


ORIGINAL ARTICLE

Proximal and distal minority stressors and mental health among young gay and bisexual men and other men who have sex with men (GBMSM) in Kisumu, Kenya

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Abstract

Young gay and bisexual men and other men who have sex with men (GBMSM) in Kenya experience pervasive intersectional stigma and discrimination, contributing to elevated levels of negative mental health symptoms. Grounded in the Minority Stress Model, this paper explores associations of proximal and distal minority stressors with three types of negative mental health outcomes among young HIV-negative GBMSM ($n = 63$) between the ages of 19–34 who participated in a pilot trial of a sexual health intervention. Using the PHQ-9, GAD-7, and PC-PTSD-5 screening measures, levels of clinically significant symptoms were reported as follows: 15.8% depressive symptoms, 12.7% anxiety symptoms, 31.7% posttraumatic stress symptoms. Results from stepwise linear regression analyses suggest that GBMSM-related stigma (distal stressor) was the strongest correlate for all three mental health outcomes, and concealment motivation (proximal stressor) was an additional significant correlate only in the depressive symptoms model. These findings should be viewed with caution and seen as initial observations given the small sample which limits our interpretations of the findings. Structural-level interventions are needed to decrease GBMSM's exposure to intersectional stigma and discrimination, such as decriminalization of same-sex sexual activity, as well as individual and group-level interventions that assist GBMSM with improving their adaptive coping strategies.

KEYWORDS

gay, Kenya, minority stress, mental health, stigma

Highlights

- Kenyan GBMSM are at elevated risk for negative mental health issues due to intersectional stigma and discrimination.
- GBMSM-stigma was strongly associated with higher levels of depression, anxiety, and PTSD symptoms.
- Multi-level interventions are needed to decrease stigma and improve mental health for Kenyan GBMSM.

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INTRODUCTION

Gay and bisexual men and other men who have sex with men (GBMSM) in Kenya experience high levels of intersectional oppression, as those in Kenyan society with power and privilege continue to uphold oppressive socio-cultural practices such as criminalization of same-sex sexual behavior and pervasive cultural and religious anti-GBMSM rhetoric and norms (Bertolt, 2019; Midoun et al., 2015; Mutua-Mambo, 2020). Prior research has suggested that these interlocking social-structural systems that marginalize GBMSM are likely contributors to pervasive acts of physical and sexual violence against GBMSM, as well as denial of education, housing, healthcare, and other basic human rights (Bhattacharjee et al., 2018; Ghoshal & Tabengwa, 2015; Kenya Human Rights Commission, 2011; Lewis et al., 2023). In a quantitative study conducted in Kisumu Kenya, 38% of GBMSM reported a lifetime history of experiencing sexual minority-based violence (Jauregui et al., 2021), while a qualitative study conducted with GBMSM in Kisumu and Nairobi described stigma and violence from family, friends, and romantic/sexual partners, including gay-baiting violence, blackmail, intimate partner violence, and commitment phobia (Lewis et al., 2023).

Experiences of intersectional stigma and discrimination have been found to be associated with negative sexual health outcomes for GBMSM in Kenya and elsewhere in Sub-Saharan Africa (Dada et al., 2024; Lewis et al., 2023; Lyons et al., 2023). For example, experiences of stigma, discrimination, and violence both in the community and in healthcare settings can create barriers to HIV prevention and care, thus resulting in disproportionately higher rates of HIV (Harper et al., 2015; Kunzweiler et al., 2018; Mwaniki et al., 2024; Zang et al., 2024). An increasing number of studies in Kenya have also demonstrated elevated levels of mental health challenges among GBMSM in Kenya (Doshi et al., 2020; Harper and Crawford et al., 2021; Korhonen et al., 2018; Secor et al., 2015). Harper and Crawford et al. (2021) found that 52% of GBMSM in Kisumu reported clinically significant PTSD symptoms and 28% reported clinically significant levels of depressive symptoms; while Doshi et al. (2020) found similar rates of clinically significant depressive symptoms (29.8%) among GBMSM in Nairobi along with 39.2% reporting harmful substance use. In Coastal Kenya, Secor et al. (2015) found that 38% of GBMSM reported suicidal ideation or self-harm more than half of the days in the past 2 weeks. Korhonen et al. (2018) compiled data from 1476 GBMSM in Kisumu, Nairobi, and Coastal Kenya and found that overall, 31% of participants reported clinically significant levels of depressive symptoms and 51% reported harmful alcohol use.

Several of these studies have included measures of psychosocial distress or mental health challenges within

large HIV-focused cohort studies or cross-sectional studies centered on HIV risk and resilience. Cohort studies have demonstrated that among GBMSM in Kenya, trauma is associated with elevated levels of HIV infection, lower levels of retention in HIV care, and less viral suppression (Kunzweiler et al., 2017; Kunzweiler et al., 2018; Secor et al., 2015). In addition, studies of HIV risk and resilience among GBMSM in Kisumu have demonstrated that depression and anxiety symptoms were associated with lower PrEP acceptability and posttraumatic stress symptoms were associated with lower condom use (Harper et al., 2015; Ogunbajo et al., 2019). In one of the few studies that did not include a focus on HIV, Jauregui et al. (2021) used data from a community-based sample of sexual and gender minority (SGM) people (not exclusively GBMSM) in Western Kenya to demonstrate relationships between experiences of violence and poor mental health outcomes (depressive symptoms and posttraumatic stress symptoms) grounded in the Minority Stress Model (Meyer, 2003).

