

UCSF

UC San Francisco Previously Published Works

Title

Stressors in health care and their association to symptoms experienced by gender diverse people

Permalink

<https://escholarship.org/uc/item/83q9s45w>

Authors

Clark, Kristen D

Flentje, Annesa

Sevelius, Jae M

et al.

Publication Date

2023-04-01

DOI

10.1016/j.puhe.2023.01.017

Peer reviewed

Abstract

Objectives: Many individuals whose gender does not align with the sex they were assigned at birth (gender diverse (GD) people) report stressful healthcare encounters. We examined the relationship of these stressors to symptoms of emotional distress and impaired physical functioning among GD.

Study Design: This study was conducted using a cross-sectional design with data from the 2015 United States Transgender Survey.

Methods: Composite metrics of healthcare stressors and physical impairments were developed and the Kessler Psychological Distress Scale (K-6) provided a measure of emotional distress. Linear and logistic regression were used to analyze the aims.

Results: 22,705 participants from diverse gender identity subgroups were included. Participants who experienced at least one stressor in healthcare during the past 12 months had more symptoms of emotional distress ($\beta=0.14$, $p<.001$) and 85% greater odds of having a physical impairment ($OR=1.85$, $p<.001$). Transgender men exposed to stressors were more likely than transgender women to experience emotional distress and have a physical impairment, with other gender identity subgroups reporting less distress. Black participants exposed to stressful encounters reported more symptoms of emotional distress than White participants.

Conclusions: Results suggest that stressful encounters in healthcare are associated with symptoms of emotional distress and greater odds of physical impairment for GD people, with transgender men and Black individuals being at greatest risk of emotional distress. Findings indicate the need for assessment of factors that contribute to discriminatory or biased healthcare

for GD people, education of healthcare workers, and support for GD people to reduce their risk of stressor-related symptoms.

Introduction

Health disparities experienced by gender diverse (GD) individuals represent a growing public health concern. Gender diverse populations include varied groups of individuals whose gender identity is not aligned with the sex that was assigned to them at birth.¹ This includes transgender people (such as transgender men and transgender women) and non-binary individuals (individuals whose gender identity is not solely masculine or feminine or may be in between or shift between masculine and feminine). Non-binary identities also include individuals who describe their gender as agender (or without gender). High rates of health disparities, both psychological and physical have been observed in this GD community, including a greater prevalence of suicide attempts,² depression, and substance use³ when compared to the general population as well as poorer overall physical health.⁴ These poor health outcomes have been associated with chronic stress and stigma due to their socially marginalized status.^{5,6} As described in the Minority Stress Model, stress related to one's minoritized identity, may be experienced in the form of distal and proximal stressors. The stressors experienced by GD people when accessing healthcare exemplify both distal and proximal stressors.^{7,8}

Distal stressors in healthcare (*i.e.*, stigma such as discrimination, verbal harassment, or physical harm) have been reported by GD people in numerous studies.⁹ GD people frequently describe encounters with providers who lack knowledge on GD people and their specific health needs, leaving patients with the burden of educating providers themselves.¹⁰ Overt discrimination, such as refusal of healthcare services, is also frequently reported, contributing to

proximal stressors, such as delaying or avoiding of healthcare by GD people.⁹ However, little is known about these stressors among particular subgroups of GD people, such as transgender men, transgender women, non-binary people and people who self-identify as crossdressers.

Healthcare experiences of transgender women have been most widely studied, describing stressors such as the refusal of healthcare services and inadequate provider knowledge.⁹ Similar findings have been observed among transgender men and non-binary people, although they have been less widely studied.⁹ Although research provides evidence that these stressors occur and are associated with poor mental health outcomes,^{11,12} their relationship to physical health symptoms experienced by GD people is not well understood, although broadly, stress has been associated with poorer physical health outcomes among GD people.^{4,13}

