HHS Public Access

Author manuscript

J Health Care Poor Underserved. Author manuscript; available in PMC 2021 January 09.

Published in final edited form as:

J Health Care Poor Underserved. 2020 ; 31(4): 1693–1711. doi:10.1353/hpu.2020.0127.

The Confluence of Housing Instability and Psychosocial, Mental, and Physical Health in Sexual Minority Young Adults: The P18 Cohort Study

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Abstract

Sexual and gender minority (SGM) youth experience housing instability, including homelessness, at higher rates than heterosexuals. Few studies have examined differences within SGM populations and intersections of housing and health. Data were drawn from a study of SGM young adults who were assigned male at birth. Nearly one-quarter of the sample reported homelessness, unstable housing, or both in the six months prior to assessment. Housing instability was higher among those of lower income and educational attainment. Additionally, those who experienced any housing instability reported higher levels of depression, poorer self-rated health, and greater gay-related stigma; in multivariable models, only self-rated health was related to housing status. Stigma and discrimination may lead to poorer mental health; housing instability and homelessness may be a manifestation of stigma perpetuated by social conditions and mental health burdens directed by familial rejection. Findings indicate the importance of a biopsychosocial perspective in addressing housing instability in SGM youth.

Keywords

Mental health; health disparities; housing status; sexual and gender minorities; LGBT homelessness

Housing instability, which includes homelessness as well as precarious housing situations such as frequent moving and “couch surfing,” is a significant problem for sexual minority (lesbian, gay, bisexual, queer, or otherwise non-heterosexual) and gender minority (transgender and gender non-conforming) youth, who account for at least 40% of homeless youth in New York City[1,2] and 20–40% across the U.S.[3] A recent study found that sexual and gender minority (SGM) young adults were 120% more likely to experience homelessness in the previous year, along with increased risk for young adults who were people of color, were low-income, and had not completed high school or an equivalent General Education Diploma (GED).[4] These high proportions may be underestimations, as housing status questionnaires often do not include items on sexual orientation and

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transgender identity, and because SGM youth are less likely to disclose their identities on surveys.[5]

Sexual and gender minority (SGM) youth and young adults who experience homelessness are more likely to do so because of familial rejection due to their sexual orientation or gender identity, which leads to poor health outcomes.[6,7] Once SGM youth leave their homes, they are often exposed to more victimization and discrimination than their non-SGM peers, including violence and abuse faced in homeless shelters.[3,8,9] Homeless SGM youth are also more likely than non- SGM homeless youth to experience worse physical and mental health, including depression, suicidality, substance abuse, and post-traumatic stress disorder[6,8,10-13] and to be vulnerable to human trafficking.[14-16]

While many studies have examined associations between housing status and health, most research on SGM youth has compared SGM with non-SGM youth experiencing homelessness, wherein the health disparities may not be attributable to housing but to the psychosocial burdens experienced by individuals of sexual and/or gender minority status. Few studies have delineated differences between SGM youth who have and have not experienced housing instability. Rosario et al.[11] report that that sexual minority youth with a history of homelessness are more likely than those without a history of homelessness to report subsequent psychological symptoms, including anxiety, depression, and substance abuse, even when controlling for factors such as history of sexual abuse and sexual orientation factors. Similarly, Krause et al.[5] found that sexual minority men experiencing housing instability were more likely than those who were stably housed to report a history of childhood physical abuse, previous arrests, and a lack of basic needs in childhood— all psychosocial stressors that may be associated with poor health outcomes later in life. This more nuanced portrayal of housing status assesses not only where people are living—e.g., in a homeless shelter or on the streets—but also the precarious situations of those in unstable or unsustainable living arrangements— e.g., in a halfway house or temporarily staying with friends/family— which may be a precursor to or result of the same situation that may led to homelessness.[5]

Additionally, a small set of other studies found increased prevalence of depressive symptoms, substance use, and suicidality among SGM youth who experienced homelessness or housing instability, compared with SGM youth who did not.[17-20] Our analysis adds to the existing literature by filling this gap, providing a comparison between SGM young adults who have and have not experienced housing instability.