The Minority Stress Model is helpful in explaining how violence and stigma experienced by minoritized persons can affect the mental health outcomes of these individuals, especially for GBMSM (Meyer, 2003). The model explains individual experiences of violence and discrimination against sexual and gender minorities (SGM) as distal minority stress processes, and the response to these experiences such as identity concealment and internalized stigma as proximal minority stressors. Meyers' minority stress model proposes that distal minority stress processes combined synergistically with proximal minority stressors, along with general life stressors (e.g., financial stress, political unrest), negatively impact mental health outcomes. Despite being originally developed in a U.S. context, the Minority Stress Model has proven to be effective as a tool for understanding the mental health of GBMSM in Kenya (Harper et al., 2021; Jauregui et al., 2021), as well as other parts of Sub-Saharan Africa such as Zambia and Nigeria (e.g., Armstrong et al., 2021; Ogunbajo et al., 2021a, 2021b).

While informative in describing the array of physical and mental health challenges that GBMSM in Kenya experience, most prior studies with this population (except for Jauregui et al., 2021) have not been grounded in theoretical or conceptual models that posit potential pathways to the development of negative mental health outcomes. Understanding these pathways can provide insights into effective interventions aimed at improving mental health and wellbeing. In addition, they have only included measures of anti-GBMSM violence enacted by external actors and have not included measures that capture the internalization of pervasive anti-GBMSM stigma and discrimination (proximal stressors). In addition, the mental health challenges assessed in prior GBMSM studies in Kenya have primarily focused on symptoms of depression and posttraumatic stress

disorder (PTSD) and not included measures of anxiety, despite prior studies in Kenya demonstrating concerning levels of anxiety symptoms among young people (Kenya Adolescent Mental Health Group, 2023; Memiah et al., 2022). Therefore, this paper advances our understanding of the relationships between anti-GBMSM stigma and mental health outcomes by including anxiety as one of the mental health challenges and exploring both external and internalized forms of stigma, using the Minority Stress Model (Meyer, 2003) as our guiding framework.

The analyses reported in this paper represent initial observations of potential associations between both proximal (i.e., internalized homonegativity, concealment motivation) and distal (i.e., GBMSM stigma) minority stressors with three types of mental health outcomes (i.e., symptoms of depression, PTSD, and anxiety) in a small sample of GBMSM who are not living with HIV ($n = 63$). Participants included GBMSM enrolled in a pilot trial of the *Shauriana Project* sexual health intervention in Kisumu, Kenya, and the data are from the initial baseline survey completed by all participants before the trial. Despite the small sample size which decreases our statistical power and limits our interpretations of the findings, we present the results of our analyses to give voice to a population of GBMSM who endure intense intersectional oppression and need visibility and community-based interventions. Our use of the Minority Stress Model provides a conceptual framework for understanding potential contributors to mental health challenges, thus offering guidance for the development of community-based interventions and programs that will address GBMSM-specific factors. Our hope is that these initial observations will lead to subsequent studies of factors related to mental health challenges for GBMSM in Kenya conducted with larger samples, and grounded in conceptual models of mental health such as the Minority Stress Model.

METHODS

Data for this paper come from a participatory research project conducted in Kisumu, Kenya named the *Shauriana* (“we counsel each other” in Kiswahili) *Project*. The collaborative research team consisted of university-based researchers in the U.S. and Kenya (including some who identify as gay), as well as leaders and members of GBMSM-led community-based organizations (CBO) based in Kisumu, Kenya. Leaders of the CBOs identified six local GBMSM team members who were vetted by the collaborative team and became the *Shauriana Project Development Team* (SPDT), led by a GBMSM community leader who was hired as the Project Coordinator. The overall goal of the *Shauriana Project*

was to collaboratively develop, implement, and evaluate a sexual health and mental health intervention to thwart the spread of HIV among young GBMSM in Kisumu ages 18–35. The data for this paper only come from the initial baseline survey completed by 63 participants who enrolled in a small randomized controlled trial (RCT) of the intervention to assess feasibility, acceptability, and safety with 6 months of follow-up. As previously stated, we acknowledge the limitations of conducting the following analyses using a small sample and interpret our results with caution.

Sample

Sixty-three GBMSM from Kisumu, Kenya who were not living with HIV completed a baseline study visit. Inclusion criteria were as follows: (1) biologically male at birth and currently identifies as a man, according to self-report; (2) 18 to 35 years of age inclusive; (3) resident in the Kisumu area for ≥ 12 months; (4) self-reported anal intercourse with a man in the past 3 months; (5) not currently taking PrEP for HIV prevention in the past 3 months; (6) willing to provide complete locator information; (7) willing to undergo all study procedures; (8) not currently participating in any HIV prevention or vaccine study; and (9) planning to remain in the study area for at least 6 months. Men were excluded if they were unable to understand the study purpose and procedures, unwilling to adhere to study procedures, currently under the influence of alcohol or drugs, or had a prior diagnosis of HIV infection. The average age of participants was 25.2 years (range: 19–34, SD: 4.3). Nearly thirty percent (28.5%) had completed a certificate or diploma, or had a bachelor's degree or above, and 7.9% were currently attending school. Almost forty percent (39.7%) were casual laborers or worked part-time and 42.9% were not working. See Table 1 for detailed participant characteristics.