In contrast to gender identity, adverse healthcare experiences based on race/ethnicity have been described widely.¹⁴ Experiences of racial and ethnic minority groups range from lack of provider knowledge on assessment findings unique to darker pigmented skin¹⁵ to discrimination.¹⁶ The limited literature examining healthcare experiences of GD people of color indicates mixed results ranging from no difference among racial or ethnic subgroups^{17,18} to a greater likelihood of reported poor experiences in healthcare settings.^{19,20} Intersectionality theory, a theory developed by Black feminist scholars, points to an interlocking relationship between social identities where there are differences in power.²¹⁻²³ Race, ethnicity, and gender are areas where distinct types of marginalization interface and interlock to shape differential exposure to stigma and resources, such as healthcare access.²⁴ Still, there were few studies that examined the relationship of these stressful encounters in healthcare to psychological or physical symptoms of GD people of color. Understanding these relationships can help in clarifying the impact of these

healthcare stressors and in developing needed interventions within healthcare environments and for GD people. The primary aims of this study were to assess the relationship of stressors experienced in healthcare to symptoms of emotional distress and impaired physical functioning among GD people. We also assessed the moderating roles of gender identity as well as race and ethnicity in the association between these stressors and reported symptoms. We hypothesized that a greater number of stressors experienced in healthcare would be associated with more symptoms of both emotional distress and impaired physical functioning. We also hypothesized that both gender identity and race/ethnicity would moderate these relationships.

Methods

Data from the 2015 United States Transgender Survey (USTS) were used for these analyses. The USTS is the largest sample of GD people in the U.S ($N=27,715$). The survey was developed by the National Center for Transgender Equality to describe the characteristics, experiences, and health of a sample of GD people in the United States.² Recruitment efforts were expansive, led by a recruitment advisory group. These efforts included outreach through more than 800 healthcare organizations, community organizations, online recruitment, survey-focused events, and participant prizes. Participants include individuals who identify as GD, are 18 years of age or older who resided in the United States, its territories, and foreign military bases.

Demographics

Except for variables regarding gender identity and race/ethnicity, demographic data were used primarily for descriptive purposes. This information included age, education, individual gross income, and sexual orientation. Education was measured by fourteen levels (*e.g.*, less than

8th grade, professional degree). This was recoded to four items.²⁵ Individual gross income was measured by asking participants to identify what their individual income was in 2014 with 18-levels ranging from “no income”, \$1-\$5,000 to “\$150,000 or more” and recoded to a 6-level categorical variable for greater ease in analysis. Race/ethnicity were measured by 9 discrete options (*e.g.*, Alaska Native, Middle Eastern/North African) and a fill-in-the-blank that were recoded to an 8-item variable to facilitate comparison of race/ethnicity categories to standard census reports. Gender identity was assessed using an item for participants to self-select the description closest to their self-described gender. Participants were provided six options (*i.e.*, crossdresser, woman, man, “trans woman”, “trans man”, non-binary/genderqueer) that were then recoded and categorized into four groups (*i.e.*, crossdresser, non-binary, transgender man, and transgender woman).

Stressors in Healthcare

Ten items from the USTS survey were used to measure potential stressors in healthcare. Participants who reported that they accessed healthcare within the past 12 months were asked whether they had encountered each of the ten items during healthcare interactions. Participants could answer ‘yes’ or ‘no’ (*e.g.*, “I had to teach my doctor or other healthcare provider about trans people so that I could get appropriate care”). The items were developed by a review of the literature performed by scholars in the field of GD health, followed by group consensus regarding which items to include in the final survey.²⁶ Due to a severely right-skewed distribution, we recoded the items into a single dichotomous variable, indicating no experience of a healthcare stressor (0) or reports of 1 or more stressors (1).

Symptoms of Emotional Distress

Participants' scores on the Kessler-6 (K-6) scale were used to assess symptoms of emotional distress during the last 30 days.²⁷ The K-6 is a Likert-type scale, with higher scores indicating more distress (range 6-30). The measure has shown excellent validity with the sensitivity to detect serious mental illness ranging from 0.98 to 0.99 and a Cronbach Alpha ranging from 0.89 to 0.80.²⁸ The K-6 also has demonstrated moderate to high test-retest correlation coefficients.^{29,30} The sum score was used in this analysis, with a log transformation to improve normality of the distribution.

Symptoms of Impaired Physical Functioning

Participants' symptoms of impaired physical functioning were measured using four dichotomous items in the USTS that were adapted from CDC's Behavioral Risk Factor Surveillance System³¹ and the National Health Interview Survey.³² Items assess (1) difficulty walking or climbing stairs, (2) difficulty dressing or bathing, (3) difficulty concentrating, remembering, or making decisions, and (4) difficulty independently performing activities such as errands, visiting a doctor's office or shopping. Due to a severely right skewed distribution and an inability to correct the skew with various transformations, we created a single dichotomous variable from the four items indicating whether the participant had 1 or more symptoms of impaired physical functioning (1) or no symptoms of impairment (0).