Finally, through this analysis, we hope to redirect the perspective on the well-being of sexual minority young adults from one rooted in deficit to one rooted in resilience, a psychosocial construct defined by adversity and positive adaptation.[21-23] A majority of research on homeless in SGM youth is deficit-focused, examining mental illness and other psychosocial burdens, and a far more limited set of literature has examined the roles of resilience and other strength-based factors. None of the 21 studies in a 2017 systematic review of literature on youth homelessness and resilience specifically discussed SGM youth,[24] while only one of 14 studies in a 2019 review of homelessness among LGBTQ+ youth discussed resilience.[25] The limited extant literature suggests that SGM youth who experience homelessness

demonstrate resilience in order to thrive in their circumstances, and may rely on religion and spirituality as sources of resilience.[26-28] Thus, this work adds to the growing body of literature by incorporating *grit*, a psychological trait combining perseverance and resilience, which may mediate the relationship between housing status and mental illness.[29,30]

Drawing on data from an investigation of emerging adult sexual minority men in New York City, we examine associations between housing status and health in a diverse sample of SGM young adults in New York City.

Methods

Study design.

The data for this cross-sectional analysis were drawn from the baseline of the second wave of the P18 Cohort Study, a prospective cohort study that examines the production of the syndemic of HIV, substance use, and mental health burden in a cohort of sexual and gender minority young adults in New York City; methods have been described in detail in previous publications.[31] Briefly, recruitment for the study was conducted in two waves, beginning in 2009–2011 with a sample of participants who were age 18 or within the first quarter of their 19th birthday. Participants in the ensuing analyses were drawn from the second wave of the cohort study, which included both participants from the original cohort and new, age-matched participants recruited between 2014 and 2016. During this second wave of recruitment, participants were identified through a number of active and passive methods, including online (e.g., websites and mobile applications), in-person (e.g., community events), and referrals from other participants. Eligibility criteria for participants were: 22–23 years old, assigned male at birth, self-reported HIV negative or unknown HIV status, willing to receive testing for HIV and other STIs, and self-reported sexual activity with a male partner in the previous six months. Additional details regarding the P18 study design, recruitment, procedures, and data collection are available elsewhere.[31,32]

At baseline, this second wave of the cohort study included a racially/ethnically and socioeconomically diverse sample of 665 participants. Participants provided information on sociodemographic characteristics, mental health, and housing status via audio-computer assisted self-interview (ACASI) survey. Additionally, an Alere Determine™ rapid HIV-1/2 Ag/Ab combination test was conducted to confirm HIV serostatus. Prior to engaging in any study activity, participants provided written, informed consent. New York University's Institutional Review Board approved all P18 study procedures and materials.

Measures.

Sociodemographic characteristics.—Data regarding sociodemographic characteristics, including race/ethnicity, sexual orientation, gender identity, education, and income were assessed using survey instruments included in the ACASI computer survey. Self-reported race/ethnicity was categorized as Hispanic/Latino, White non-Hispanic, Black non-Hispanic, and other non-Hispanic, which included those who identified as Asian or Pacific Islander, American Indian or Native American, other, and mixed race. Sexual identity was measured using the seven-point Kinsey scale[33] and was dichotomized to "exclusively

homosexual" and "not exclusively homosexual," consistent with previous studies of this cohort.[34] Gender identity was ascertained by asking participants if they identified as male, female, trans female, genderqueer, or with no gender; for the purpose of this study, responses were dichotomized as "male" or "transgender." Highest level of educational attainment included junior high school diploma, high school diploma or GED, associate's degree, bachelor's degree, or graduate degree; these responses were then categorized as "high school or less" and "any college degree." Participants also reported their total annual income, and responses were categorised, consistent with previous studies of this population, as less than $5,000, $5,000 to $25,000, and more than $25,000.[34]

Housing status.—Participants were asked two questions to assess their housing status during the past six months.[35] Homelessness was measured by asking participants if, in the past six months, they had slept in any of the following places: the street, a park, abandoned building or automobile, public place (e.g., subway or bus station), shelter, limited stay/single room occupancy (SRO), and/or a welfare motel/hotel. Housing instability was measured by asking if, in the past six months, participants had lived in any of the following places: temporary or transitional housing, jail, drug treatment facility, halfway house, and/or temporarily living with friends/family. Based on their responses to these items, participants were categorized as housed, homeless, unstably housed, or both homeless and unstably housed in the past six months.

Mental health.—Mental health variables assessed included depression, anxiety, and post-traumatic stress. Depression was measured using the Beck Depression Inventory (BDI), a 21-item scale that measures symptoms and severity of depression.[36] Based on clinical guidelines,[37] BDI scores were then categorized as "none or minimal," "mild to moderate," "moderate to severe," and "severe depression," with the final three categories collapsed for analytic purposes. Anxiety was measured using the Beck Anxiety Inventory (BAI), a 21-item scale which measures symptoms and severity of anxiety.[38] Based on clinical guidelines, [39] BAI scores were then categorized as "none or minimal," "mild to moderate," "moderate to severe," and "severe anxiety," with the final three categories collapsed for analytic purposes. The PTSD (post-traumatic stress disorder) Checklist (PCL), a 17-item self-report scale, was used to assess post-traumatic stress disorder.[40] Based on DSM-IV criteria and recommendations from the Mental Illness Research, Education and Clinical Centers (MIRECC) of the U.S. Department of Veterans Affairs, PCL scores were categorized as "symptomatic" and "not symptomatic."[41]

General health.—Self-rated general health was assessed by asking participants to rate their health as excellent, very good, good, fair, or poor. For analytic purposes, the variable was dichotomised to "less than very good" and "very good or excellent" health, based on response rates for each level of the variable.

