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Stigma, Mental Health, and Health care Use Among Rural Sexual and Gender Minority Individuals

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Abstract

Sexual and gender minorities (SGM) frequently experience depression and health care-related stigma. Health care satisfaction is important for seeking care, but little is known about SGM health care satisfaction, and especially as it relates to depression among rural SGM. From May 25 to July 2, 2021, we surveyed rural Illinois (IL) individuals aged ≥18 years on the topics of demographics, depression, health care satisfaction, past health care experiences, internalized stigma, and victimization. Among the 398 respondents, the gender identity distribution included cisgender males and females (171 and 203, respectively) and transgender males and females (8 and 7, respectively), while sexual orientation included heterosexuals (114), gay/lesbians (143), and other orientations (141). Analyses were conducted with respect to both identity and orientation (and their interaction). In univariate analysis, transgender individuals were more likely than cisgender to screen positive for depression and less likely to report feeling accepted by their medical provider. Compared to heterosexual respondents, gay/lesbians and other orientations were more likely to screen positive for depression. In logistic regression, factors associated with increased risk of depression included nonheterosexual orientation and past poor health care experiences. In linear regression, factors most commonly associated with the seven satisfaction subscales include: sexual orientation, past poor experiences, and employment. There were significant differences in depression across both sexual orientation and gender identity, and in health care satisfaction by sexual orientation. Rural SGMs are more vulnerable to depression and less likely to report satisfactory care. As health care engagement is critical for screening and care adherence, engaging rural SGM in a routine and satisfactory fashion is needed.

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Keywords

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Individuals with a minoritized identity face an array of health disparities compared to their majority peers due to the increased burden of stress caused by stigma and discrimination (Bryant et al., 2022; Diaz et al., 2001). These tenets of minority stress theory also hold for sexual and gender minority (SGM) individuals, who experience bi-/homophobia, transphobia, and other forms of victimization due to their identity, appearance, and expression (Meyer, 1995). Individuals who have a nonheterosexual orientation and/or noncisgender identity (collectively referred to as SGMs) face distinct health disparities (Beach et al., 2018; Cathcart-Rake, 2018; Conron et al., 2010; Everett & Mollborn, 2013; Graham et al., 2011; Grundy et al., 2021; Lund & Burgess, 2021; Operario et al., 2015; Talley et al., 2019). Furthermore, disparities may be substantially nuanced, as both sexual orientation and gender identification may be complex constructs at the individual level and evolve over the life course. The SGM community, moreover, is not monolithic, and there are substantial differences in experiences and outcomes based on one's sexual orientation and gender identity. For instance, gay, bisexual, and other men who have sex with men (sexual minority men; SMMs) are at heightened risk for HIV acquisition; bisexual populations face monosexism and are often excluded from both heterosexual and gay communities; and transgender individuals frequently experience challenges in accessing hormone replacement therapy and constantly face gender dysphoria due to misgendering (Ashley, 2019; Centers for Disease Control and Prevention, 2019; Dodge et al., 2016; Rentería et al., 2022). These experiences are only magnified for individuals who are the intersection of multiple minority identities (Bowleg, 2008, 2012, 2020; Bowleg et al., 2003, 2013; Lee-Foon et al., 2022).

Stigma itself is a complex process, which may be enacted, internalized, and anticipated (Earnshaw et al., 2013; Goffman, 1963; Link & Phelan, 2001). Goffman et al. (1963) originally characterized stigma as the link between an attribute and a stereotype that "marks" the individual as "tainted and discounted." Link & Phelan (2001) expanded on Goffman's conceptualization to develop an understanding of how stigma may be enacted and anticipated, and how such discriminatory othering impacts the ways in which people can lead their lives). According to Link et al., the stigma process involves interconnected components: labeling; linking labels to negative stereotypes; a separation by creating an "us versus them"; and then ultimately a loss of status and discrimination. Labeling socially relevant characteristics (e.g., skin color, sexual orientation, gender identity) and attaching negative stereotypes to certain categories of people creates an us/them dichotomy in which those who are negatively labeled are seen as inherently different from those who are not so labeled. As socially salient differences are negatively labeled, those within the bounds of these socially defined categories become subject to separation, status loss, and discrimination.

The minority stress model and associated stigma is a useful framework to help explain disparities in health outcomes among SGM individuals. These stigmatizing experiences can negatively affect both mental and physical health (Castro et al., 2019; Flentje et al., 2022;

