies of specific mental disorders and suicidality for the entire sample, as well as frequencies separated based on race/ethnicity, sexual orientation, and age. MDE was the most common lifetime diagnosis (33.2%), followed by conduct disorder (23.6%), alcohol abuse/dependence (19.6%) and PTSD (16.0%). Of the 12-month diagnoses, MDE was also the most common (17.8%), followed by nicotine dependence (8.0%), alcohol abuse/dependence (7.3%), PTSD (6.5%), and conduct disorder (6.0%).

Demographic Correlates of Mental Health Disorders and Suicidality

Black, relative to White participants, were less frequently diagnosed with lifetime or 12-month alcohol abuse/dependence, lifetime nicotine dependence, lifetime MDE, lifetime anorexia, and lifetime suicidal ideation (Table 2). Participants of "other" race (i.e., not Black, Hispanic/Latino, or White) were more likely than White participants to be diagnosed with lifetime conduct disorder and to have made a suicide attempt. Given the differences

between Black and White participants, we conducted a post-hoc analysis comparing Black to Latino youth; Black youth had significantly lower frequencies of lifetime and 12-month alcohol abuse/dependence, nicotine dependence, and MDE (adjusted *ORs* ranged from .26 to .48).

Young bisexual-identified men were more likely than those identifying as gay to be diagnosed with lifetime PTSD, while those who identified with some other sexual orientation were more likely than young gay men to be diagnosed with lifetime and 12-month nicotine dependence. Participants younger than 18 years of age were less likely to be diagnosed with alcohol abuse/dependence. All other comparisons between the racial/ethnic, sexual orientation, and age groups against their respective reference groups, as listed in Table 2, failed to reach significance at the .05 level.

Comorbidity

Per the number of diagnosed lifetime mental disorders (not including suicidal ideation or attempts), 44.8% of the participants had none, 23.8% had one, 16.7% had two, 9.4% had three, and 5.3% had four or more. Patterns of comorbidity for the most common types of lifetime mental disorders are displayed in Figure 1. Most participants with MDE, PTSD, conduct disorder, or substance use disorders (i.e., alcohol abuse/dependence or nicotine dependence) also met lifetime criteria for one or more of the three other diagnostic categories. In particular, 81.9% of participants with PTSD, 75.5% of those with substance use disorders, 68.9% of those with conduct disorder, and 68.5% of those with MDE also had one or more of the other three categories of lifetime diagnoses. Particularly common intersections were the triple comorbidity of MDE, conduct disorder, and substance use disorder (5.1%), comorbid MDE and PTSD only (5.6%), and MDE and substance use disorder only (3.8%).

For the 12-month mental disorders, comorbidity was still common although less frequent than lifetime comorbidity. Among the participants, 68.2% had no 12-month disorders, 19.6% had one, and 12.2% had more than one. Many participants with MDE (46.3%), PTSD (58.6%), conduct disorder (74.1%), and substance use disorders (42.6%) also met 12-month criteria for one or more of the other diagnostic categories. In contrast to the lifetime diagnoses, conduct disorder was the most likely to be comorbid with another diagnostic category.

Disorder History and Treatment Utilization

Table 3 displays the age of onset, duration of symptoms, and treatment utilization for several diagnoses. Alcohol abuse/dependence and bulimia had the latest median onset (age 17) and, not surprisingly given the constrained age of the sample, also the shortest durations (about 2 years). Most youth with MDE had an onset between ages 13 to 16, continuing for an average of about 3 years. PTSD had the most variable onset, most commonly between 11-17 years, with a longer duration (3.8 years on average). Conduct disorder had the earliest median onset (age 13) and longest duration (about 4 years).

Most diagnosed youth never received treatment. Some of the least treated disorders were anorexia and alcohol abuse/dependence, and the most treated disorders were MDE and PTSD. Even MDE and PTSD, however, constituted unmet treatment needs, as a substantial proportion of young men with 12-month diagnoses did not receive treatment in the past year (67.5% and 82.8%, respectively) or desired but did not receive treatment during those 12 months (31.3% and 24.1%, respectively).