Measures

All measures reported in this article are ones that have been used in prior research with GBMSM in Kisumu, Kenya by members of the collaborative research team and have been shown to be understood by GBMSM (Graham et al., 2020; Harper et al., 2015; Harper et al., 2021; Korhonen et al., 2022). Minor modifications were made to the phrasing in some measures to assure local understanding in both English and Kiswahili. We report Cronbach's alphas for the study measures based on our sample of 63 participants, with the realization that the small sample size may decrease the reliability of Cronbach's alpha coefficient, making it a less precise estimate of internal consistency.

TABLE 1 Sample Characteristics Including Sociodemographic Factors and Main Variables ($n = 63$).

| Sociodemographic Factors, Dependent Variables, and Independent Variables | mean (SD) or n (%) |
|---|--------------------|
| Age | |
| Mean (SD) | 25.2 (4.3) |
| Range | 19–34 |
| Highest education completed | |
| Completed primary/secondary school | 40 (63.4%) |
| Completed certificate/diploma | 14 (22.2%) |
| Completed bachelor's degree or above | 4 (6.3%) |
| Currently attending school | 5 (7.9%) |
| Employment status | |
| I work full-time | 8 (12.7%) |
| I work part-time or as a casual laborer | 25 (39.7%) |
| I work as a sex worker | 3 (4.7%) |
| I am not working | 27 (42.9%) |
| Mental Health Outcomes | |
| Depressive Symptoms: Patient Health Questionnaire (PHQ-9) | 5.48 (5.18) |
| No depressive symptoms (0 – 4) | 31 (49.2%) |
| Mild depressive symptoms (5 – 9) | 22 (34.9%) |
| Moderate depressive symptoms (10 – 14) | 5 (7.9%) |
| Moderately severe depressive symptoms (15 – 19) | 4 (6.3%) |
| Severe depressive symptoms (20 – 27) | 1 (1.6%) |
| Anxiety Symptoms: Generalized Anxiety Disorder 7 (GAD-7) | 4.35 (4.68) |
| Minimal anxiety symptoms (0 – 4) | 37 (58.7%) |
| Mild anxiety symptoms (5 – 9) | 18 (28.6%) |
| Moderate anxiety symptoms (10 – 14) | 5 (7.9%) |
| Severe anxiety symptoms (15 – 21) | 3 (4.8%) |
| Posttraumatic Stress Symptoms: Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) | 1.52 (1.94) |
| Probable PTSD (PC-PTSD-5 >= 3) | 20 (31.7%) |
| Proximal and Distal Minority Stressors | |
| GBMSM-related stigma (distal) | 3.08 (4.94) |
| Internalized homonegativity (proximal) | 8.13 (3.78) |
| Concealment motivation (proximal) | 15.05 (2.47) |

Note: For continuous variables, means and standard deviations (SD) are provided; for categorical variables, the number and percentage of participants endorsing a particular response or set of responses are provided.

Sociodemographic variables

All sociodemographic characteristics were self-reported and have been used in prior studies by the collaborative

research team members with GBMSM in Kisumu. Information regarding employment and education was collected using multiple-choice questions, and age was assessed through an open-ended question. Sexual orientation was assessed using a multiple-choice question with the following potential response options: bisexual, gay/homosexual, queer, straight/heterosexual, man who has sex with men, other, and don't know.

Dependent variables: Mental health outcomes

As with prior investigations of mental health challenges among GBMSM in Kenya, we assessed self-reported symptoms of major depressive disorders, generalized anxiety disorders, and posttraumatic stress disorders. The measures used to assess these areas of mental health distress were all screening tools that are typically used to identify probable cases of mental health disorders (PHQ-9: Kroenke et al., 2001; GAD-7: Spitzer et al., 2006; PC-PTSD-5: Prins et al., 2016). Since we did not conduct clinical interviews and these measures only report symptoms without any other contextual information that would be needed to make an accurate diagnosis, we refer to the scores on our mental health outcome measures as indications of “symptoms,” with higher scores indicating more severe levels of depressive, anxiety, or PTSD symptoms.

Although these three measures were developed and validated in the U.S., both the PHQ-9 and GAD-7 have been evaluated for their cultural appropriateness and validity in the Kenyan context among various groups including adolescents, nurses, midwives, and community health volunteers (Odero et al., 2023; Osborn et al., 2022; Tele et al., 2023). These studies have demonstrated that both the PHQ-9 and GAD-7 are unidimensional, reliable, and valid (both criterion validity and divergent validity) tools for screening for the probable presence of a major depressive disorder or generalized anxiety disorder, respectfully. Unfortunately, the PC-PTSD-5 has not undergone such rigorous psychometric evaluations, but we have used an earlier version of this measure in several studies with GBMSM in Kenya (e.g., Harper et al., 2021; Jauregui et al., 2021).

Depressive Symptoms. The PHQ-9 is a brief screening measure that assesses the probable presence of a major depressive disorder (MDD) using nine items that assess symptoms based on the nine diagnostic criteria for an MDD, as well as other leading major depressive symptoms (Kroenke et al., 2001). The questions ask about participants' experiences with being bothered by nine separate symptoms in the past 2 weeks, such as “feeling down, depressed, or hopeless” and “feeling tired or having little energy.” All questions were answered on a 4-point Likert scale from 0 = not at all to 3 = nearly every day, with total scores ranging from 0 to 27. Scores of 5, 10, 15, and 20 represent criterion cutoffs suggesting probable mild, moderate, moderately severe, and severe depressive symptoms, respectively; and a score of 10 or greater is generally considered to

represent “clinically significant” levels of depressive symptoms (Kroenke et al., 2001). Cronbach's alpha of the PHQ-9 scale in our study participants was 0.85, indicating good internal consistency.