Data Analysis

All analyses were run using Stata 15.³³ Individual items were assessed for distribution and missingness. Multicollinearity of the independent variables was assessed by examining their Variance Inflation Factors and tolerance.³⁴ No evidence of multicollinearity was identified. USTS

survey participants who did *not* complete items about the healthcare stressors because they had not accessed healthcare in the past 12 months ($n=3,743$) or who had missing data for measures of emotional distress and physical functioning ($n=921$) were excluded from analysis. Descriptive statistics were used to determine demographics of the remaining sample (*e.g.*, age, highest level of education). Differences between demographic characteristics of the group that accessed healthcare during the past 12 months and the group that did not access healthcare were evaluated using a two-sample test of proportions and Wilcoxon-Mann-Whitney tests.

We employed Chi square analyses to evaluate the association between stressors in healthcare and individual gender identities. Linear regression was used to examine the relationship between stressors in healthcare and symptoms of emotional distress. To examine the relationship between stressors in healthcare and symptoms of impaired physical functioning (a dichotomous variable), logistic regression was used. Healthcare stressors were treated as a dichotomous predictor (experienced stressors or not) in all models. All models were adjusted to account for variance due to age, education, and individual gross income.

The moderating effects of gender identity as well as race and ethnicity were evaluated by building interaction terms into the regression models. Dichotomous variables were created for each gender identity group: crossdresser, non-binary, transgender men, and transgender women. Transgender women were chosen as the reference group in analyses due to the more substantial research about this group. Dichotomous variables were also created for categories of race/ethnicity: Alaskan Native/Native American, Asian, Black, Latino/Hispanic, multiracial, Pacific Islander, White, and race-not-listed. White participants were chosen as the reference

group because of the robust body of research showing minority racial and ethnic groups having poorer health outcomes than White individuals.²⁵

Results

Sociodemographic characteristics of the sample are described in full in Table 1 ($N=22,705$). The mean age of participants was 31.5 ($SD=3.6$). Within our sample, 83.1% of participants were White, 5.1% were Latino/x or Hispanic, 4.9% were multiracial, 2.8% were Black, and 4.1% were other racial groups (see Table 1). The representation of gender identities was diverse: 33.9% transgender women, 29.9% transgender men, 33.8% non-binary, and 2.4% crossdressers. Participants also reported diverse sexual orientations: 21.3% queer, 17.8% pansexual, 14.7% bisexual, 12.6% heterosexual/straight, and the remaining (33.6%) identified other sexual orientations. The sample was highly educated, with 85.7% reporting at least some college. It is important to note that participants who accessed healthcare during the past 12 months ($n=22,705$), and were thus included in this analysis, had higher incomes ($p<.001$) and more education ($p<.001$) than individuals who had not accessed healthcare and were not included in this analysis ($n=3,743$; see Table 1).

At least one stressor in healthcare was reported by 66% of the participants in our sample. The most frequently endorsed stressor was answering “no” in response to the item “My doctor knew I was trans and treated [me] with respect” (Table 2). All stressors in healthcare showed differences across gender identities ($p<.05$).

Symptoms of Emotional Distress

The mean emotional distress score for the sample was 10.39, with a range of 0 to 24. For participants who experienced at least one stressor in healthcare during the past 12 months, there was a 0.10 increase in symptoms of emotional distress ($\beta=0.14$, $p<.001$, partial $\eta^2=0.03$). The participants' highest level of education, and individual income were held constant (see Table 3 for full results).

We found significant effects when testing the moderating role of gender identity in the association between exposure to stressors and symptoms of emotional distress. Individuals who identified as crossdressers ($\beta=-0.05$, $p<.01$, partial $\eta^2 = 0.001$) and non-binary people ($\beta=-0.05$, $p<.01$, partial $\eta^2 = 0.001$) who experienced stressors in healthcare had less symptoms of emotional distress than transgender women. However, transgender men who experienced stressors in healthcare had greater symptoms of emotional distress than transgender women ($\beta=0.03$, $p<.01$, partial $\eta^2 = 0.0003$).