DISCUSSION

Over half of these racially diverse, urban sexual minority men ages 16-20 had one or more lifetime mental health disorders. MDE was by far the most common; conduct disorder, alcohol abuse/dependence, PTSD, and nicotine dependence were also common, and lifetime comorbidity was the norm. Most diagnosed participants never received treatment. These findings call for further research on how to help young sexual minority men overcome barriers to receiving mental health services. In addition to barriers that youth in general may encounter, sexual minority youth can also face population-specific barriers such as a lack of culturally competent providers and discomfort disclosing their sexual orientation to providers [22].

There is limited research describing the prevalence of mental disorders among adolescents in general. We compared the 16-17 year old youth in the current study to a nationally representative sample of 17-18 year olds [23]. Lifetime major depression (27.2% vs. 15.4% [including dysthymia]), PTSD (15.8% vs. 7.0%), and conduct disorder (21.9% vs. 9.6%) were substantially more likely in the sexual minority youth, while alcohol abuse/dependence was not (12.9% vs. 14.5%). However, the aforementioned study used a different diagnostic interview, included males and females, diagnosed certain disorders if either the parent or adolescent reported the necessary criteria, included a much lower ratio of Black to White youth, and the comparison subsample was slightly older than in the current study. The latter three differences suggest that some disparities between youth in the current study versus the national study may be underestimated. However, given the myriad of methodological and sampling differences, it is impossible to know how the frequencies of the mental disorders in the current study would compare to those in demographically matched, heterosexual youth. Notwithstanding, the remarkably high rate of MDE alone tentatively suggests that, as in sexual minority adults, mental health disparities may exist in male sexual minority youth, and interventions are needed that address the unique needs of this population.

We partially replicated the frequencies of mental health difficulties among males in the previous study examining 16-20 year old Chicagoan sexual minority and transgender youth [3]. Exceptions were lifetime suicide attempt and 12-month conduct disorder, which were substantially less frequent in the current study (14.0% vs. 25.8% and 6.0% vs. 16.5%). These discrepancies may be due to many factors, including demographic differences between samples, changes in legislation and societal attitudes toward homosexuality that may have produced declines in mental disorders [24], and/or differences in assessment measures.

Youth of other race (i.e., not Black, Hispanic/Latino, or White) were at increased risk for both lifetime conduct disorder and suicide attempt relative to White participants. These findings are concerning and merit study with larger samples of youth from the specific racial backgrounds included within this “other” category. However, contrary to the results of the previous Chicago study [3], which found that racial/ethnic minority LGBT youth as a whole were more likely to meet criteria for conduct disorder, Black and Hispanic/Latino participants were not significantly more likely to be diagnosed with conduct disorder than White participants. On the contrary, Black participants were at lower risk for several mental health concerns (i.e., lifetime and 12-month alcohol abuse/dependence and lifetime nicotine dependence, MDE, anorexia, and suicidal ideation) while not being at higher risk of any. The finding that Black youth were at lower risk for lifetime but not 12-month MDE may be due to lower power, as the effect for 12-month MDE trended toward significance.

Our results regarding the relationship between sexual orientation and mental health difficulties may have differed from the previous Chicago study because the current study only included males, whereas the analyses regarding sexual orientation in the previous study were conducted across male, female, and transgender youth [3]. For example, bisexual males in the current study were not at lower risk for lifetime suicide attempt. Further, contrary to our hypothesis, bisexuality, relative to gay sexual orientation was not significantly associated with alcohol abuse/dependence or nicotine dependence. We did, however, find that young men who used sexual identity labels other than gay or bisexual were at higher risk for lifetime and 12-month nicotine dependence than young gay men. Finally, young bisexual men were also at higher risk than young gay men for lifetime PTSD, suggesting need for research examining victimization that may be related to unique prejudicial beliefs regarding bisexuality, or minority stress-related factors that may impede adaptive processing of trauma among male bisexual youth (e.g., potentially lower support from gay and lesbian people). Although 12-month PTSD was not significantly more frequent among bisexual youth relative to gay youth, this may have been due to lower power as the effect size is similar to that of lifetime PTSD.