Other psychosocial covariates.—Additionally, grit and gay-related stigma were assessed as potential psychosocial covariates in the relationship between health and housing status. Grit was measured using the eight-item Short Grit Scale (Grit-S), and item scores were summed to create a single, linear variable.[42] A higher score is indicative of being

'extremely gritty' while the lowest score suggests one is 'not at all gritty.'[42]{Duckworth, 2009 #416} Gay-related stigma was adapted from a revised version of Berger's stigma scale.[43,44] The adapted gay-related stigma scale used five items—the personalized stigma and public attitudes subscales—to assess participants' experiences with others' reactions to their coming out and how they think LGBT people are perceived. The five items were summed to create a single, linear variable with higher scores indicating higher levels of gay-related stigma.

Analytic plan.

Data analysis was conducted using SPSS (IBM SPSS Statistics, Version 25.0). Univariate analyses were conducted to describe sample characteristics, experiences of housing instability, health, and other covariates. Bivariate analyses were undertaken using chi-squared tests of independence to determine associations of both sociodemographic factors and health variables with housing status (housed, homeless, unstably housed, both). Finally, separate binary logistic regression models were constructed to explain the combined effects of housing status and sociodemographic factors in associations with mental and general health.

Results

Sample characteristics.

A total of $n = 665$ participants with complete ACASI data were included in this analysis (Table 1). The average age of the sample was 22.98 years old (SD = 0.64). In terms of race and ethnicity, 32.2% ($n = 214$) were Hispanic/Latino, 27.4% ($n = 182$) were Black non-Hispanic, 25.1% ($n = 167$) were White non-Hispanic, and 15.3% ($n = 102$) were Asian/Pacific Islander, Native American, mixed, or another race. The majority of participants were born in the U.S. (84.2%, $n = 560$), identified as male (93.4%, $n = 621$), and tested HIV-negative (94.7%, $n = 630$). About half the sample had completed an associate's, bachelor's, or graduate degree (52.0%, $n = 346$) and about half identified as exclusively homosexual (50.1%, $n = 333$). About a third of the sample (32.9%, $n = 219$) had a total annual income of less than $5,000, 41.2% ($n = 274$) reported $5,000–24,999, and 21.1% (n = 140) reported $25,000 or greater.

The majority of participants reported experiencing neither homelessness nor unstable housing (75.9%, $n = 505$). In the previous six months, 4.2% ($n = 28$) reported only homelessness, 11.3% ($n = 75$) reported only unstable housing, and 8.6% ($n = 57$) reported both homelessness and unstable housing.

Most participants did not report clinically significant levels of depression (63.6%, 423), anxiety (69.8%, $n = 464$), or PTSD (89.6%, $n = 596$). About a quarter of participants rated their health as less than very good (26.2%, $n = 174$), with the rest reporting their health as very good or excellent (73.4%, $n = 488$). The average grit score was 3.42 (SD = 0.66, range: 1–5) indicating moderately high levels of grittiness in the sample. The average score on the gay-related stigma scale was 10.38 (SD = 3.27, range: 5–20), which demonstrates moderate experiences of perceived stigma based on one's sexual orientation.

Bivariate analysis.

Table 1 summarizes the relationships between housing status and sociodemographic and health factors. Housing status was significantly associated with gender ($p < .001$), education ($p < .001$), income ($p < .x001$), depression ($p < .05$), self-rated health ($p < .05$), and gay-related stigma ($p < .001$). Those who were transgender, were less educated, were lower-income, had higher BDI scores, had poorer self-rated health, and had higher stigma scores were more likely than those in their respective comparison groups to report homelessness, unstable housing, or both.

Multivariable modeling.