In testing the moderating effect of race/ethnicity, Black GD people had greater emotional distress associated with exposure to stressors in healthcare when compared to White GD people ($\beta=0.06$, $p<.01$, partial $\eta^2 = 0.001$). No differences were found among other racial or ethnic groups.

All significant relationships between stressors and emotional distress had standardized beta coefficients ranging from $\beta=0.03$ to $\beta=0.14$. Partial eta squared values ranged from $\eta^2=0.0003$ to $\eta^2=0.03$. These coefficients would be interpreted as small effects sizes.^{35,36}

Symptoms of Physical Impairment

In our sample, 37.5% ($n=8,523$) of participants reported 1 or more symptoms of physical impairment. As shown in Table 4, participants reporting at least one stressor in healthcare during the past 12 months had 86% greater odds ($OR=1.86$, $p<.001$, 95% CI 1.74-1.98) of at least one symptom of physical impairment compared to participants who reported no stressors. The model adjusted for age, highest level of education, and individual income (see Table 4).

We found significant differences for two gender identity subgroups when compared to the reference group, transgender women. Individuals who identified as crossdressers had lower odds of healthcare stressors being associated with symptoms of physical impairment than did transgender women ($OR=0.36$, $p<.01$; 95% CI 0.20, 0.65). In contrast, transgender men who experienced stressors in healthcare had greater odds of healthcare stressors being associated with symptoms of physical impairment than did transgender women ($OR=1.20$, $p<.05$; 95% CI 1.03, 1.40). Tests for the moderating effect of race/ethnicity indicated no differences between racial/ethnic groups in the relationship between stressors in healthcare and symptoms of physical impairment.

Discussion

Results indicate that experiencing even one stressor in healthcare is associated with greater symptoms of emotional distress. These findings are consistent with previous literature describing discrimination as associated with poor mental health outcomes such as suicidal ideation,³⁷ depression,³⁸ and anxiety.³⁹ Discrimination in healthcare has also specifically been associated with suicidal ideation,¹¹ depression¹⁸ and psychological distress among GD people. Despite the significance of our results, all beta and eta squared coefficients indicate small effect

sizes, suggesting only modest relationships between exposure to stressors and emotional distress and the consequent need for further study.

Some of our most important findings center on the vulnerability of gender identity subgroups. The relationship between experiencing healthcare stressors and emotional distress was significantly stronger for transgender women than crossdressers or non-binary people. Although we can't assume a causal effect due to the cross-sectional nature of these data, results suggest that the emotional well-being of transgender women may be more adversely affected by the disrespect or discrimination they experience in healthcare than individuals in many other GD groups. This finding extends previous research showing that transgender women are highly stigmatized compared to the general population^{2,40} by providing evidence of potential effects of such stigmatization on their mental health. However, transgender men had an even greater association between healthcare stressors and symptoms of emotional distress than did transgender women. Because greater avoidance of healthcare has been noted among transgender men when they experience stressors in healthcare,¹⁷ delayed access to needed services could contribute to their increased symptoms of distress.

Our results for the moderating effect of race/ethnicity show differences between Black and White GD people but for no other racial/ethnic groups. Black participants had a greater effect size for the relationship between reported stressors and symptoms of emotional distress compared to White participants. While previous literature has found higher rates of stigma and discrimination among Black GD people,³⁸ our results indicate that these types of stressors may have a more substantial impact on the emotional well-being of Black GD people.

Results also indicate that GD people who experience stressors in healthcare have greater odds of physical impairment than individuals who don't experience stressors. Stressors in healthcare have been shown previously to have deleterious effects on physical health as well as on one's willingness to seek healthcare services.^{9,12,41} Individuals who have experienced mistreatment in healthcare settings may delay care, with negative effects on their physical health, or they may experience a greater impact on physical symptoms because they are more sensitized to healthcare stressors.¹² Because we cannot assume the direction of the relationship in these analyses, it is also possible that individuals who have more frequent healthcare visits because of impairments in physical functioning are more frequently exposed to stressors in healthcare.