Of participants with lifetime conduct disorder, most endorsed lying (93.4%), non-confrontational theft (72.6%), and running away (58.5%). Regarding aggressive symptoms, many endorsed using a weapon (51.9%), destroying others’ property (41.5%), and frequently initiating physical fights (40.6%). Exposure to peer victimization and other stressful events predicted aggressive behavior among adolescents, and this effect was mediated by emotion dysregulation [25]; thus, minority stress may have resulted in high rates of conduct disorder among this sample, and clinicians working with sexual minority youth should consider assessing the youth's emotion regulation skills. Future studies should also elucidate functions of these behaviors. For example, young sexual minority men may initiate fights to prevent anticipated peer victimization or lie to conceal their sexuality and thereby avoid stigma.

The age of onset data may be useful in designing prevention strategies targeting male sexual minority youth. As an example, for prevention efforts to have preceded the onset of MDE in the majority (i.e., 75%) of the current sample, youth under age 13.5 would need to be reached. Alcohol abuse/dependence and nicotine dependence present perhaps the easiest

targets in terms of timing, as the majority of onsets occurred within more narrow (i.e., two year) time windows. In any case, findings call for development of innovative prevention approaches for reaching sexual minority males during early adolescence.

Limitations

Our sample included a substantial proportion of racial/ethnic minority youth, who are understudied in research among sexual minority people. Respondent driven sampling may also have led to recruitment of youth who do not frequent LGB dedicated venues and thus would not have been included in most previous community- or clinic-based samples of sexual minority youth. Although these are strengths of this study, early claims regarding the representativeness of samples generated by respondent driven sampling have been tempered [26]. Thus, our conclusions may not generalize to the general population of male sexual minority youth in Chicago. Further, there may have been sociocultural factors unique to Chicago that would limit generalizability to young, urban sexual minority males in general.

Conclusion

This is the second study to our knowledge that describes the frequency of mental disorders among a community sample of male sexual minority youth using structured psychiatric interviews, and the first to use such methods to examine substance use disorders, lifetime diagnoses, comorbidity, history, and treatment utilization. Consistent with minority stress theory, MDE, conduct disorder, alcohol abuse/dependence, PTSD, and nicotine dependence are common among young sexual minority men, suggesting increased need for efficacious, culturally informed care. Most sexual minority men with mental health disorders do not receive treatment, suggesting need for increased outreach. Young sexual minority males who are Black, or who self-identify as gay, appear to be at lower risk for certain mental disorders. Future studies should examine protective factors within these subgroups to better understand resilience to minority stress.

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Acronyms

C DIS-IV	Computerized Diagnostic Interview Schedule, Version IV
DSM	Diagnostic and Statistical Manual of Mental Disorders
LGB	lesbian, gay, and bisexual
MDE	major depressive episode
PTSD	posttraumatic stress disorder

REFERENCES

1. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull.* 2003; 129:674–697. [PubMed: 12956539]