Hatzenbuehler et al., 2014; Layland et al., 2020). Adverse mental health outcomes are often observed resulting from stressful situations caused by stigma, and SGM individuals are more likely to experience substance (ab)use, depression, psychiatric disorders, self-harm, and suicide (Baptiste-Roberts et al., 2017; Healthy People, 2020; McLaughlin et al., 2010; Meyer, 2003; Pachankis et al., 2020; Remafedi et al., 1998). However, as described, SGM individuals are a heterogeneous population, as they also have other characteristics and identities. For example, SGM may differ in race and ethnicity, sexual orientation, and gender expression, to name a few. As such, there are potential differences in stigma experiences, and resulting health outcomes, across varying sexual and gender identities, and their intersections. For example, individuals who are bisexual experience increased rates of depression compared to gay and/or lesbian and heterosexual individuals, sexual minority individuals are more likely to attempt suicide than heterosexuals, and transgender identity is significantly associated with depression symptoms and suicide attempt (Ramchand et al., 2022; Ross et al., 2018; Su et al., 2016). In addition, SGM individuals have increased rates of pain-related impairment, troubles with sleep, diabetes, and cancer (Flentje et al., 2022). While many adverse outcomes can be addressed within the context of primary medical care, SGM individuals often experience disparities in accessing high-quality and culturally affirming health care. Although sexual minority individuals have low uninsurance rates similar to heterosexual individuals (e.g., 12.7% vs. 11.4%), there are many differences within sexual minority groups and stark differences are seen between transgender and cisgender rates (Bosworth et al., 2021; Hsieh & Ruther, 2017). Furthermore, National Health Interview Survey data indicate that sexual minority individuals are more likely to delay care, less likely to have a usual source of care, and more likely to be concerned about medical bills than their heterosexual peers (Bosworth et al., 2021; Kachen & Pharr, 2020). Finally, and specific to the rural environment, a study of health care experiences among rural men who have sex with men (MSM) in Oklahoma found that care is influenced by religious conservative ideologies, clinician knowledge of SGM health issues (Giano, Hubach, et al., 2020).

In addition to the direct influences of stigma on mental and physical conditions, it also impacts the seeking and obtaining of health care by SGM. While increased health-seeking behavior is associated with better health outcomes, individuals who identify as SGM often experience stigmatization in the health care setting (Hooper, 2016; Lin & Tsang, 2020; Phelan et al., 2015; Whitehead et al., 2016). This contributes to lesser motivation to seek care, and greater delays in receiving care (Bosworth et al., 2021; Kachen & Pharr, 2020; Tadele & Amde, 2019). Even medical care engagement and receipt may be suboptimal, as SGMs often have concerns regarding confidentiality and acceptance, resulting in underreporting of illness and nondisclosure of risk behaviors (Bharadwaj et al., 2017; Picco et al., 2016; Tadele & Amde, 2019). Other indications of suboptimal care include findings that SGM may be less likely to receive multiple aspects of preventive care, such as screening for sexually transmitted infection (STI), cancer, and depression (Jenkins et al., 2021; Lee-Foon et al., 2022; Sha & Aleshire, 2021). Stigma thus threatens essential health care processes, such as diagnostics, treatment, and successful recovery. Addressing health care-related stigma may therefore improve the quality of SGM health care (Nyblade et al., 2019; Picco et al., 2016).

An understudied area within minority stress theory and stigma is health care patient satisfaction. Increased satisfaction is associated with lower odds of emergency department visits and greater adherence to physician recommendations (Fenton et al., 2012; Zolnierek & DiMatteo, 2009). Furthermore, addressing SGM health care satisfaction within the minority stress model has been described by Baptiste-Roberts et al. (2017); Bleich et al. (2009), and multiple care aspects relating to satisfaction (patient experience, patient expectations, and type of care) are amenable to intervention at the local/clinic level and among individual patients and clinicians. In this light, patient's satisfaction may be a critical factor in increasing: SGM patient engagement with primary care; advocacy for routine and preventive services; and care adherence and retention to address identified issues. While it has been documented that SGMs are more likely to delay care than their non-SGM peers, there has been little examination of SGM health care satisfaction (Bosworth et al., 2021; Fish et al., 2021). An analysis of 2014 Behavioral Risk Factor Surveillance System (BRFSS) data, found that lesbian, gay, and bisexual (LGB) orientation was associated with lower health care satisfaction (Blosnich, 2017). This has been complemented by more recent work reporting similar dissatisfaction with health care, lesser health care access, and increased rates of health care delay (Fish et al., 2021; Tabaac et al., 2020). Tabaac et al. (2020) specifically found that SGM care delay was at least partially associated with past poor health care experiences. Though unlikely to be a panacea, methods to increase SGM health care satisfaction may also address health care-related stigma and increase care access and use.

While the data to this point have discussed SGM stigma, health outcomes, and health care engagement in general terms, the focus of our work is in rural areas. The importance of addressing rural SGM health and health care is high, as SGMs are estimated to comprise 3%–5% of the rural population (2.9–3.8 million individuals) (Movement Advancement Project [MAP], 2019). As may be intuited, there are substantial differences between rural communities and their urban/metropolitan peers. For example, rural SGMs are less likely to have explicit nondiscrimination protections and are more likely to live in areas with religious exemption laws—both of which may impact aspects of stigma and access to medical and social services (MAP, 2019). SGM-associated health care disparities may also be compounded as access in rural settings is notoriously low, with one study reporting that 26% of rural residents had not received needed health care in the past few years (NPR et al., 2019). Furthermore, though ~19% of the U.S. population is rural, less than 12% of primary care physicians work in rural areas, and the majority of rural counties are primary care health professional shortage areas (Agency for Health care Research and Quality, 2018; AAMC, 2022; Rural Health Information Hub, 2019).