Anxiety Symptoms. The GAD-7 is a brief screening measure that assesses the probable presence of a generalized anxiety disorder (GAD), where the seven items assess symptoms that are part of the diagnostic criteria for GAD or are present in other prominent anxiety scales (Spitzer et al., 2006). Although GAD and MDD co-occur, Spitzer et al.'s (2006) factor analysis with both the PHQ-9 and GAD-7 confirmed that these instruments measure distinct psychological phenomena and that anxiety and depressive symptoms have independent effects on functional impairment. The questions in the GAD-7 ask about participants' experiences with being bothered by seven separate symptoms in the past 2 weeks, such as “feeling nervous, anxious or on edge” and “not being able to stop or control worrying.” All questions were answered on a 4-point Likert scale from 0 = not at all to 3 = nearly every day, with total scores ranging from 0 to 21. Like the PHQ-9, scores of 5, 10, and 15 represent criterion cutoffs suggesting probable mild, moderate, and severe levels of anxiety symptoms; and a score of 10 or greater is generally considered to represent “clinically significant” *p* levels of anxiety symptoms (Spitzer et al., 2006). The Cronbach's alpha of the GAD-7 in the current study was 0.89, indicating good internal consistency.

Posttraumatic Stress Symptoms. The Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) is a brief screening measure that assesses the probable presence of posttraumatic stress disorder (PTSD) in primary care settings using items that assess five of the twenty symptoms used in diagnosing PTSD (Prins et al., 2016). The measure first assesses lifetime exposure to traumatic events, followed by five items that assess symptoms experienced in the past month because of the trauma such as “Felt numb or detached from people, activities, or your surroundings” and “Been constantly on guard, watchful, or easily startled.” Each item receives a score of 1 if it was present in the past month, with scores ranging from 0 to 5. A score of 3 or greater is generally considered to represent “clinically significant” levels of posttraumatic stress symptoms, indicating the need for further assessment with a structured interview for PTSD by a mental health professional or a more extensive psychometrically sound self-report measure (Weathers et al., 2013). Cronbach's alpha of the PC-PTSD-5 scale in our study participants was 0.90, indicating excellent internal consistency.

Independent variables: Distal and proximal stressors

Distal Stressor: GBMSM-related Stigma. The modified version of Neilands' sexual stigma scale (Neilands et al., 2008)

was adapted for use with GBMSM in Kenya by Secor et al. (2015) and later shown to be a reliable and valid (construct validity) measure of GBMSM-related stigma for GBMSM in Kenya (Korhonen et al., 2022). The measure assesses both perceived and enacted stigma experienced by GBMSM based on their sexual behavior with other men. Perceived stigma focuses on expectations of discriminatory rhetoric and future acts of discrimination based on one's identity and actions, whereas enacted stigma represents direct experiences with discrimination and violence. Sample items included “In the past 3 months, how often have you been made fun of or called names because you have sex with men?” and “In the past 3 months, how often have you been denied services at a bar, restaurant, or club because you have sex with men?” Each item receives a score of 0-3, based on the frequency of experiencing each type of stigma (never, once or twice, a few times, many times), with higher scores indicating greater GBMSM-related stigma. We used the full stigma scale which included both perceived and enacted stigma. The Cronbach's alpha coefficient for the sexual stigma scale in this study sample was 0.87, indicating good internal consistency.

Proximal Stressors: Internalized Homonegativity and Concealment Motivation. The Lesbian, Gay, and Bisexual Identity Scale (LGBIS) assesses eight dimensions of lesbian, gay, and bisexual (LGB) identity that have been examined in both clinical and theoretical literature (Mohr & Kendra, 2011). Given our focus on the Minority Stress Model, we only included two subscales, internalized homonegativity (IH) and concealment motivation (CM), to represent forms of proximal stressors. This measure was developed in the U.S., and although it has been used in prior studies with GBMSM in Kenya, we are not aware of any psychometric validation data for Kenyan GBMSM, and only internal consistency data for internalized homonegativity with a Cronbach's alpha of 0.77 among 500 GBMSM in Kisumu (Harper et al., 2015). Each subscale included three items, such as “If it were possible, I would choose to be straight” (IH) and “I keep careful control over who knows about my same-sex romantic relationships” (CM). Each item has response options ranging from 1 (disagree strongly) to 6 (agree strongly), with each possible subscale score ranging from 3 to 18. Higher total scores indicate higher levels of IH and CM. The Cronbach's alpha was 0.62 for both the IH subscale and the CM subscale in this study sample, indicating questionable internal consistency.

Procedures

Participants were recruited using various network sampling strategies, including existing peer networks of our CBO partners and SPDT members and venue-based network referrals. All interested and potentially eligible participants identified through this sampling strategy were given an inconspicuous study business card and

were referred to a GBMSM-focused and affirming community clinic where study activities occurred for eligibility screening.

A brief permission script was used to confirm consent for screening, after which a research team member collected basic sociodemographic data, conducted a brief risk behavior assessment, provided an overview of the study, and obtained informed consent from individuals who were eligible and willing to participate. Consent forms were available in English, Kiswahili, and Dholuo (local language), and all research team members interacting with participants were fluent in all three languages and thus conducted the screening and consent process in the language(s) most comfortable for the participant. Men who were found to be ineligible were referred by research team members to HIV prevention or care programming as indicated. Locator information was collected from all enrolled participants to ensure they could be traced in the event of a missed study visit since data collection was part of a small RCT.