2. King M, Semlyen J, Tai SS, et al. A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *Bmc Psychiatry*. 2008;8. [PubMed: 18271956]
3. Mustanski BS, Garofalo R, Emerson EM. Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *Am J Public Health*. 2010; 100:2426–2432. [PubMed: 20966378]
4. Fergusson DM, Horwood LJ, Beautrais AL. Is sexual orientation related to mental health problems and suicidality in young people? *Arch Gen Psychiat*. 1999; 56:876–880. [PubMed: 10530626]
5. Chen XJ, Thrane L, Whitbeck LB, et al. Mental disorders, comorbidity, and postrunaway arrests among homeless and runaway adolescents. *J Res Adolescence*. 2006; 16:379–402.
6. Noell JW, Ochs LM. Relationship of sexual orientation to substance use, suicidal ideation, suicide attempts, and other factors in a population of homeless adolescents. *J Adolesc Health*. 2001; 29:31–36. [PubMed: 11429303]
7. Whitbeck LB, Chen XJ, Hoyt DR, et al. Mental disorder, subsistence strategies, and victimization among gay, lesbian, and bisexual homeless and runaway adolescents. *J Sex Res*. 2004; 41:329–342. [PubMed: 15765273]
8. Marshal MP, Friedman MS, Stall R, et al. Sexual orientation and adolescent substance use: a meta-analysis and methodological review. *Addiction*. 2008; 103:546–556. [PubMed: 18339100]
9. Marshal MP, Dietz LJ, Friedman MS, et al. Suicidality and depression disparities between sexual minority and heterosexual youth: a meta-analytic review. *J Adolesc Health*. 2011; 49:115–123. [PubMed: 21783042]
10. Saewyc EM, Skay CL, Hynds P, et al. Suicidal ideation and attempts in North American school-based surveys: are bisexual youth at increasing risk? *J LGBT Health Res*. 2007; 3:25–36. [PubMed: 19835039]
11. Meyer IH, Dietrich J, Schwartz S. Lifetime prevalence of mental disorders and suicide attempts in diverse lesbian, gay, and bisexual populations. *Am J Public Health*. 2008; 98:1004–1006. [PubMed: 17901444]
12. Moradi B, Wiseman MC, DeBlaere C, et al. LGB of color and white individuals' perceptions of heterosexist stigma, internalized homophobia, and outness: comparisons of levels and links. *Couns Psychol*. 2010; 38:397–424.
13. Mustanski B, Johnson A, Garofalo R, et al. Perceived likelihood of using HIV pre-exposure prophylaxis medications among young men who have sex with men. *AIDS Behav*. 2013; 17:2173–2179. [PubMed: 23128980]
14. Mustanski B. Ethical and regulatory issues with conducting sexuality research with LGBT adolescents: a call to action for a scientifically informed approach. *Arch Sex Behav*. 2011; 40:673–686. [PubMed: 21528402]
15. Giorgio JM, Sanfilippo J, Kleiman E, et al. An experiential avoidance conceptualization of depressive rumination: three tests of the model. *Behaviour research and therapy*. 2010; 48:1021–1031. [PubMed: 20691426]
16. Heckathorn DD. Respondent-driven sampling: A new approach to the study of hidden populations. *Soc Probl*. 1997; 44:174–199.
17. Robins, L.; Cottler, LB.; Bucholz, KK.; Compton, WM.; North, CS.; Rourke, KM. Diagnostic Interview Schedule for the DSM-IV (DIS-IV). Washington University School of Medicine Epidemiology and Prevention Research Group; St Louis, MO: 2000.
18. American Psychiatric Association. Task Force on DSM-IV. Diagnostic and statistical manual of mental disorders : DSM-IV. American Psychiatric Association; Washington, DC: 1994.
19. Bender RE, Alloy LB, Sylvia LG, et al. Generation of life events in bipolar spectrum disorders: a re-examination and extension of the stress generation theory. *Journal of clinical psychology*. 2010; 66:907–926. [PubMed: 20694958]
20. Boyce W, Torsheim T, Currie C, et al. The family affluence scale as a measure of national wealth: Validation of an adolescent self-report measure. *Soc Indic Res*. 2006; 78:473–487.
21. U.S. Census Bureau. State & County QuickFacts; Chicago, Illinois: Available at: <http://quickfacts.census.gov/qfd/states/17/1714000.html>. [March 1, 2013]
22. Institute of Medicine. The health of lesbian, gay, bisexual, and transgender people: building a foundation for better understanding. The National Academies Press; Washington, DC: 2011.