SGM living in rural areas may be especially impacted by stigma and minority stress. Past research has demonstrated that stigmatizing experiences in rural spaces are often more intense due to the small town feel and lesser inability to retain anonymity (Ezell et al., 2021; Walters et al., 2021). Specific to SGM stigma, research demonstrates that rural spaces have harsher social environments, and if a person reveals their SGM identity, they may experience higher levels of rejection than their urban counterparts (Giano, Currin, et al., 2022; Swank et al., 2012). In the health care environment, while disclosure of SGM identity may lead to better care and outcomes, many SGMs are hesitant to do so (Brooks et al., 2018). This may be exemplified by a study in rural Oklahoma reporting that ". . . the intersection of medical

care and faith within a clinic setting more often than not led to experiences where their sexual orientation was not valued and instead was perceived as problematic (Hubach et al., 2019).” While many health care-related aspects of stigma may be effectively addressed via training and social interventions, they are infrequently implemented on large scales (Grundy et al., 2021).

There is relatively little know about health and health care utilization among rural SGM. In a general sense, rural SGM individuals may be more susceptible to some health conditions that are readily identified and addressed through routine screening (e.g., depression, cancer), but such individuals must access health care to be screened and retained in care to ensure adherence and more effective outcomes. Given specific health risks and health care disparities among SGM, perhaps compounded in rural environments, we sought to explore a common and important clinical condition and health care measure in a largely rural population. We chose to examine depression as it is: associated with stigma experienced by rural SGM; a top health concern for rural SGM; and is assessed with a relatively simple screening instrument (Camacho, 2012; Kroenke et al., 2003; Marsack & Stephenson, 2017). As depression requires a degree of care continuity for successful treatment, we chose to examine health care satisfaction as it is associated with care (Dang et al., 2013; Jacobs et al., 2017; Rossom et al., 2016; Thayaparan & Mahdi, 2013; Zolnierek & DiMatteo, 2009). To our knowledge, this is the first direct exploration of these factors among a largely rural population.

Methods

From May 25 to July 2, 2021, the ruralHarmony program utilized REDCap (Harris et al., 2009) to survey residents of southern Illinois (IL). Eligibility included age ≥ 18 years and residence in one of 25 study counties. The mean population within the composite 25 counties is 19,406 (19 counties <25,000; range 3,650–66,879). The survey was promoted via our Facebook page and various social media by our community partners (The Community Action Place and Rainbow Cafe) and members of our Community Advisory Board. Participants received a US$20 gift card for their time.

Measures examined among all participants included demographics, depression (Patient Health Questionnaire 2 [PHQ-2]), and health care satisfaction (Patient Satisfaction Questionnaire 18 [PSQ-18]) (Kroenke et al., 2003; Thayaparan & Mahdi, 2013). The PHQ-2 (Cronbach’s alpha = 0.82) is a two-question instrument measuring the frequency of depressed mood and inability to feel pleasure (anhedonia) over the past 2 weeks. Each question has a score range of 0–3, and a total score ≥ 3 (of a possible 6) indicates major depressive disorder is likely. The PSQ-18 (Cronbach’s alpha = 0.73) is an 18-question instrument measuring satisfaction across seven subscales (general satisfaction, technical quality, interpersonal manner, communication, financial aspects, time spent with doctor, and accessibility and convenience). Each question has a score of 1–5, scores are summarized both within subscales and across the entire instrument, and higher scores indicate increased satisfaction. Health care experiences were assessed by asking: *Do you currently have health insurance or health care coverage?* [CurrInsurance] and *Have you had bad experiences with primary care such that you considered not going anymore?* [PastPoorExp]. Additional

measures examined only among SGM included an additional health care experience question: *Do you feel* "accepted" *and* "nonjudged" *during office visits?* [Accepted?] and assessments of internalized stigma (five questions, range 1–5 from strongly disagree to strongly agree; Liu et al., 2009; Puckett et al., 2017) and experienced victimization (eight questions, range 0–1, no/yes; D'Augelli & Grossman, 2001). Both scales were modified and expanded to individually assess stigma and victimization associated with sexual orientation and gender identity (i.e., five questions assessing stigma associated with sexual orientation and the same five questions modified to address gender identity). Participants were given six options each for gender identity (cisgender male; cisgender female; transgender male; transgender female; genderqueer/gender-nonconforming; and another identity) and sexual orientation (heterosexual or straight, gay, lesbian, bisexual, pansexual, and other). For the purposes of this work and analysis, we examined participants from two perspectives (self-reported gender identity and sexual orientation).

Descriptive statistics were used to compile and compare participant demographic data across categories. Bivariate analyses comparing independent variables to participants included analysis of variance (ANOVA) and chi-square test. We performed multivariable modeling to explore the degree to which variables predicted depression, dichotomized as positive (score ≥3) or negative (score <3); logistic regression, and health care satisfaction subscales (continuous; general linear model). The full model examined all participants and the following variables: participant demographics (orientation, identity, orientation and identity interaction, race, employment and marital status, and educational attainment), county-level characteristics (total population, multidimensional deprivation index (MDI) rate), and two health care experiences. The interaction term between orientation and identity was also included to test the intersectional effects (Tsai & Venkataramani, 2016; Turan et al., 2019). The SGM model was limited to individuals of nonheterosexual orientation or noncisgender identity and included the aforementioned variables and others specific to SGM participants. While orientation and identity were retained in the models regardless of significance, all other variables were subject to backwards selection to obtain the final models presented in the results.