Following the informed consent process, the research team member escorted the participant to a private cubicle with a computer in a clinic room designated for the study. The research team member then oriented the participant to the computer and the audio computer assisted self-interview (ACASI) through which the baseline survey was completed, assuring that the participant could clearly hear the survey items using the headset. Participants were given the option of completing the ACASI in English, Kiswahili, or Dholuo. While the participant completed the ACASI, a designated research team member was on standby to assist the participant with any questions or concerns. Following the completion of the ACASI, the participant was escorted to a private room to meet individually with the HIV test counselor, followed by a visit with the study clinician to complete the remaining biomedical aspects of the study visit (e.g., HIV testing). Once all study-related activities were completed, the participants met with the clinic receptionist to schedule their next appointment and to receive their compensation. All study protocols and procedures were approved by the Internal Review Boards/Ethics Review Committees of the University-based researchers (i.e., Maseno University, University of Michigan, University of Washington).

Statistical analysis

Descriptive statistics (mean, standard deviation, etc.) were used to summarize participants' characteristics, and correlation coefficients among main study variables were calculated. To examine the associations between independent and dependent variables, three different stepwise linear regression models were conducted to examine the associations of sexual stigma, IH, and CM, with each outcome (i.e., PHQ-9, GAD-7, and PC-PTSD-5 scores).

In all three models, the first step included only age as a sociodemographic predictor. The second step added the proximal stressors (IH and CM). The third step added GBMSM-related stigma as a distal stressor. For each model, betas, standard errors, and *p* values for all included variables were tabulated, along with the model's *r*-squared statistic (i.e., the percent of variability accounted for by that model). This stepwise procedure was completed for each of the three mental health outcomes. All statistical analyses were conducted using R software.

RESULTS

The mean values for the PHQ-9 and GAD-7 among our participants were 5.48 and 4.35, respectively (standard deviation: 5.18 and 4.68). Only 15.8% of participants received a score of 10 or greater on the PHQ-9, indicating clinically significant levels of depressive symptoms, while 50.8% reported mild to severe depressive symptoms. The pattern for anxiety symptoms was similar with slightly lower rates, with 12.7% of participants receiving a score of 10 or greater on the GAD-7 indicating clinically significant levels of anxiety symptoms, and 41.3% reporting mild to severe anxiety symptoms. Almost a third (31.7%) of participants endorsed three or more posttraumatic stress symptoms, indicating a probable diagnosis of PTSD and a need for further evaluation. Descriptive statistics on participants' self-reported mental health characteristics are included in Table 1.

Pearson's correlations among main study variables are shown in Table 2. GBMSM-related stigma was positively correlated with PHQ-9, GAD-7, and PC-PTSD-5 ($p < .01$ for all). Internalized homonegativity had a positive correlation with concealment motivation and PC-PTSD-5 ($p < .05$). Finally, age was positively correlated with both PHQ-9 and GAD-7 ($p < .01$ for each).

Depressive symptoms

The results of the stepwise linear regression analyses are provided in Table 3. For depressive symptoms, in Step 1 age was significantly associated with PHQ-9 score, explaining 10.4% of the variance ($b = 0.41$, $p < .01$). IH and CM were not statistically significant when added to Step 2. When GBMSM-related stigma was added in the third step, the model explained 33.2% of the variance ($b = 0.50$, $p < .01$), and CM became a significant predictor of PHQ-9 ($b = 0.53$, $p = .03$).

Anxiety symptoms

Like the findings with depressive symptoms, the analyses for anxiety symptoms revealed that age was a significant correlate of GAD-7 score, but IH and CM were not.

TABLE 2 Correlation Matrix of Main Study Variables.

| | | 1 | 2 | 3 | 5 | 6 | 7 | 8 |
|---|-----------------------------|--------|--------|------|--------|--------|------|---|
| 1 | GBMSM Stigma | – | | | | | | |
| 2 | Internalized homonegativity | -0.07 | – | | | | | |
| 3 | Concealment motivation | -0.09 | 0.35** | – | | | | |
| 4 | PHQ-9 | 0.52** | -0.09 | 0.19 | – | | | |
| 5 | GAD-7 | 0.55** | 0.07 | 0.19 | 0.83** | – | | |
| 6 | PC-PTSD-5 | 0.35** | 0.25* | 0.21 | 0.46** | 0.48** | – | |
| 7 | Age | 0.24 | -0.01 | 0.19 | 0.34** | 0.33** | 0.22 | – |

* $p < .05$; ** $p < .01$.