Our findings for differences between gender identity subgroups in the relationship between healthcare stressors and physical functioning show a similar pattern as our results for emotional distress. Transgender men appeared to be at greatest risk of physical impairments in relation to healthcare stressors when compared to the other gender identity subgroups in our analysis. While research on mental health outcomes among gender identity subgroups is limited, there is some evidence that mental health disorders, such as anxiety, may be more prevalent among transgender men.⁴² Studies are needed to examine potential biological and psychosocial factors that may increase the potential for increased vulnerability of transgender men to healthcare stressors and symptom development.

There were no moderating effects of race/ethnicity on the relationship between reported stressors in healthcare and symptoms of physical impairment. A meta-analysis on the effects of racism in healthcare indicated that discrimination in healthcare settings had a greater association with mental health outcomes such as depression than with physical or general health.⁴³ This

could explain why we found that Black GD people experienced greater symptoms of emotional distress in relation to healthcare stressors than White participants but found no racial differences for physical impairment. However, despite our large sample, it is important to note that statistical power may be a root cause of our lack of more moderating effects for race and ethnicity. The proportion of racial and ethnic minority participants was small, with groups ranging from 0.2%-5%, in comparison to our White sample (81.4%). Further, in addition to improved efforts for gender affirming healthcare environments, multilevel antiracism efforts are needed to address inequities among GD people who are marginalized both in gender and racial identities.⁴⁴

Study limitations should be considered. The cross-sectional design prevents causal inferences about the direction of the relationship between stressors in healthcare and symptoms. In addition, items representing stressors in healthcare were only given to participants in the USTS survey who indicated that they had accessed healthcare in the past 12 months, eliminating some participants from analysis. As noted under the results, individuals who did not complete the survey appeared to have more socioeconomic challenges (lower incomes and less education), decreasing our ability to generalize to these important populations. Additionally, original items in the survey representing stressors in healthcare only offered participants the response options of 'yes' or 'no', precluding the ability to know the frequency or severity, or in what setting participants experienced each stressor. Further, social desirability bias may have influenced participant responses to sensitive questions, particularly around experiences of mistreatment or violence in healthcare settings. The mismatch between time frames assessed for health care stressors (the past 12 months) and symptoms of emotional distress (the past 30 days) may have limited our ability to identify concurrent associations between stressors and symptoms

experienced earlier in the year. Future work with more nuanced measurements of stressors in healthcare would help advance our understanding of this phenomenon,⁴⁵ particularly to assist in determining the clinical significance of these relationships.

Our need to dichotomize the variables measuring stressors in healthcare and symptoms of physical impairment (because of their skewed distributions) reduced variability and our power to detect significant effects.^{46,47} Because this was a secondary analysis, our measure of physical impairment was limited in scope, representing a small portion of the varied symptoms associated with impairments in physical functioning. As a result, we may have missed participants with symptoms of other impairments, some of which may not affect their daily function but none-the-less impact their health (*e.g.*, hypertension, diabetes). It is not clear whether the increase in symptom burden that was related to stressors for particular groups is due to their frequency of experiencing stressors in healthcare, the severity or intensity of particular stressors, the unique perception/interpretation of the stressor(s) by the individual, or other factors. Lastly, our sample was 83% White non-Hispanic, which is greater than population estimates for GD people in the U.S.⁴⁸ Similarly, Black & African American participants accounted for only 2.7% of our total sample but are estimated to account for 16% of the GD populations in the U.S.

Representativeness was also limited in terms of the educational status and income levels of our sample's participants. Our sample was highly educated with almost 40% of our sample reporting that they have a Bachelors' degree or higher. This varies from what is known about the education level of the broader GD populations, of whom 13% are estimated to have completed college as described by a population-based sample.⁴⁹ However, non-probability samples, such as the USTS,

allow for analysis of questions, such as stressors in healthcare, that are unique to the GD community and would be otherwise unaddressed in population-based surveys.⁵⁰

Still, this study provides an important foundation for future research. Further studies can explore the nature of stressors experienced by people of different gender identities as well as the frequency and severity of stressors. Findings also indicate a need for assessment of organizational and individual factors within healthcare systems that contribute to discrimination, abusive, or insensitive care for GD people. Additionally, future research should be extended to specific types of emotional distress and other physical impairments with a more diverse sample. Tailoring recruitment efforts to include both researchers and study personnel from the minoritized groups who are being sought, such as racial and ethnic minority groups, is a key component to effective recruitment practices.^{51,52}