This project was reviewed and approved by the institutional review board at Southern Illinois university School of Medicine (Springfield Committee for Research Involving Human Subjects: #21–808).

Results

A total of 624 surveys were initiated. Incomplete surveys were discarded. For surveys with identical email addresses and/or participant names, we retained the first completed and discarded others, resulting in 398 unique survey responses from 22 counties. Nineteen of the counties had no urban population (U.S. Census Bureau, 2010), and respondents from these counties comprised 83.4% of the total sample. Participants were stratified across two broad categories for parallel analysis (gender identity and sexual orientation). Distribution across gender identity was: cisgender male = 171; cisgender female = 203; transgender male = 8; transgender female = 7; and all others (e.g., genderqueer, multiple identities chosen) = 9. Participant distribution across sexual orientation was: heterosexual = 114; gay/lesbian

= 143; and all others (e.g., bisexual, pansexual) = 141 (Table 1). Mean age was 29.3 (*SD* = 7.1) and did not significantly differ across either category groups, but there were significant differences for the other demographic variables (i.e., race and education across both categories, and employment and marital status across sexual orientation only).

We next examined measures and scales of mental health, health care experiences, health care satisfaction, internalized stigma (homophobia), and victimization. Transgender individuals more frequently reported having current insurance and past poor health care experiences (vs. cisgender; $p = .003$ and <.001, respectively); while gay/lesbian individuals also more frequently reported past poor health care experiences (versus heterosexual and other orientation; $p < .001$). Gay/lesbian individuals rated all seven health care satisfaction subscales significantly lower than heterosexual and other sexual orientation individuals (all $p \leq 0.001$), but there were few differences across the gender identity groups (only *Technical Quality* and *Access and Convenience*). We find significant differences in mean PHQ-2 scores, with the highest among transgender and nonheterosexual individuals (both $p < .001$; Table 2). The mean score for transgender males was 3.8, and all scored ≥ 3 (considered "positive" for depression). Finally, while there were significant differences in internalized stigma queries across both categories, the summary score was only significant across sexual orientation (higher among gay/lesbian vs. other; $p = .002$). The summary victimization score significantly differed across both categories, with highest scores among transgender females and gay/lesbians (both $p < .001$).

In the multivariable analysis for depression, the only significant variables for the full model were sexual orientation, gender identity, and past poor experiences (Table 3). Compared with heterosexuals, gay/lesbian and bisexual/other individuals had greater odds of depression (odds ratio [OR] = 3.1 and OR = 2.8, respectively). Similarly, elevated odds were seen among those reporting past poor experiences (OR = 3.5). Conversely, cisgender female participants had lower odds of depression than cisgender males (OR = 0.31). For the SGM model, greater odds were observed among those reporting past poor experiences (OR = 3.1) and victimization (OR = 1.3; increase for each incremental increase in score), and cisgender female identity was again associated with lower odds (OR = 0.22). As all transgender males were positive for depression, risk could not be accurately estimated.

In the multivariable analyses for health care satisfaction, sexual orientation was significantly associated with 11 of the 14 subscale models (full and SGM models for each of seven subscales), while gender identity and the orientation/identity interaction were only significant for a few (2 and 1 models, respectively; Table 4). For the full models, sexual orientation, past poor experiences and employment status were most frequently significant (6, 5, and 4 subscales, respectively), while for the SGM models fewer were significant, and the most frequent were feeling accepted and sexual orientation (7 and 5 subscales, respectively). The two subscales with the greatest number of significant independent variables were technical quality, and accessibility and convenience, each with six variables in the full model and five in the SGM model. These two subscales also had the highest R^2 value for full models (both at 0.19), while the highest R^2 values for the SGM models were for the technical quality and communication subscales (both at 0.37).

Discussion

Over an approximately 6-week period during the summer of 2021 we surveyed 398 individuals across rural southern IL, including 110 individuals who identified as cisgender heterosexuals and 288 as SGMs. As sexual orientation and gender identity are distinct constructs, we utilized categorization methods explicit to each, and performed analyses to explore each individually, and their possible intersectionality, in regards to depression and health care satisfaction. Across gender identities, we observed differences in racial distribution and educational attainment; while across sexual orientation, we observed much the same, and also differences in marital and employment status.

Higher depression screening scores were strongly associated with SGM status, with mean scores significantly higher for transgender (vs. cisgender) individuals and gays/lesbians and others (vs. heterosexuals). The frequency of screening positives (i.e., PHQ-2 score ≥ 3) for our population is substantially higher than that from other studies. For example, an analysis of the statewide Survey of the Health of Wisconsin data reported positives among non-LGB cisgender, LGB, and transgender individuals at 12.0%, 19.4%, and 8.9%, respectively (Jennings et al., 2019). Recategorizing our participants to match this method, we find positive screens at 12.7%, 32.2%, and 70.8%, respectively. Analysis of the 2016 Minnesota Student Survey reported that 57.9% of noncisgender youth were positive for depression (Gower et al., 2018). A Canadian survey of SGM males reported positive screens at 12.5% for cisgender MSM (compared to 49.2% here) and 30.1% for transgender males and 33.3% for nonbinary (compared to 100% of transgender males here) (Rutherford et al., 2021). We thus find substantially higher rates of depression among SGM, and may be a reflection of the near-exclusively rural areas from which our participants were drawn. However, the relatively small number of transgender individuals in our work ($n = 24$) is a significant limitation to drawing firm comparisons and warrants further exploration. The multivariable model confirms increased risk of depression associated with nonheterosexual orientation, past poor health care experiences, and increasing instances of victimization.