23. Merikangas KR, He JP, Burstein M, et al. Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication--Adolescent Supplement (NCS-A). *J Am Acad Child Psy.* 2010; 49:980–989.
24. Hatzenbuehler ML, McLaughlin KA, Keyes KM, et al. The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: a prospective study. *Am J Public Health.* 2010; 100:452–459. [PubMed: 20075314]
25. Herts K, McLaughlin K, Hatzenbuehler M. Emotion Dysregulation as a Mechanism Linking Stress Exposure to Adolescent Aggressive Behavior. *J Abnorm Child Psychol.* 2012; 40:1111–1122. [PubMed: 22466516]
26. Johnston LG, Malekinejad M, Kendall C, et al. Implementation challenges to using respondent-driven sampling methodology for HIV biological and behavioral surveillance: field experiences in international settings. *AIDS Behav.* 2008; 12:S131–S141. [PubMed: 18535901]

Fig. 1.

Venn diagram indicating the percentage of participants with each lifetime diagnosis or diagnostic combination of posttraumatic stress disorder, conduct disorder, major depressive episode, and substance use disorder (i.e., alcohol abuse/dependence or nicotine dependence), out of the 448 participants for whom all these diagnostic data was available

Table 1

Frequencies of Mental Disorders and Suicidality

	Overall % (SE)	Race/Ethnicity				Sexual Orientation			Age	
		Black % (SE)	Latino % (SE)	White % (SE)	Other % (SE)	Gay % (SE)	Bisexual % (SE)	Other % (SE)	<18 % (SE)	18+ % (SE)
Total, no.	449 ^a	240	90	81	38	329	96	24	116	333
Alcohol D/O										
Lifetime	19.6 (1.9)	15.0 (2.3)	24.4 (4.6)	29.6 (5.1)	16.2 (6.1)	18.8 (2.2)	19.8 (4.1)	30.4 (9.8)	12.9 (3.1)	22.0 (2.3)
12-month	7.3 (1.2)	4.2 (1.3)	11.1 (3.3)	12.3 (3.7)	8.1 (4.5)	6.7 (1.4)	9.4 (3.0)	8.7 (6.0)	6.0 (2.2)	7.8 (1.5)
Nicotine Dep.										
Lifetime	10.7 (1.5)	7.1 (1.7)	17.8 (4.1)	13.6 (3.8)	10.8 (5.2)	9.1 (1.6)	12.5 (3.4)	26.1 (9.4)	6.0 (2.2)	12.3 (1.8)
12-month	8.0 (1.3)	5.4 (1.5)	12.2 (3.5)	9.9 (3.3)	10.8 (5.2)	6.7 (1.4)	10.4 (3.1)	17.4 (8.1)	4.3 (1.9)	9.3 (1.6)
Conduct D/O										
Lifetime	23.6 (2.0)	24.2 (2.8)	18.9 (4.1)	19.8 (4.5)	39.5 (8.0)	22.2 (2.3)	29.2 (4.7)	20.8 (8.5)	21.6 (3.8)	24.3 (2.4)
12-month	6.0 (1.1)	5.4 (1.5)	4.4 (2.2)	7.4 (2.9)	10.5 (5.0)	6.1 (1.3)	7.3 (2.7)	0	9.5 (2.7)	4.8 (1.2)
MDE										
Lifetime	33.2 (2.2)	25.4 (2.8)	40.0 (5.2)	46.9 (5.6)	36.8 (7.9)	33.4 (2.6)	31.3 (4.8)	37.5 (10.1)	26.7 (4.1)	35.4 (2.6)
12-month	17.8 (1.8)	13.8 (2.2)	25.6 (4.6)	23.5 (4.7)	13.2 (5.6)	18.2 (2.1)	15.6 (3.7)	20.8 (8.5)	14.7 (3.3)	18.9 (2.1)
PTSD										
Lifetime	16.0 (1.7)	15.8 (2.4)	12.2 (3.5)	18.5 (4.3)	21.1 (6.7)	13.4 (1.9)	22.9 (4.3)	25.0 (9.0)	15.5 (3.4)	16.2 (2.0)
12-month	6.5 (1.2)	6.3 (1.6)	4.4 (2.2)	8.6 (3.1)	7.9 (4.4)	5.5 (1.3)	9.4 (3.0)	8.3 (5.8)	5.2 (2.1)	6.9 (1.4)
Anorexia										
Lifetime	3.6 (0.9)	0.8 (0.6)	4.4 (2.2)	11.1 (3.5)	2.6 (2.6)	4.3 (1.1)	0	8.3 (5.8)	3.4 (1.7)	3.6 (1.0)
12-month	0.7 (0.4)	0	1.1 (1.1)	2.5 (1.7)	0	0.9 (0.5)	0	0	0	0.9 (0.5)
Bulimia										
Lifetime	1.1 (0.5)	0.8 (0.6)	1.1 (1.1)	2.5 (1.7)	0	1.2 (0.6)	1.0 (1.0)	0	0.9 (0.9)	1.2 (0.6)
12-month	0	0	0	0	0	0	0	0	0	0
Suicidal Idea.										
Lifetime	38.8 (2.3)	32.1 (3.0)	40.0 (5.2)	51.9 (5.6)	50.0 (8.2)	39.8 (2.7)	32.3 (4.8)	50.0 (10.4)	37.1 (4.5)	39.3 (2.7)
Suicide Attemp.										
Lifetime	14.0 (1.6)	12.9 (2.2)	14.4 (3.7)	11.1 (3.5)	26.3 (7.2)	14.6 (1.9)	11.5 (3.3)	16.7 (7.8)	12.1 (3.0)	14.7 (1.9)