Conclusions

Stressors in healthcare were associated with symptoms of emotional distress and physical impairment among GD people in our sample. Most notably, transgender men and Black participants had a greater symptom burden in association with stressors in healthcare when compared to transgender women and White participants. Increased research on the characteristics of stressors in healthcare and how these are experienced among diverse gender and racial groups will increase the opportunity for the development of targeted interventions. The development of affirming and inclusive healthcare environments that incorporate antiracism principles, including diversifying the healthcare workforce, should be prioritized to improve the healthcare experiences of diverse groups of GD people. Further, healthcare systems can employ a more inclusive workforce that reflects the communities they serve.

Acknowledgements

We would like to acknowledge the National Center for Transgender Equality for their tremendous effort in conducting survey and willingness to share the resulting data. We also wish to acknowledge the members of the transgender and nonbinary community for their time and effort to participate.

Author Statement

The United States Transgender Study was originally approved by the University of California, Los Angeles' North General Institutional Review Board. Full details regarding the survey can be found in the final report of its initial findings.² Due to the removal of identifiable data, this secondary analysis was determined to be exempt by the Institutional Review Board at the <blinded>. <Blinded> was supported in part by the National Institute of Nursing Research (Grant <BLINDED>). Contents are solely the responsibility of the authors and do not necessarily represent the views of the National Institute of Health. The authors have no conflicts of interest to report.

References

1. Soled KRS, Clark KD, Altman MR, et al. Changing language, changes lives: Learning the Lexicon of LGBTQ+ health equity. *Res Nurs Health*. 2022;n/a(n/a). doi:10.1002/nur.22274

2. James S, Herman J, Rankin S, Keisling M, Mottet L, Anafi M. The report of the 2015 US transgender survey. Published online 2016.
3. Valentine SE, Shipherd JC. A systematic review of social stress and mental health among transgender and gender non-conforming people in the United States. *Clin Psychol Rev.* 2018;66:24-38. doi:10.1016/j.cpr.2018.03.003
4. Streed CG Jr, McCarthy EP, Haas JS. Association Between Gender Minority Status and Self-Reported Physical and Mental Health in the United States. *JAMA Intern Med.* 2017;177(8):1210-1212. doi:10.1001/jamainternmed.2017.1460
5. Flentje A, Heck NC, Brennan JM, Meyer IH. The relationship between minority stress and biological outcomes: A systematic review. *J Behav Med.* Published online December 20, 2019. doi:10.1007/s10865-019-00120-6
6. Fredriksen-Goldsen KI, Cook-Daniels L, Kim HJ, et al. Physical and Mental Health of Transgender Older Adults: An At-Risk and Underserved Population. *The Gerontologist.* 2014;54(3):488-500. doi:10.1093/geront/gnt021
7. Powell HA, Stinson RD, Erbes C. Transgender and gender diverse veterans' access to gender-related health care services: The role of minority stress. *Psychol Serv.* 2022;19(3):455.
8. Delozier AM, Kamody RC, Rodgers S, Chen D. Health Disparities in Transgender and Gender Expansive Adolescents: A Topical Review From a Minority Stress Framework. *J Pediatr Psychol.* 2020;45(8):842-847. doi:10.1093/jpepsy/jsaa040
9. Cicero EC, Reisner SL, Silva SG, Merwin EI, Humphreys JC. Health Care Experiences of Transgender Adults: An Integrated Mixed Research Literature Review. *Adv Nurs Sci.* 2019;42(2):123-138.
10. Kcomt L. Profound health-care discrimination experienced by transgender people: rapid systematic review. *Soc Work Health Care.* 2019;58(2):201-219.
11. Romanelli M, Lu W, Lindsey MA. Examining mechanisms and moderators of the relationship between discriminatory health care encounters and attempted suicide among US transgender help-seekers. *Adm Policy Ment Health Ment Health Serv Res.* 2018;45(6):831-849.
12. Seelman KL, Colón-Díaz MJP, LeCroix RH, Xavier-Brier M, Kattari L. Transgender Noninclusive Healthcare and Delaying Care Because of Fear: Connections to General Health and Mental Health Among Transgender Adults. *Transgender Health.* 2017;2(1):17-28. doi:10.1089/trgh.2016.0024