TABLE 3 Stepwise Multiple Linear Regression Analyses ($n = 63$).

| | PHQ-9 | | | GAD-7 | | | PTSD | | |
|-----------------------------|---------------|----------|-----------------------|---------------|----------|-----------------------|---------------|----------|-----------------------|
| | <i>b (SE)</i> | <i>p</i> | <i>R</i> ² | <i>b (SE)</i> | <i>p</i> | <i>R</i> ² | <i>b (SE)</i> | <i>p</i> | <i>R</i> ² |
| Step 1 | | | 0.104 | | | 0.084 | | | 0.032 |
| Age | 0.41 (0.15) | <0.01** | | 0.36 (0.13) | <0.01** | | 0.10 (0.06) | 0.08 | |
| Step 2 | | | 0.113 | | | 0.096 | | | 0.074 |
| Age | 0.37 (0.15) | 0.01* | | 0.34 (0.14) | 0.01* | | 0.09 (0.06) | 0.11 | |
| Internalized homonegativity | -0.21 (0.18) | 0.24 | | 0.03 (0.16) | 0.84 | | 0.11 (0.07) | 0.10 | |
| Concealment motivation | -0.40 (0.27) | 0.15 | | 0.23 (0.25) | 0.35 | | 0.08 (0.10) | 0.47 | |
| Step 3 | | | 0.332 | | | 0.333 | | | 0.117 |
| Age | 0.21 (0.13) | 0.11 | | 0.19 (0.12) | 0.12 | | 0.05 (0.05) | 0.37 | |
| Internalized homonegativity | -0.20 (0.15) | 0.20 | | 0.05 (0.14) | 0.74 | | 0.11 (0.06) | 0.08 | |
| Concealment motivation | 0.53 (0.24) | 0.03* | | 0.37 (0.22) | 0.09 | | 0.11 (0.10) | 0.26 | |
| GBMSM-related stigma | 0.50 (0.11) | <0.01** | | 0.50 (0.10) | <0.01** | | 0.14 (0.05) | <0.01** | |

* $p < .05$; ** $p < .01$.

When GBMSM-related stigma was added to the model, it was a significant correlate of GAD-7 score ($b = 0.50$, $p < .01$) and the model explained 33.3% of the variance.

Post traumatic stress symptoms

In the model assessing correlates of PC-PTSD-5, only GBMSM-related stigma was found to be an associated factor in all steps with a beta in the final model of 0.14 ($p < .01$), after adjustment for age, IH, and CM. The full final model explained 11.7% of the variance.

DISCUSSION

Kenyan GBMSM are at elevated risk for negative mental health outcomes due to the health-deteriorating effects of pervasive and entrenched anti-GBMSM stigma and discrimination, as well as other forms of societal and

cultural oppression and violence experienced by this minoritized population (Harper et al., 2021; Harper, Lewis, et al., 2021; Jauregui et al., 2021; Lewis et al., 2023; Midoun et al., 2015). The Minority Stress Model (Meyer, 2003) offers insights into stress-related factors that may contribute to elevated rates of mental health concerns among SGM communities, and the utility of this framework in Kenya and other parts of sub-Saharan Africa have been demonstrated (Armstrong et al., 2021; Harper et al., 2021; Jauregui et al., 2021; Ogunbajo et al., 2021b). In this article we present initial explorations regarding potential associations of distal minority stressors (i.e., GBMSM-related stigma) and proximal minority stressors (i.e., identity concealment and internalized homonegativity) with three different negative mental health outcomes: depressive symptoms, anxiety symptoms, posttraumatic stress symptoms. Given our small sample size, our findings should be interpreted with caution and serve as initial explorations of potential relationships among the variables of interest.

Levels of negative mental health symptoms

As previously stated, the measures used to assess negative mental health outcomes were all screening tools that are typically used to identify probable cases of mental health disorders and should not be considered diagnostic. We refer to the scores on our mental health outcome measures as indications of “symptoms,” with higher scores indicating more severe levels of depressive, anxiety, or PTSD symptoms. Thus, data regarding the percentage of participants who reported clinically significant levels of symptoms should not be interpreted as prevalence rates for the mental health conditions we assessed.

We found that 15.8% of participants reported clinically significant levels of depressive symptoms that were indicative of a probable MDD diagnosis (i.e., a score of 10 or greater on the PHQ-9), while 49.2% achieved scores that were indicative of no depressive symptoms. The levels of clinically significant depressive symptoms among GBMSM in other studies in Kenya were higher and were assessed on much larger samples in Kisumu (28%; $n = 336$), Nairobi (29.8%; $n = 595$), and combined data from Kisumu, Nairobi, and Coastal Kenya (31%; $n = 1476$) (Doshi et al., 2020; Harper et al., 2021; Korhonen et al., 2018). The pattern for anxiety symptoms was similar but lower than that found for depressive symptoms, as only 12.7% of participants reported clinically significant levels of anxiety symptoms indicative of a probable GAD diagnosis (i.e., a score of 10 or greater on the GAD-7), and 58.7% received a score on the GAD-7 indicating minimal levels of anxiety symptoms. Unfortunately, we are not aware of other samples of GBMSM in Kenya that have used the GAD-7 so we are not able to provide comparisons of our findings to those of others, and look forward to future studies including this important mental health measure, especially given the validation work that has been conducted in Kenya for the GAD-7.

Finally, less than a third of our sample (31.7%) reported symptoms on the PC-PTSD-5 that were indicative of a probable diagnosis of PTSD (i.e., a score of 3 or greater on the PC-PTSD-5). This level of clinically significant posttraumatic stress symptoms is lower than our prior work, where 52.4% of GBMSM met the criteria for a probable PTSD diagnosis. This prior sample was much larger and was an anonymous convenience sample collected throughout four western counties in Kenya (Kisumu, Siaya, Bungoma, and Kakamega Counties) by members of various LGBTQ+ CBOs as part of a regional needs assessment, thus there was likely greater variability in the types of individuals who participated. In addition, the measure used in the prior study (PC-PTSD) had fewer items and was aligned with an earlier version of the *Diagnostic and Statistical Manual of Mental Disorders* (Prins et al., 2016) which may have influenced the number of participants that qualified for the newer diagnostic threshold in the current study.