Regarding health care satisfaction, to our knowledge, this is the first comparison across gender identities and sexual orientations. There was little variation across gender identities for the seven subscales, with mean scores ranging from 2.8 to 3.5 (possible range of 1–5). Only for *Technical Quality* and *Accessibility and Convenience*, there was a significant difference, with transgender males reporting lower scores. This is perhaps somewhat intuitive, as transgender males may seek more specialized care that is less available across rural communities. Across sexual orientation, we observed consistently significantly lower scores for each subscale reported by gay and lesbian persons. Perceived stigma may be a factor, however, the proportion of participants who reported that they had not disclosed their nonheterosexual orientation to their provided was nonsignificantly different between gay/lesbian individuals and other groups (though high at 44.7% and 40.0%, respectively). The multivariable model confirms the pervasive significance of sexual orientation, and lesser influence of gender identity, on health care satisfaction. Interestingly, the measure associated with rurality (total population) was only significant for *Time Spent with Doctor* and *Accessibility and Convenience*, possibly due to smaller clinics with fewer clinicians and

longer travel distances. Among the SGM participants, the measure of clinician acceptance was universally highly significant across all subscales.

There are several potential actions for consideration given these results. First, there should be new/renewed/invigorated efforts among primary care providers in rural areas in making their practice environment welcoming and affirming to SGM patients. One way to ensure affirming care is through medical education and teaching “structural competenc.” Metzl and Hansen (2014) lay out five areas for training that can improve clinicians’ understandings of how macro forces influence health outcomes, and as a result of this understanding, trains physicians to provide more culturally competent and less stigmatizing care (Metzl & Hansen, 2014). As the majority of rural areas are primary care health professional shortage areas, there less provider choice for patients, and hence responsibility for welcoming an affirming care is incumbent for each. Second, routine mental health screening and care should be adopted/maintained, for all patients, but especially for SGM who experience greater risk of depression. While screening instruments, such as the PHQ-2 and PHQ-9, are readily routinized in the clinical environment, provision of care may be more difficult due to professional shortages. Clinical providers should continue to explore multiple aspects of such care provision, and telehealth-based care has been found effective and acceptable by SGM (Hubach et al., 2021). Authors’ previous work has found that telehealth expansion due to the coronavirus disease (COVID-19) pandemic increased care options for people who inject drugs, another highly stigmatized population, and thus, there is promise that telehealth can be expanded as a stigma reduction tool for other stigmatized groups (Walters et al., 2022). Finally, rural clinician training (e.g., medical school, continuing education, ECHO-based consultations) should purposefully address SGM health in general as an expected part of practice similar to more metropolitan areas, and specifically as it may relate to rural-specific implications, such as increase risk of depression and stigmatizing experiences. These actions would also likely influence patient satisfaction, thereby increasing the likelihood that rural SGM patients will both seek and be retained in care.

There are limitations to this work. First, as a cross-sectional survey, we cannot ascertain any temporal association. Second, although we purposively sought participants from a diversity of sexual orientations and gender identities, we were only able to survey a small number of noncisgender individuals and were limited in our ability to tease out differences between less frequently named sexual orientations (e.g., queer, questioning). However, this was one of the first studies of this kind in rural IL, and we view our findings as preliminary evidence of differences to be explored in future larger-scale studies. As with any survey, our study was likely impacted by both recall bias and social desirability bias. The former was addressed through time-linking all activities, while the latter was minimized through the anonymity of the survey. Finally, several of our measures inquired about general behaviors (e.g., health care access) rather than behaviors tied to specific conditions, so that, future research is needed to examine the nuances inherit within those behaviors.

To our knowledge, this was the first explicit examination of depression and health care access and satisfaction among rural SGM, with a cisgender heterosexual comparison group. We found significant differences in depression by sexual orientation and gender identity, and while such differences were expected, the rates of depression were significantly higher

than that reported elsewhere. Furthermore, we demonstrated that there are significant differences in health care satisfaction associated with sexual orientation, and also strongly and consistently associated with past poor health care experiences. We posit that there is need to specifically structure the health care encounter to be more respectful and affirming to nonheterosexual individuals, and that health care organization work with SGM community representatives and organizations to both revise their clinical model and engage in outreach to rural SGM who may have had past poor experiences. By changing the nature of how health care is provided and SGM patients are engaged, perhaps satisfaction can increase and better treatments and outcomes result for those with depression (and other conditions).

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Table 1.

Demographic Results From the *ruralHarmony* Preliminary Data Survey ($N = 398$).