13. Flentje A, Clark KD, Cicero E, et al. Minority Stress, Structural Stigma, and Physical Health Among Sexual and Gender Minority Individuals: Examining the Relative Strength of the Relationships. *Ann Behav Med.* 2021;(kaab051). doi:10.1093/abm/kaab051
14. Paradies Y, Truong M, Priest N. A Systematic Review of the Extent and Measurement of Healthcare Provider Racism. *J Gen Intern Med.* 2014;29(2):364-387. doi:10.1007/s11606-013-2583-1
15. Sommers MS, Fargo JD, Baker RB, Fisher BS, Buschur C, Zink TM. Health disparities in the forensic sexual assault examination related to skin color. *J Forensic Nurs.* 2009;5(4):191-200. doi:10.1111/j.1939-3938.2009.01054.x
16. Hausmann LR, Kressin NR, Hanusa BH, Ibrahim SA. Perceived racial discrimination in health care and its association with patients' healthcare experiences: does the measure matter? *Ethn Dis.* 2010;20(1):40.
17. Kattari SK, Atteberry-Ash B, Kinney MK, Walls NE, Kattari L. One size does not fit all: differential transgender health experiences. *Soc Work Health Care.* 2019;58(9):899-917.
18. Kattari SK, Bakko M, Hecht HK, Kattari L. Correlations between healthcare provider interactions and mental health among transgender and nonbinary adults. *SSM-Popul Health.* 2020;10:100525.
19. Howard SD, Lee KL, Nathan AG, Wenger HC, Chin MH, Cook SC. Healthcare Experiences of Transgender People of Color. *J Gen Intern Med.* 2019;34(10):2068-2074. doi:10.1007/s11606-019-05179-0
20. Kattari SK, Walls NE, Whitfield DL, Langenderfer-Magruder L. Racial and Ethnic Differences in Experiences of Discrimination in Accessing Health Services Among Transgender People in the United States. *Int J Transgenderism.* 2015;16(2):68-79. doi:10.1080/15532739.2015.1064336
21. Crenshaw K. Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *U Chi Leg F.* Published online 1989:139.
22. Crenshaw K. Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stan Rev.* 1990;43:1241.
23. Collins PH. *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment.* routledge; 2002.
24. Wesp LM, Malcoe LH, Elliott A, Poteat T. Intersectionality Research for Transgender Health Justice: A Theory-Driven Conceptual Framework for Structural Analysis of Transgender Health Inequities. *Transgender Health.* 2019;4(1):287-296. doi:10.1089/trgh.2019.0039

25. American Community Survey. United States Census. <https://www.census.gov/programs-surveys/acs>
26. National Center for Transgender Equality,. *2015 US Transgender Survey – Methodology Report.*; 2018.
27. Kessler RC, Andrews G, Colpe LJ, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol Med.* 2002;32(6):959-976. doi:10.1017/S0033291702006074
28. Kessler RC, Barker PR, Colpe LJ, et al. Screening for Serious Mental Illness in the General Population. *Arch Gen Psychiatry.* 2003;60(2):184. doi:10.1001/archpsyc.60.2.184
29. Kang Y kun, Guo W jun, Xu H, et al. The 6-item Kessler psychological distress scale to survey serious mental illness among Chinese undergraduates: Psychometric properties and prevalence estimate. *Compr Psychiatry.* 2015;63:105-112.
30. Lee S, Tsang A, Ng KL, et al. Performance of the 6-item Kessler scale for measuring serious mental illness in Hong Kong. *Compr Psychiatry.* 2012;53(5):584-592.
31. Centers for Disease Control and Prevention,. Behavioral Risk Factor Surveillance System. <https://www.cdc.gov/brfss/index.html>
32. Centers for Disease Control and Prevention,. National Health Interview Survey. <https://www.cdc.gov/nchs/nhis/index.htm>
33. Stata Corp. Stata Statistical Software: Release 15. Published online 2017.
34. Chen X, Ender P, Mitchell M, Wells C. Regression with Stata. Published 2003. Accessed December 27, 2022. <https://stats.idre.ucla.edu/stat/stata/webbooks/reg/default.htm>
35. Maher JM, Markey JC, Ebert-May D. The Other Half of the Story: Effect Size Analysis in Quantitative Research. *CBE—Life Sci Educ.* 2013;12(3):345-351. doi:10.1187/cbe.13-04-0082
36. Cohen J. *Statistical Power Analysis for the Behavioral Sciences.* Second edition. Lawrence Erlbaum Associates Inc; 1988.
37. Wolford-Clevenger C, Frantell K, Smith PN, Flores LY, Stuart GL. Correlates of suicide ideation and behaviors among transgender people: A systematic review guided by ideation-to-action theory. *Clin Psychol Rev.* 2018;63:93-105. doi:10.1016/j.cpr.2018.06.009
38. Jefferson K, Neilands TB, Sevelius J. Transgender women of color: discrimination and depression symptoms. *Ethn Inequalities Health Soc Care.* 2013;6(4):121.