Note. Alcohol D/O = alcohol abuse or dependence; Dep = dependence; Conduct D/O = conduct disorder; MDE = major depressive episode; PTSD = posttraumatic stress disorder; Suicidal Idea = suicidal ideation; Suicide Attemp = suicide attempt

^a For diagnoses of alcohol abuse or dependence, and nicotine dependence, one participant is not included in analyses due to items missing that render these diagnoses indeterminate.

Table 2

Adjusted odds ratios and 95% confidence intervals for each mental health difficulty regressed onto race, sexual orientation, and age simultaneously.

	Race (ref. = White)			Sexual Orientation (ref. = Gay)			Age (ref. = 18+)
	Black AOR (95% CI)	Latino AOR (95% CI)	Other AOR (95% CI)	Bisexual AOR (95% CI)	Other AOR (95% CI)	<18 AOR (95% CI)	
Total, no.	240	90	38	96	24	116	
Alcohol D/O							
Lifetime	0.40 (0.22,0.75)*	0.84 (0.42,1.68)	0.47 (0.17,1.30)	1.35 (0.74,2.46)	2.03 (0.77,5.33)	0.54 (0.29,0.99)*	
12-month	0.25 (0.10,0.66)*	0.89 (0.34,2.29)	0.58 (0.15,2.30)	2.16 (0.91,5.15)	1.57 (0.33,7.45)	0.75 (0.31,1.80)	
Nicotine Dep.							
Lifetime	0.42 (0.18,0.99)*	1.60 (0.67,3.79)	0.81 (0.23,2.80)	1.96 (0.91,4.20)	4.36 (1.51,12.58)*	0.44 (0.19,1.04)	
12-month	0.44 (0.17,1.16)	1.43 (0.53,3.85)	1.13 (0.31,4.14)	2.17 (0.94,5.02)	3.46 (1.03,11.58)*	0.43 (0.16,1.15)	
Conduct D/O							
Lifetime	1.21 (0.64,2.29)	0.94 (0.44,2.03)	2.59 (1.10,6.08)*	1.39 (0.82,2.36)	0.88 (0.31,2.47)	0.86 (0.51,1.44)	
12-month	0.64 (0.23,1.80)	0.48 (0.13,1.81)	1.32 (0.34,5.10)	1.30 (0.52,3.29)	0	2.13 (0.95,4.77)	
MDE							
Lifetime	0.38 (0.22,0.66)*	0.80 (0.43,1.48)	0.67 (0.30,1.49)	1.14 (0.69,1.91)	1.30 (0.53,3.15)	0.67 (0.41,1.08)	
12-month	0.53 (0.28,1.02)	1.19 (0.59,2.41)	0.51 (0.17,1.49)	1.00 (0.53,1.90)	1.30 (0.46,3.70)	0.72 (0.40,1.31)	
PTSD							
Lifetime	0.69 (0.35,1.37)	0.60 (0.26,1.41)	1.08 (0.41,2.87)	2.04 (1.12,3.70)*	2.14 (0.80,5.75)	1.01 (0.56,1.83)	
12-month	0.60 (0.23,1.59)	0.49 (0.14,1.76)	0.85 (0.21,3.53)	1.93 (0.81,4.63)	1.51 (0.32,6.99)	0.78 (0.31,1.99)	
Anorexia							
Lifetime	0.08 (0.02,0.39)*	0.40 (0.11,1.40)	0.24 (0.03,1.99)	0	2.70 (0.52,14.09)	1.28 (0.38,4.33)	
Suicidal Idea.							
Lifetime	0.46 (0.27,0.77)*	0.64 (0.35,1.18)	0.95 (0.44,2.07)	0.85 (0.52,1.40)	1.61 (0.69,3.76)	0.94 (0.60,1.47)	
Suicide Attmp.							
Lifetime	1.29 (0.58,2.87)	1.44 (0.57,3.59)	3.02 (1.10,8.25)*	0.75 (0.36,1.53)	1.17 (0.38,3.62)	0.77 (0.41,1.47)	