One potential explanation for our lower levels of negative mental health symptoms when compared to prior studies is that our participants were a small, self-selected sample of 63 GBMSM who voluntarily agreed to participate in a pilot RCT that required multiple study visits across a 6-month period, including clinic visits for blood draws and other bio-specimens, completion of multiple surveys, and for those in the “treatment” arm, participation in six sessions with a peer educator. Therefore, the participants in the current study may represent a subset of the larger GBMSM community with a greater level of stability needed to actively participate in all phases of the study. In addition, we recruited through network sampling strategies centered on CBOs. These CBOs provide a range of support services to GBMSM in Kisumu, so it may be that our current sample was more connected to community resources and GBMSM affinity groups, which have been shown to support the health and well-being of GBMSM in Kenya (Doshi et al., 2020).

Finally, the samples in the Korhonen et al. (2018), Secor et al. (2015), and Doshi et al. (2020) datasets that we used for comparisons were either predominately GBMSM living with HIV or GBMSM who identified as male sex workers—two highly stigmatized groups in Kenya—and none of our participants were living with HIV and only 4.7% identified as sex workers. Based on the Minority Stress Model and the negative influences of intersectional oppression, the predominance of these additional minoritized social categories may have contributed to elevated levels of negative mental health symptoms in the other studies.

Powerful influence of GBMSM-related stigma on mental health

The results of the stepwise linear regression analyses clearly indicated that the distal minority stressor of GBMSM-related stigma was the strongest correlate of all three negative mental health outcomes. For depressive symptoms, when GBMSM-related stigma was added to the regression equation, the model explained 33.2% of the variance, increasing from 11.3% of the variance when just age and proximal stressors (concealment motivation and internalized homonegativity) were included. Like depressive symptoms, GBMSM-related stigma explained 33.3% of the variance when added to the regression equation for anxiety symptoms, up from 9.6% with just age and proximal stressors. For posttraumatic stress symptoms, GBMSM-related stigma was the only statistically significant correlate in the final regression model, which explained only 11.7% of the variance in this outcome. Only one of the two proximal stressors that we assessed was a statistically significant correlate in any of the stepwise linear regression models (concealment motivation), which became significant in the depressive

symptom model after GBMSM-related stigma was added in step four. The relatively low Cronbach's alpha for both proximal stressor variables of 0.62 may have played a role in their lack of significance, as well as the fact that these measures of concealment motivation and internalized homophobia have not been adequately validated with samples of GBMSM in Kenya and thus may not be capturing the true experiences of proximal stressors for these men.

Although the findings from these linear regression analyses should be interpreted with caution given the small sample size, this initial exploration suggests that for GBMSM in Kisumu, distal stressors such as GBMSM-related stigma may have a strong relationship with depressive symptoms, anxiety symptoms, and post-traumatic stress symptoms. Even though this variable was entered into the multi-variable equation after the inclusion of proximal minority stressors, it still accounted for the highest amount of variance in all regression equations. This suggests that efforts to decrease the development of negative mental health challenges may be most effective when they either focus on decreasing GBMSM's exposure to stigma and discrimination or focus on assisting GBMSM with developing strategies to counter the negative mental health effects of stigma and discrimination. Since the latter approach puts a greater burden on a population that already experiences intersectional oppression and does nothing to change socio-cultural structures that perpetuate such oppression and violence, future efforts should prioritize decreasing distal stressors that serve to negatively impact the mental health and wellbeing of GBMSM in Kenya. Since such systemic and social-structural changes typically require prolonged engagement of critical stakeholders who are willing to challenge the status quo, interventions that help GBMSM develop strategies to counter the negative effects of stigma and discrimination are necessary now to support GBMSM communities while societal change is in motion.

Implications for mental health interventions and social change

Given the endemic and pervasive nature of anti-GBMSM stigma and discrimination in Kenya, future interventions are needed at multiple socioecological levels to improve the mental health of GBMSM. At the individual, dyadic, and group levels, mental health interventions could focus on challenging proximal stressors, such as anti-GBMSM messages and beliefs that young men internalize when they are exposed to a constant barrage of distal stressors. This could be done with GBMSM-focused critical consciousness interventions whereby participants develop a critical awareness of societal, historical, political, and cultural forces that serve to oppress minoritized groups of people and learn how to disrupt these oppressive

forces through resistance and social change (Harper et al., 2019; Harper et al., 2023). These programs can be guided by Freire's (1974, 1976, 2000) liberatory pedagogy for enhancing critical consciousness, as he asserts that this transformative process can help individuals and groups such as GBMSM resist the negative effects of oppression and move into a state of liberation and well-being. As critical consciousness is enhanced and developed, GBMSM can become more aware of the power differentials and multiple points of asymmetry that exist in society (Watts et al., 1999) and move toward acts of resistance and liberation, both of which promote mental health and well-being (Nelson & Prilleltensky, 2010; Prilleltensky & Nelson, 2002).