Unadjusted binary logistic regression models were constructed for depression, anxiety, PTSD, and self-rated health (Table 2). All four health variables were significantly associated with each other, all at the $p < .001$ level, such that those with depression were more likely to be anxious (OR = 12.27, 95% CI: 8.17–18.42), symptomatic for PTSD (OR = 18.16, 95% CI: 8.80–37.48), and report poorer health (OR = 3.96, 95% CI: 2.73–5.74). Those with anxiety were also more likely to be symptomatic for PTSD (OR = 9.50, 95% CI: 5.37–16.82) and report poorer health (OR = 3.15, 95% CI: 2.18–5.57). Those who met criteria for PTSD were also more likely to rate their general health more poorly (OR = 2.57, 95% CI: 1.54–4.28). Additionally, increased grit was significantly associated with lower odds of depression (OR = 0.31, 95% CI: 0.23–0.41), anxiety (OR = 0.33, 95% CI: 0.24–0.44), PTSD (OR = 0.39, 95% CI: 0.26–0.58), and poorer self-rated health (OR = 0.50, 95% CI: 0.38–0.66), while higher stigma scores were associated with increased odds of depression (OR = 1.09, 95% CI: 1.04–1.15), anxiety (OR = 1.08, 95% CI: 1.02–1.13), and PTSD (OR = 1.18, 95% CI: 1.02–1.13).

More severe depression was significantly independently associated with greater odds of experiencing both homelessness and unstable housing in the past six months (OR = 1.83, 95% CI: 1.03–3.24); identifying as a race other than White, Hispanic/Latino, or Black (OR = 1.78, 95% CI: 1.06–3.00); and being transgender (OR = 2.34, 95% CI: 1.23–4.45). Depression was also associated with lower odds of having any college degree (OR = 0.67, 95% CI: 0.48–0.94), an annual income of $25,000 or greater (OR = 0.58, 95% CI: 0.36–0.93), and an exclusively homosexual identity (OR = 0.63, 95% CI: 0.45–0.87). Anxiety was significantly associated with lower odds of identifying as Black compared with White (OR = 0.53, 95% CI: 0.32–0.87) and exclusively homosexual identity (OR = 0.61, 95% CI: 0.43–0.86), as well as greater odds of being transgender (OR = 3.01, 95% CI: 1.62–5.59), but was not associated with housing status.

Adjusted binary logistic regression analyses were constructed to explain the combined effects of housing status and covariates on depression, PTSD, and self-rated health (Table 3). When adjusting for significant covariates identified in unadjusted analyses, depression was no longer associated with housing, but was significantly associated with annual income ($25,000+ versus <$5,000; AOR = 0.51, 95% CI: 0.27–0.98), anxiety (AOR = 6.61, 95% CI: 4.07–10.72), PTSD (AOR = 8.07, 95% CI: 3.36–19.37), poorer self-rated health (AOR = 2.66, 95% CI: 1.63–4.36), and decreased grit (AOR = 0.48, 95% CI: 0.34–0.69). Post-traumatic stress disorder (PTSD) symptomatology was also no longer associated with

housing in the adjusted model, but was associated with dichotomized sexual identity (AOR = 0.47, 95% CI: 0.25–0.91), depression (AOR = 8.46, 95% CI: 3.53–20.28), and anxiety (AOR = 3.42, 95% CI: 1.68–6.97). Self-rated health was significantly associated with housing status, such that those with poorer self-rated health were twice as likely to report both homelessness and housing instability (AOR = 2.01, 95% CI: 1.02–3.97), and was also associated with depression (AOR = 2.45, 95% CI: 1.54–3.91), anxiety (AOR = 1.66, 95% CI: 1.04–2.65), and decreased grit (AOR = 68, 95% CI: 0.49–0.92).

Discussion

The findings of this study indicate that subgroups of sexual and gender minority (SGM) young adults experience disparities in housing status, which may be associated with disparate health outcomes. Those who identified as transgender, had a high school education or less, had lower annual incomes, met criteria for mild, moderate, or severe depression, rated their general health more poorly, and experienced greater levels of gay-related stigma were more likely than those in their respective comparison groups to report experiencing homelessness, unstable housing, or both forms of housing instability in the previous six months. These findings align with a syndemic model, wherein disparities such as mental health, physical health, and social determinants of health are viewed as co-occurring, synergistic, and mutually reinforcing.[22,45]

We also detected disparities in mental and overall physical health based on key covariates. Transgender participants, while only constituting 6.6% of the sample, were significantly more likely than male participants to report depression, anxiety, PTSD, and poorer general health. This finding aligns with numerous investigations that indicate that gender minority individuals experience heightened mental health challenges.[46-48] While our study did not have a large enough proportion of transgender participants to investigate this finding in more detail, this relationship merits further investigation, particularly as it relates to housing instability, which may further increase risk for poor physical and mental health. Depression was associated with lower educational attainment and lower income, and PTSD was significantly more common among Hispanic/Latino participants and those who identified as mixed or another race. Racial and ethnic minorities also have been previously shown to experience heightened health disparities.[49-51] Those who identified as exclusively homosexual had significantly lower odds of meeting criteria for depression, anxiety, and PTSD, compared with those who were not exclusively homosexual. Halkitis[21] documents that sexual identity disclosure and negotiation ultimately protect the health of sexual minority men, and thus this finding aligns with this understanding.