^aFor diagnoses of alcohol abuse, alcohol dependence, and nicotine dependence, one participant is not included in analyses due to items missing that render these diagnoses indeterminate.

Note. Ref = reference group; Alcohol D/O = alcohol abuse or dependence; Dep = depression; Conduct D/O = conduct disorder; MDE = major depressive episode; PTSD = posttraumatic stress disorder; Suicidal Idea = suicidal ideation; Suicide Attmp = suicide attempt. As only 5 participants were diagnosed with lifetime bulimia, none with 12-month bulimia, and 3 with 12-month anorexia, adjusted odds ratios are not presented for these diagnoses.

*
 $p < .05$

Table 3

Age of onset, duration of symptoms, and treatment utilization.

	Lifetime n	Age of Onset			Duration (in years)		Treated (Ever)		Treated (Past Year)		Treatment Desired but Not Obtained (Past Year)	
		25%	Median	75%	Mean	SD	n	%	n	%	n	%
Alcohol D/O	88	16.5 ^a	17.5	18.5	1.9 ^a	1.5	17	19.3	1	3.0	3	9.1
Nicotine Dep.	48	15.5 ^b	16.5	17.5	2.9 ^b	2.0	16 ^c	33.3	2	5.6	6	16.7
Conduct D/O	106	12.5	13.5	15.5	4.1	2.7	24	22.6	3	11.1	3	11.1
MDE	149	13.5 ^d	14.5	16.5	3.1 ^d	2.8	65	43.6	26	32.5	25	31.3
PTSD	72	11.5 ^a	14.5	17.5	3.8 ^a	4.0	31	43.1	5	17.2	7	24.1
Anorexia	16	12.5	15.0	15.5	3.6	3.1	2	12.5	0	0	0	0
Bulimia	5	-	17.5	-	1.7	1.6	1	20.0	-	-	-	-

Note. Alcohol D/O = alcohol abuse or dependence; D/O = disorder; Dep. = dependence; MDE = major depressive episode; PTSD = posttraumatic stress disorder. Due to the small number of participants with bulimia, we felt that the 25th and 75th percentiles for the age of onset may be unreliable; thus they are not reported.

^aTwo participants were missing data

^bOne participant was missing data

^cLifetime treatment for nicotine dependence included nicotine replacement therapies, even if not used under the direction of a healthcare provider.

^dFour participants were missing data