	Gender identity comparison[a]					Sexual orientation comparison			
Variable	**Cis-male *n*(%)**	**Cis-female *n* (%)**	**Trans-male *n* (%)**	**Trans-female *n* (%)**	***p* value**	**Heterosexual *n* (%)**	**Gay/lesbian *n* (%)**	**Other *n* (%)**	***p* value**
Age (mean)	28.9	27.6	28.6	32.6	.163	30.0	28.8	29.3	.372
Race									
White	121 (70.8)	174 (85.7)	6 (75.0)	5 (71.4)	.008	94 (82.5)	104 (72.7)	117 (83.0)	.006
Black/African American	30 (17.5)	18 (8.9)	0	1 (14.3)		15 (13.2)	27 (18.9)	7 (5.0)	
Hispanic/Latinx	20 (11.7)	8 (3.9)	2 (25.0)	1 (14.3)		5 (4.4)	10 (7.0)	16 (11.3)	
Other	0	3 (1.5)	0	0		0	2 (1.4)	1 (0.7)	
Employment									
Full time	144 (84.7)	168 (83.2)	5 (62.5)	7 (100)	.156	85 (75.9)	124 (86.7)	119 (84.4)	.014
Part time	17 (10.0)	11 (5.4)	1 (12.5)	0		7 (6.3)	12 (8.4)	10 (7.1)	
Unemployed	3 (1.8)	4 (2.0)	0	0		3 (2.7)	2 (1.4)	5 (3.5)	
Student/unable	6 (3.5)	19 (9.4)	2 (25.0)	0		17 (15.2)	5 (3.5)	7 (5.0)	
Marital status									
Single	106 (63.5)	120 (59.1)	3 (37.5)	4 (57.1)	.070	53 (46.9)	98 (69.0)	85 (61.2)	<.001
Married/partnered	30 (18.0)	35 (16.3)	4 (50.0)	3 (42.9)		40 (35.4)	16 (11.3)	16 (11.5)	
Separated/divorced/widowed	31 (18.6)	50 (24.6)	1 (12.5)	0		20 (17.7)	28 (19.7)	38 (27.3)	
Education									
High school	28 (16.4)	33 (16.3)	1 (12.5)	4 (57.1)	<.001	13 (11.4)	43 (30.1)	11 (7.9)	<.001
Undergraduate	129 (75.4)	152 (75.2)	2 (25.0)	2 (28.6)		92 (80.7)	83 (58.0)	115 (82.1)	
Graduate	14 (8.2)	16 (7.9)	4 (50.0)	1 (14.3)		9 (7.9)	15 (10.5)	13 (9.3)	
Trade school/other	0	1 (0.5)	1 (12.5)	0		0	2 (1.4)	1 (0.7)	

[a]Individuals selecting genderqueer, “other gender,” or multiple identities not included here.

Table 2.

Univariate Comparisons of Factors Between Participant Categories and Depression, Health care Experiences and Satisfaction, Stigma, and Victimization.

Cat	Variable		Cis-male *n* (%) or *M* (*SD*)	Cis-female *n* (%) or *M* (*SD*)	Trans-male *n* (%) or *M* (*SD*)	Trans-female *n* (%) or *M* (*SD*)	*p*-value	Heterosexual *n* (%) or *M* (*SD*)	Gay/lesbian *n* (%) or *M* (*SD*)	Other *n* (%) or *M* (*SD*)	*p*-value
	Depression by PHQ-2		2.0 (1.4)	1.6 (1.2)	3.8 (1.2)	2.7 (1.3)	<.001	1.1 (1.3)	2.1 (1.3)	2.2 (1.3)	<.001
Health care experience	Do you currently have health insurance or health care coverage? (CurrInsurance; Yes)		124 (72.5%)	174 (85.7%)	8 (100%)	7 (100%)	.003	94 (82.5%)	121 (84.6%)	105 (74.5%)	.079
	Do you currently have a primary care provider you see on a regular or routine basis? (Yes)		165 (96.5%)	197 (97.0%)	7 (87.5%)	7 (100%)	.489	111 (97.4%)	140 (97.9%)	132 (93.6%)	.125
	Have you had bad experiences with primary care such that you considered not going anymore? (PastPoorExp; Yes)		94 (56.0%)	75 (37.3%)	6 (75.0%)	7 (100%)	<.001	43 (37.7%)	88 (63.3%)	56 (40.3%)	<.001
Health care satisfaction	General satisfaction		3.5 (0.58)	3.3 (0.75)	3 (1.1)	3.4 (0.48)	.087	3.5 (0.58)	3.2 (0.77)	3.5 (0.69)	.001
	Technical quality		3.4 (0.49)	3.3 (0.56)	2.8 (0.83)	3.1 (0.51)	.008	3.4 (0.49)	3.2 (0.59)	3.4 (0.5)	<.001
	Interpersonal manner		3.3 (0.67)	3.4 (0.75)	3.1 (1.1)	3.2 (0.49)	.692	3.6 (0.6)	3.1 (0.79)	3.4 (0.68)	<.001
	Communication		3.4 (0.58)	3.4 (0.69)	3.3 (1)	3.2 (0.86)	.678	3.4 (0.63)	3.3 (0.7)	3.6 (0.63)	<.001
	Financial aspects		3.3 (0.6)	3.3 (0.71)	2.9 (1.02)	3.4 (0.93)	.459	3.5 (0.67)	3.1 (0.71)	3.2 (0.64)	<.001
	Time spent with doctor		3.3 (0.53)	3.3 (0.71)	3.5 (0.38)	3.2 (0.86)	.782	3.5 (0.63)	3.1 (0.64)	3.3 (0.65)	<.001
	Accessibility and convenience		3.4 (0.5)	3.3 (0.5)	2.8 (0.64)	3.1 (0.54)	.014	3.4 (0.42)	3.2 (0.52)	3.4 (0.53)	<.001
Only asked of SGM	Do you feel ‘accepted’ and ‘nonjudged’ during office visits? (accepted?)	Yes, and they know about my nonheterosexual orientation and/or noncisgender identity	60 (47.6%)	79 (58.5%)	2 (25.0%)	1 (14.3%)	.025	2 (50.0%)	66 (46.8%)	77 (55.0%)	.322
		Yes, but they do not know about my nonheterosexual orientation and/or noncisgender identity	60 (47.6%)	46 (34.1%)	4 (50.0%)	5 (71.4%)		1 (25.0%)	63 (44.7%)	56 (40.0%)	
		No, they treat me differently	6 (4.8%)	10 (7.4%)	2 (25.0%)	1 (14.3%)		1 (25.0%)	12 (8.5%)	7 (5.0%)	
	Stigma score (mean, range 5–25)		13.71 (3.9)	14.43 (3.8)	12.43	17.60	.055	N/A	14.8 (4.0)	13.4 (3.7)	.002
	Victimization score (mean, range 0–8)		2.82 (2.4)	2.06 (2.7)	3.57 (2.4)	6.60 (1.5)	<.001	N/A	3.3 (2.8)	1.8 (2.1)	<.001