An increase in grit scores was associated with decreased odds of reporting poorer health and meeting criteria for any of the three mental health factors and supports the protective effects of resilience.[52,53] This has key implications for clinical care and research, as it points to the ways in which grit and other resilience-related constructs may improve health and reduce the negative health effects of adverse experiences. Meanwhile, increased gay-related stigma was associated with increased odds of meeting criteria for depression, anxiety, and PTSD. The role of stigma in creating health burdens for gay men has long been documented.[54] However, stigma was not a significant covariate in the associations between housing and

health, particularly when accounting for grit and other mental health symptoms, suggesting that resilience may act as a buffer in this relationship as well.

Controlling for variables associated with depression and PTSD in bivariate analyses explained the relationships between those health factors and housing status in our regression models, such that there were no longer mental health disparities by housing status. Housing status remained significantly associated with self-rated health, however, such that those who experienced both homelessness and housing instability in the past six months were twice as likely as stably housed participants to rate their general health poorly.

In considering these findings, it emerges that housing instability among this sample is not associated with depression, anxiety, or PTSD when controlling for stigma and grit. This suggests that discrimination and stigma experienced by SGM and racial/ethnic minority individuals may lead to poorer mental health states, as controlling for these factors explains the significant relationship between housing and mental health, and that the impact may be buffered by the positive effects of grit. Thus, while housing instability may be a manifestation of these mental health burdens, it may also be a result of familial and societal discrimination and stigma—assessment of these bidirectional relationships is beyond the scope of the present study. Additionally, housing instability and homelessness significantly increased the risk of participants' poorer self-rating of general health more broadly. These results align with findings from other studies examining self-rated health and housing instability in people living with HIV/AIDS,[55] sex workers,[56] and non-SGM identified adults entering supportive housing,[57] suggesting these perceptions can occur in numerous circumstances.

In considering this study in the context of previous literature, it is noteworthy that this study examined a large sample of sexual and gender minority young adults, and compared subgroups of housed versus unstably housed and homeless, whereas much of the previous literature has looked at samples of unstably housed and homeless people, and compared subgroups of sexual and gender minority versus non-SGM individuals. When comparing subgroups of SGM versus non-SGM in a larger sample of homeless/unstably housed people, previous findings have consistently shown significantly increased levels of mental health conditions such as depression, anxiety and PTSD among the SGM subgroups.[8,11] When comparing subgroups of those who reported homelessness and/or unstable housing versus those with stable housing within a larger group of SGM, there is no significant difference in prevalence of increased psychological disorders like anxiety, depression and PTSD.

The inconsistency between these two frameworks suggests a need to further investigate the relationships between housing and health, to better explain differences in mental and physical health among SGM individuals of different housing statuses. When looking at a large sample of homeless and unstably housed individuals and comparing mental health symptomatology among SGM versus non-SGM, it is difficult to know if the conditions are a attributable to homelessness or to SGM status. Because our study found no significant difference among groups when comparing subgroups of SGM young adults with different housing status histories, it is possible that the differences that preious studies have found are attributable to SGM status rather than homelessness. If no difference in mental health exists

because of housing status, it is also possible that there is something about SGM status that may be a protective factor against psychological disorders among those who are unstably housed or homeless. Resilience and/or grit may act as protective factors among SGM people, who have already faced adversity in many areas of their lives. This hypothesis is supported by our finding that controlling for grit was a key part in the lack of association between mental health symptomatology and housing, and aligns with the limited literature on the role of resilience in buffering the negative effects of homelessness for SGM populations.[26-28] Further research is needed to better understand if and how resilience and/or grit operates among SGM populations who experience different forms of housing instability.

This study is not without limitations. It is important to note that this study took place in New York City, in which there are numerous available resources for those who are experiencing homelessness and unstable housing. Further, in New York City, there are many resources specifically available for SGM people who are homeless or unstably housed. Similar resources are generally not available in other parts of the country, meaning that the findings of this study may not be generalizable to both non-urban settings as well as urban settings that are not New York City. It is also important to consider the impact of social desirability bias. Although the use of ACASI aims to mitigate these effects,[58] individuals may not have felt comfortable disclosing homelessness, housing instability, and symptoms of psychological distress, as there is still significant stigma around these topics. Another limitation may be the Aidala measure itself, which may not capture certain dimensions of housing instability among this particular subgroup of emerging adults, such as college students who are sleeping in libraries or student centers. A housing instability measure that has a greater range of age-specific options for emerging adults may be a useful focus for future research on housing instability among these groups. Finally, the cross-sectional nature of these data may limit the ability to determine causality in relationship to housing status and mental health. A longitudinal analysis after the completion of the second wave of the P18 Cohort Study will allow for further determination of the ways in which a change in housing status might affect mental health over time.