39. Puckett JA, Maroney MR, Wadsworth LP, Mustanski B, Newcomb ME. Coping with discrimination: The insidious effects of gender minority stigma on depression and anxiety in transgender individuals. *J Clin Psychol.* 2020;76(1):176-194. doi:10.1002/jclp.22865
40. Balzer C, Hutta JS. *Transrespect versus Transphobia Worldwide: A Comparative Review of the Human-Rights Situation of Gender-Variant/Trans People.* Vol 6.; 2012.
41. White Hughto JM, Murchison GR, Clark K, Pachankis JE, Reisner SL. Geographic and Individual Differences in Healthcare Access for U.S. Transgender Adults: A Multilevel Analysis. *LGBT Health.* 2016;3(6):424-433. doi:10.1089/lgbt.2016.0044
42. Millet N, Longworth J, Arcelus J. Prevalence of anxiety symptoms and disorders in the transgender population: A systematic review of the literature. *Int J Transgenderism.* 2017;18(1):27-38. doi:10.1080/15532739.2016.1258353
43. Paradies Y, Ben J, Denson N, et al. Racism as a Determinant of Health: A Systematic Review and Meta-Analysis. *PLOS ONE.* 2015;10(9):e0138511. doi:10.1371/journal.pone.0138511
44. Hassen N, Lofters A, Michael S, Mall A, Pinto AD, Rackal J. Implementing anti-racism interventions in healthcare settings: a scoping review. *Int J Environ Res Public Health.* 2021;18(6):2993.
45. Clark KD, Luong S, Lunn MR, et al. Healthcare Mistreatment, State-Level Policy Protections, and Healthcare Avoidance Among Gender Minority People. *Sex Res Soc Policy.* Published online 2022:1-14.
46. Austin PC, Brunner LJ. Inflation of the type I error rate when a continuous confounding variable is categorized in logistic regression analyses. *Stat Med.* 2004;23(7):1159-1178. doi:10.1002/sim.1687
47. Altman DG, Royston P. The cost of dichotomising continuous variables. *BMJ.* 2006;332(7549):1080. doi:10.1136/bmj.332.7549.1080
48. Flores AR, Brown TN, Herman J. *Race and Ethnicity of Adults Who Identify as Transgender in the United States.* Williams Institute, UCLA School of Law Los Angeles, CA; 2016.
49. Meyer IH, Brown TN, Herman JL, Reisner SL, Bockting WO. Demographic characteristics and health status of transgender adults in select US regions: Behavioral Risk Factor Surveillance System, 2014. *Am J Public Health.* 2017;107(4):582-589.
50. Turban JL, Almazan AN, Reisner SL, Keuroghlian AS. The Importance of Non-Probability Samples in Minority Health Research: Lessons Learned from Studies of Transgender and Gender Diverse Mental Health. *Transgender Health.* Published online January 25, 2022. doi:10.1089/trgh.2021.0132

51. George S, Duran N, Norris K. A systematic review of barriers and facilitators to minority research participation among African Americans, Latinos, Asian Americans, and Pacific Islanders. *Am J Public Health*. 2014;104(2):e16-e31.
52. Reback CJ, Ferlito D, Kisler KA, Fletcher JB. Recruiting, Linking, and Retaining High-Risk Transgender Women Into HIV Prevention and Care Services: An Overview of Barriers, Strategies, and Lessons Learned. *Int J Transgenderism*. 2015;16(4):209-221. doi:10.1080/15532739.2015.1081085