Another intervention approach that could be adapted to improve the mental health and well-being of GBMSM in Kenya is Transdiagnostic LGBTQ-Affirmative Cognitive-Behavioral Therapy (Pachankis, 2018; Pachankis, Harkness, Jackson, et al., 2022), delivered either in individual or group-based settings. Interventions that use this approach, such as the Effective Skills to Empower Effective Men (ESTEEM) program, address young GBMSM's cognitive, affective, and behavioral reactions to minority stress and have been shown to improve mental health and wellbeing, especially for Black and Latinx GBMSM in the U.S. (Keefe et al., 2023; Pachankis, Harkness, Maciejewski, et al., 2022; Pachankis et al., 2015). This therapeutic approach is grounded in the Minority Stress Model (Meyer, 2003) and focuses on damaging reactions to distal GBMSM stressors including anxious expectations of rejection, identity concealment, internalized homophobia, social isolation, and difficulties expressing emotions (Pachankis, Harkness, Jackson, et al., 2022; Pachankis, Harkness, Maciejewski, et al., 2022). Transdiagnostic affirming cognitive-behavioral interventions help participants understand that the source of their mental distress is in hostile and discriminatory environments (distal), not within the individual. They also help participants to challenge negative self-beliefs that develop because of chronic exposure to anti-GBMSM stigma and discrimination, and to build a set of affirming and empowering coping skills and strategies that can be utilized in oppressive situations (Pachankis, Harkness, Jackson, et al., 2022; Pachankis, Harkness, Maciejewski, et al., 2022).

Structural-level interventions are also needed to decrease GBMSM's exposure to distal minority stressors. These interventions could include the decriminalization of same-sex sexuality and the introduction of hate-crime laws that would enhance criminal sentences of those who intentionally harm SGM people. These policy-level measures not only provide GBMSM and other SGM people with legal protection but also send a strong message that Kenyan GBMSM are indeed Kenyans and should enjoy all the same human rights and freedoms as others. This is in alignment with the 2010 Kenyan

Constitution which assures that “Every person is equal before the law and has the right to equal protection and equal benefit of the law.”

Another structural level intervention that could help to decrease distal minority stressors and improve the mental health and well-being of GBMSM in Kenya is increased sensitization and SGM cultural humility training programs for professionals working in various institutions and settings such as schools/colleges/universities, physical and mental healthcare facilities, government agencies, and civil society organizations. Some success has been documented with GBMSM-sensitivity training programs for healthcare workers in Kenya, with the authors calling for policies to actively involve GBMSM in the healthcare system to reduce stigma in these settings (van der Elst et al., 2013; van der Elst et al., 2015). Cultural humility programs that have been developed to make healthcare settings more affirming and supportive of SGM young people in the US could be adopted and implemented in Kenya with a specific focus on mental health providers (Jadwin-Cakmak et al., 2020; Sirdenis et al., 2019). Unfortunately, many parts of Kenya have limited mental health services and limited mental health providers, especially those that are equipped to address the mental health concerns of young people and GBMSM (Harper et al., 2021; Memiah et al., 2022; Ministry of Health: The Taskforce on Mental Health, Kenya, 2020).

In addition to these multi-level interventions to increase the mental health and wellbeing of GBMSM in Kenya, interventions focused on other pressing health issues, such as HIV prevention and treatment, should also address proximal and distal minority stressors and mental health among GBMSM. The *Shauriana Project* intervention that was evaluated in the parent study from which these data were taken, is a peer-delivered intervention for young GBMSM in Kenya that takes a holistic approach to HIV prevention by addressing both sexual health and mental health and is grounded in both the Minority Stress Model (Meyer, 2003) and Empowerment Theory (Zimmerman, 1995, 2000). Through weekly one-on-one sessions, participants learn about HIV and sexually transmitted infection (STI) prevention strategies and other relevant topics such as mental health, stigma, adaptive coping, and healthy relationships. Peer facilitators support participants in identifying their needs and setting achievable goals related to HIV/STI prevention methods, as well as goals that will support their mental health and well-being in a way that respects participants’ autonomy.

Strengths, limitations, and future research

The impetus for this study was requests from members of the GBMSM community to join with them to create an intervention that would address the range of

socioecological factors that influence their HIV risk and protective behaviors. The analyses in this paper were also conducted in reaction to stories of GBMSM in the community experiencing intersectional stigma, discrimination, and violence across many sectors of their lives. A unique strength of the *Shauriana Project* study, from which the data for this paper were taken, is that the research team members who were part of the SPDT were all GBMSM from the surrounding community, and thus assured that all study protocols and procedures were acceptable and feasible for GBMSM community members. In addition, our authors include members of the GBMSM community in Kenya who actively participated in all phases of the study conceptualization, implementation, analysis, and now dissemination.

Since the data analyzed in this paper were taken from the baseline data of a small RCT, the sample size was relatively small ($N = 63$) which limited our ability to conduct more complex and robust statistical analyses. Our small sample size also decreases our statistical power and limits our interpretations of the findings from the analyses we conducted. Thus, we conceptualize our analyses as initial explorations that should be viewed with caution. Our use of a network-based sampling strategy likely resulted in a sample that has more connections to CBOs and other GBMSM-affirming services, so they may not be representative of the larger GBMSM community in Kisumu. Finally, the purpose of the parent study from which these data came was not focused on specifically assessing the various components of the Minority Stress Model, so we did not have access to well-validated measures that would assess other constructs in the model.

Future research is needed to develop a more nuanced and complex understanding of how the Minority Stress Model constructs are related to each other for GBMSM in Western Kenya using a larger sample size and psychometrically sound measures that were specifically developed to assess these constructs. One area of focus in such future investigations should be examining the potential moderating effect of coping, social support, and other resilience-focused processes, as such information would be helpful in assisting with the development of future prevention and treatment programs that address mental health concerns among GBMSM in Kenya.

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