Further research is needed to better understand the relationship between housing and mental health among communities of SGM. This research may address the nature of housing as a pathway to intervene in improving health generally. From a research perspective, this may mean integrating housing into the assessment of social determinants of health generally, as well as the implementation of longitudinal research designs that assess changes in mental health state in relationship to changes in housing status. From a clinical perspective, it is important to consider the degree to which health care providers, specifically mental health care providers, are assessing housing status and providing necessary referrals that might address and ultimately decrease housing instability, particularly among SGM. This integration of housing into both primary and mental health care may help increase access to social services and case management, which may ultimately decrease housing instability and improve health outcomes.[59] Finally, researchers and clinicians must consider how to incorporate a strength-based perspective (e.g., resilience and grit) into conversations around the intersectionality of health disparities. For too long, SGM in particular have been left out of these conversations, so integrating positive psychology principles into clinical training, research, and practice is a critical step in fostering positive social institutions and bolstering

character strengths, including grit and perseverance.[60] Furthermore, understanding how SGM individuals develop, harness, and grow these principles throughout adolescence and into emerging adulthood may help educators and practitioners create and tailor appropriate interventions and programs to address syndemic health conditions and intersectional health disparities.

Acknowledgments

Funding. Research reported in this publication was supported by the National Institute on Drug Abuse of the National Institutes of Health under award #s R01DA025537 and 2R01DA025537. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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Table 1.

BASELINE SAMPLE CHARACTERISTICS AND ASSOCIATIONS WITH HOUSING STATUS AMONG SEXUAL MINORITY YOUNG ADULTS IN NYC (*N* = 665)

		Housing status past six months, % (*n*)				
	% (*n*)	Housed	Homeless	Unstably housed	Both	p
		75.9 (505)	4.2 (28)	11.3 (75)	8.6 (57)	
Age[a]	22.98 (0.64)	23.00 (0.64)	22.72 (0.65)	23.03 (0.68)	22.86 (0.56)	.055
Race						
White non-Hispanic	25.1 (167)	83.8 (140)	0.6 (1)	11.4 (19)	4.2 (7)	
Hispanic/Latino	32.2 (214)	74.3 (159)	4.7 (10)	10.7 (23)	10.3 (22)	
Black non-Hispanic	27.4 (182)	71.4 (130)	6.0 (11)	11.5 (21)	11.0 (20)	
Other non-Hispanic	15.3 (102)	74.5 (76)	5.9 (6)	11.8 (12)	7.8 (8)	.085
Gender						
Male	93.4 (621)	77.3 (480)	4.2 (26)	11.3 (70)	7.2 (45)	
Transgender	6.6 (44)	56.8 (25)	4.5 (2)	11.4 (5)	27.3 (12)	<.001
Education status						
High school/GED or less	47.8 (318)	70.4 (224)	6.0 (1 9)	11.0 (35)	12.6 (40)	
Any college degree	52.0 (346)	80.9 (280)	2.6 (9)	11.6 (40)	4.9 (17)	<.001
Total annual income						
< $5,000	32.9 (219)	67.6 (148)	5.9 (1 3)	11.9 (26)	14.6 (33)	
$5,000–24,999	41.2 (274)	75.9 (208)	4.7 (1 3)	12.0 (33)	7.3 (20)	
$25,000+	21.1 (140)	89.3 (125)	0.7 (1)	7.1 (10)	2.9 (4)	<.001
Country of origin						
Born in the US	84.2 (560)	76.8 (430)	3.9 (22)	11.3 (63)	8.0 (45)	
Not born in the US	15.6 (104)	72.1 (75)	5.8 (6)	11.5 (12)	10.6 (11)	.652
HIV status						
Negative	94.7 (630)	76.3 (481)	3.8 (24)	11.4 (72)	8.4 (53)	
Positive	5.0 (33)	69.7 (23)	12.1 (4)	6.1 (2)	12.1 (4)	.085
Sexual identity						
Not exclusively homosexual	49.9 (332)	72.0 (239)	5.1 (17)	12.0 (40)	10.8 (36)	
Exclusively homosexual	50.1 (333)	79.9 (266)	3.3 (11)	10.5 (35)	6.3 (21)	.072
Depression (BDI)						
None or minimal	63.6 (423)	79.4 (336)	3.8 (16)	9.7 (41)	7.1 (30)	
Mild, moderate, or severe	31.9 (212)	69.3 (147)	5.7 (12)	1 3.7 (29)	11.3 (24)	.045
Anxiety (BAI)						
None or minimal	69.8 (464)	78.7 (365)	4.1 (1 9)	10.1 (47)	7.1 (33)	
Mild, moderate, or severe	27.7 (184)	70.7 (130)	4.3 (8)	1 3.6 (25)	11.4 (21)	.140
PTSD (PCL)						
Non- symptomatic	89.6 (596)	77.2 (460)	3.7 (22)	10.7 (64)	8.4 (50)	
Symptomatic	10.4 (69)	65.2 (45)	8.7 (6)	15.9 (11)	10.1 (7)	.088
Self-rated general health						