Note. PHQ-2 = Patient Health Questionnaire 2; SGM = sexual and gender minority.

Table 3.

Multivariable Modeling of Depression (PHQ-2 Score ≥3) Versus Participant and County-Level Characteristics and Experiences With Health Care, Stigma, and Victimization.

	Full model		SGM model	
	n = 377		*n* = 257	
Participant characteristics	**AOR**	**(95% CI)**	**AOR**	**(95% CI)**
Gender identity				
Cisgender male	Reference		Reference	
Cisgender female	0.31***	[0.18–0.53]	0.22***	(0.11–0.43)
Transgender male[a]	–	–	–	–
Transgender female	1.3	(0.26–6.3)	0.21	(0.03–1.4]
Sexual orientation				
Heterosexual	Reference		–	–
Gay/lesbian	3.1**	(1.5–6.3)	Reference	
Bisexual/other	2.8**	(1.4–5.8)	1.4	(0.67–2.9)
Health insurance				
Yes			0.31**	(0.14–0.72)
No			Reference	
Bad experiences in health care				
Yes	3.5***	(2.0–6.0)	5.6***	(2.5–12.7)
No	Reference		Reference	
Victimization score[b]			1.3***	(1.1–1.5)

Note. Psuedo R^2: Full model = 21.3%, SGM model = 33.4%. Both models had "good fit" according to the Hosmer–Lemeshow test ($p > .0.05$). AOR = adjusted odds ratio; PHQ-2 = Patient Health Questionnaire 2; SGM = sexual and gender minorities; CI = confidence interval.

[a]AOR for transgender males not estimated as all screened positive for depression.

[b]Victimization score only included in SGM model.

For a two-tailed test:

*indicates $p < .05$.

** indicates $p < .01$, and

*** indicates $p < .001$.

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Table 4.

Multivariable Modeling of Health Care Satisfaction Subscales Versus Participant and County-Level Characteristics and Experiences With Health Care, Stigma, and Victimization.

	Interpersonal manner		Technical quality		Time spent with doctor		Accessibility and convenience		Communication		Financial aspects		General satisfaction	
	All	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**
R^2	14%	22%	19%	37%	10%	18%	19%	26%	11%	37%	12%	17%	12%	32%
Total mean score (*SD*)	3.3 (0.5)	3.3 (0.8)	3.3 (0.7)	3.3 (0.6)	3.3 (0.7)	3.2 (0.6)	3.3 (0.5)	3.3 (0.5)	3.4 (0.7)	3.4 (0.7)	3.3 (0.7)	3.2 (0.7)	3.4 (0.7)	3.3 (0.7)
Sexual orientation														
Heterosexual[a]	Ref.	0.59 (0.4)	Ref.	0.04 (0.3)	Ref.	0.3 (0.6)	Ref.	−0.44 (0.3)	Ref.	0.65 (0.4)	Ref.		Ref.	0.84 (0.4)*
Gay/lesbian	−0.45 (0.1)***	Ref.	−0.20 (0.1)	Ref.	−0.31 (0.1)***	Ref.	−0.11 (0.1)	Ref.	−0.07 (0.1)	Ref.	−0.38 (0.1)***	Ref.	−0.27 (0.1)**	Ref.
Bisexual/other	−0.09 (0.1)	0.33 (0.1)***	0.02 (0.1)**	3.3 (0.1)***	−0.14 (0.1)	−0.07 (0.1)	−0.03 (0.1)	0.10 (0.1)	0.29 (0.1)***	0.36 (0.1)***	−0.24 (0.1)**	0.14 (0.1)	−0.06 (0.1)	0.17 (0.1)*
Gender identity														
Cisgender male	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Cisgender female	−0.02 (0.1)	0.06 (0.1)	−0.09 (0.1)	−0.12 (0.1)*	0.04 (0.1)	−0.16 (0.1)	0.03 (0.1)	−0.1 (0.1)	0.0 (0.1)	0.06 (0.1)	−0.03 (0.1)	−0.03 (0.1)	−0.14 (0.1)*	−0.16 (0.1)*
Transgender male	−0.05 (0.3)	0.14 (0.3)	−0.58 (0.2)**	−0.33 (0.2)	0.37 (0.2)	0.21 (0.3)	−0.64 (0.5)	−0.12 (0.2)	−0.06 (0.2)	0.22 (0.2)	−0.26 (0.2)	0.12 (0.3)	−0.39 (0.3)	−0.25 (0.3)
Transgender female	0.11 (0.3)	0.13 (0.3)	−0.11 (0.2)	0.05 (0.2)	0.04 (0.2)	−0.37 (0.3)	−0.68 (0.3)*	0.17 (0.2)	0.05 (0.2)	−0.04 (0.2)	0.17 (0.3)	0.22 (0.3)	0.07 (0.3)	0.06 (0.3)
Orientation × identity[b]						*	*							
Race														
White	Ref.										Ref	Ref		
Black	0.21 (0.1)										0.21 (0.1)*	0.25 (0.1)*		
Hispanic	0.14 (0.1)										0.16 (0.1)	0.22 (0.1)		