		Housing status past six months, % (*n*)				
	% (*n*)	**Housed**	**Homeless**	**Unstably housed**	**Both**	**p**
Very good or excellent	73.4 (488)	78.3 (382)	4.5 (22)	10.5 (51)	6.8 (33)	
Less than very good	26.2 (174)	70.1 (122)	3.4 (6)	13.8 (24)	12.6 (22)	.045
Grit-S[a]	3.42 (0.66)	3.42 (0.67)	3.43 (0.52)	3.47 (0.67)	3.37 (0.67)	.842
Gay-related stigma[a]	10.38 (3.27)	10.03 (3.14)	12.93 (3.52)	10.31 (2.89)	12.52 (3.47)	<.001

Notes

[a]Descriptive statistics reported as mean (standard deviation, range).

GED= General Education Diploma

BDI= Beck Depression Inventory

BAI= Beck Anxiety Inventory

PCL= PTSD (post-traumatic stress disorder) Checklist

Table 2.

UNADJUSTED BINARY LOGISTIC REGRESSIONS PREDICTING MENTAL AND GENERAL HEALTH

	Depression OR (95% CI)	Anxiety OR (95% CI)	PTSD OR (95% CI)	Self-rated health OR (95% CI)
Housing status				
Housed	1.00	1.00	1.00	1.00
Homeless	1.71 (0.79–3.71)	1.18 (0.51–2.77)	2.79 (1.08–7.23) *	0.85 (0.34–2.15)
Unstably housed	1.62 (0.97–2.70)	1.49 (0.88–2.52)	1.76 (0.86–3.57)	1.47 (0.87–2.49)
Both	1.83 (1.03–3.24) *	1.79 (1.00–3.20)	1.43 (0.61–3.34)	2.09 (1.17–3.72) *
Race				
White non-Hispanic	1.00	1.00	1.00	1.00
Hispanic/Latino	1.22 (0.78–.89)	0.95 (0.61–1.49)	2.87 (1.27–6.50) *	1.09 (0.69–1.71)
Black non-Hispanic	0.79 (0.50–1.27)	0.53 (0.32–0.87) *	2.18 (0.92–5.16)	0.73 (0.45–1.20)
Other non-Hispanic	1.78 (1.06–3.00) *	1.05 (0.62–1.79)	3.70 (1.52–8.99) **	1.07 (0.62–1.85)
Gender				
Male	1.00	1.00	1.00	1.00
Transgender	2.34 (1.23–4.45) **	3.01 (1.62–5.59) ***	2.80 (1.32–5.96) **	2.05 (1.09–3.84) *
Education status				
High school/GED or less	1.00	1.00	1.00	1.00
Any college degree	0.67 (0.48–0.94) *	0.93 (0.66–1.31)	0.48 (0.29–0.81) **	0.94 (0.67–1.34)
Total annual income				
< S5.000	1.00	1.00	1.00	1.00
55,000–24,999	0.90 (0.62–1.31)	1.25 (0.83–1.86)	0.72 (0.41–1.25)	0.89 (0.59–1.33)
525,000+	0.58 (0.36–0.93) *	1.22 (0.76–1.96)	0.56 (0.27–1.16)	0.80 (0.49–1.31)
Country of origin				
Born in the US	1.00	1.00	1.00	1.00
Not born in the US	0.99 (0.63–1.55)	1.13 (0.70–1.84)	0.87 (0.45–1.68)	0.91 (0.57–1.45)
HIV status				
Negative	1.00	1.00	1.00	1.00
Positive	0.57 (0.24–1.33)	0.43 (0.16–1.14)	0.54 (0.13–2.32)	1.05 (0.48–2.30)