	Interpersonal manner		Technical quality		Time spent with doctor		Accessibility and convenience		Communication		Financial aspects		General satisfaction	
	All	SGM only	All	SGM only	All	SGM only	All	SGM only	All	SGM only	All	SGM only	All	SGM only
Other	1.0 (0.4) *										0.71 (0.4)	0.80 (0.4) *		
Employment														
Full time			Ref.	Ref.	Ref.		Ref.	Ref.		Ref.	Ref	Ref		
Part time			0.21 (0.1) *	0.11 (0.1)	0.10 (0.1)		0.03 (0.1)	−0.06 (0.1)		−0.05 (0.1)	−0.11 (0.1)	−0.16 (0.1)		
Unemployed			0.41 (0.2) *	0.78 (0.2) **	0.50 (0.2) *		0.50 (0.2) **	0.64 (0.3) *		0.56 (0.3) *	1.05 (0.2) ***	1.3 (0.3) ***		
Student/unable			0.01 (0.1)	0.05 (0.2)	−0.26 (0.1) *		−0.21 (0.1) *	−0.30 (0.2)		−0.59 (0.2) **	−0.06 (0.1)	−0.14 (0.2)		
Marital status														
Single			Ref.	Ref.			Ref.	Ref.					Ref.	Ref.
Married/ partnered			−0.13 (0.1)	−0.31 (0.1) **			−0.09 (0.1)	−0.21 (0.1) *					−0.19 (0.1)	−0.39 (0.1) **
Separated/ divorced/widowed			−0.24 (0.1) ***	−0.24 (0.1) **			−0.21 (0.1) **	−0.25 (0.1) **					−0.32 (0.1) ***	−0.34 (0.1) ***
Education														
Up to high school			Ref	Ref									Ref	Ref
Up to undergraduate			0.20 (0.1) *	0.23 (0.1) **									0.18 (0.1)	0.21 (0.1) *
Up to graduate			0.39 (0.1) **	0.41 (0.1) ***									0.43 (0.2) **	0.60 (0.2) ***
Trade school/ other			0.46 (0.4)	0.30 (0.3)									−0.35 (0.5)	−0.45 (0.5)
Population/100,000					−0.64 (0.2) ***	−0.89 (0.2) ***	−0.49 (0.2) **	−0.69 (0.2) ***						
PastPoorExp	−0.25 (0.1) ***		−0.15 (0.1) *				−0.17 (0.1) **	−0.17 (0.1) *	−0.25 (0.1) ***				−0.17 (0.1) *	
Accepted?[c]														
Yes, and they know about my nonheterosexual orientation and/or		Ref		Ref		Ref		Ref		Ref		Ref		Ref

	Interpersonal manner		Technical quality		Time spent with doctor		Accessibility and convenience		Communication		Financial aspects		General satisfaction	
	All	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**	**All**	**SGM only**
noncisgender identity														
Yes, but they do not know about my nonheterosexual orientation and/or noncisgender identity		−0.26 (0.1)**		−0.24 (0.1)***		−0.08 (0.1)		−0.10 (0.1)		−0.36 (0.1)***		−0.08 (0.1)		−0.40 (0.1)***
No, they treat me differently		−1.2 (0.2)***		−0.87 (0.1)***		−0.65 (0.1)***		−0.61 (0.1)***		−1.2 (0.1)***		−0.88 (0.2)***		−1.1 (0.2)***
Stigma score[c]												0.02 (0.01)*		

Note. Columns represent satisfaction subscales and report parameter estimates (standard errors). SGM = sexual and gender minorities.

[a] These individuals identified as transgender and as heterosexual; and therefore, are included in the models for SGM only.

[b] Beta estimates are not shown for individual interaction term categories.

[c] Accepted? and victimization score included in SGM model with sexual gender minority ONLY because it was only asked to SGM respondents.

For a two-tailed test:

* indicates $p < .05$

** indicates $p < .01$, and

*** indicates $p < .001$.