	Depression OR (95% CI)	Anxiety OR (95% CI)	PTSD OR (95% CI)	Self-rated health OR (95% CI)
Sexual identity				
Not exclusively homosexual	1.00	1.00	1.00	1.00
Exclusively homosexual	0.63 (0.45–0.87) **	0.61 (0.43–0.86) **	0.37 (0.21–0.64) ***	0.87 (0.62–1.24)
Anxiety (BAI)				
None or minimal	1.00	—	—	—
Mild, moderate, or severe	12.27 (8.17–18.42) ***	—	—	—
PTSD				
Not symptomatic	1.00	1.00	—	—
Symptomatic	18.16 (8.80–37.48) ***	9.50 (5.37–16.82) ***	—	—
Self-rated general health				
Very good or excellent	1.00	1.00	1.00	—
Less than very good	3.96 (2.73–5.74) ***	3.15 (2.18–5.57) ***	2.57 (1.54–4.28) ***	—
Grit-S	0.31 (0.23–0.41) ***	0.33 (0.24–0.44) ***	0.39 (0.26–0.58) ***	0.50 (0.38–0.66) ***
Gay-related stigma	1.09 (1.04–1.15) ***	1.08 (1.02–1.13) **	1.18 (1.09–1.27) ***	1.03 (0.99–1.10)

Notes

* $p < .05$

** $p < .01$

*** $p < .001$

GED= General Education Diploma

BAI= Beck Anxiety Inventory

PTSD= post-traumatic stress disorder

Table 3.

ADJUSTED BINARY LOGISTIC REGRESSIONS EXPLAIN ASSOCIATIONS BETWEEN HOUSING STATUS AND HEALTH

	Depression AOR (95% CI)	PTSD AOR (95% CI)	Self-rated health AOR (95% CI)
Housing status			
Housed	1.00	1.00	1.00
Homeless	1.38 (0.49–3.85)	1.59 (0.48–5.29)	0.84 (0.31–2.26)
Unstably housed	1.47 (0.72–2.99)	1.29 (0.53–3.13)	1.52 (0.85–2.73)
Both	0.94 (0.40–2.20)	0.48 (0.16–1.47)	2.01 (1.02–3.97) *
Race			
White non-Hispanic	1.00	1.00	—
Hispanic/Latino	1.05 (0.57–1.93)	2.49 (0.95–6.56)	—
Black non-Hispanic	0.76 (0.39–1.45)	2.96 (1.05–8.40) *	—
Other non-Hispanic	1.62 (0.81–3.27)	2.93 (1.03–8.34) *	—
Gender			
Male	1.00	1.00	1.00
Transgender	0.75 (0.28–2.03)	1.67 (0.60–4.64)	1.31 (0.60–2.86)
Education status			
High school/GED or less	1.00	1.00	—
Any college degree	0.65 (0.41–1.05)	0.64 (0.34–1.20)	—
Total annual income			
< $5,000	1.00	—	—
$5,000–24,999	0.88 (0.53–1.46)	—	—
$25,000+	0.51 (0.27–0.98) *	—	—
Sexual identity			
Not exclusively homosexual	1.00	1.00	—
Exclusively homosexual	0.99 (0.62–1.55)	0.47 (0.25–0.91) *	—
Depression (BDI)			
None or minimal	—	1.00	1.00
Mild, moderate, or severe	—	8.46 (3.53–20.28) ***	2.45 (1.54–3.91) ***
Anxiety (BAI)			
None or minimal	1.00	1.00	1.00
Mild, moderate, or severe	6.61 (4.07–10.72) ***	3.42 (1.68–6.97) **	1.66 (1.04–2.65) *
PTSD			
Not symptomatic	1.00	—	1.00
Symptomatic	8.07 (3.36–19.37) ***	—	0.99 (0.53–1.83)
Self-rated general health			
Very good or excellent	1.00	1.00	—
Less than very good	2.66 (1.63–4.36) ***	1.00 (0.53–1.91)	—
Grit-S	0.48 (0.34–0.69) ***	0.74 (0.45–1.22)	0.68 (0.49–0.92) *

	Depression AOR (95% CI)	PTSD AOR (95% CI)	Self-rated health AOR (95% CI)
Gay-related stigma	1.05 (0.97–1.13)	1.09 (0.98–1.20)	0.99 (0.93–1.05)

Notes

* $p < .05$

** $p < .01$

*** $p < .001$

GED= General Education Diploma

BDI= Beck Depression Inventory

BAI= Beck Anxiety Inventory

PTSD= post-traumatic stress disorder