Psychology of Sexual Orientation and Gender Diversity

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Despite advancements in lesbian, gay, and bisexual (LGB+) rights and visibility, there remains a significant gap in understanding the nuanced experiences of subtle discrimination faced by sexual minorities in Brazil, particularly regarding the impact on their mental health. This research examines the role of sexual orientation microaggressions in shaping mental health outcomes among Brazilian LGB+ individuals. Specifically, we investigate the association between experiences of microaggressions and depression, anxiety, and stress symptoms within this community. Throughout four studies ($N = 678$), we examined the association between sexual orientation microaggressions and depression, anxiety, and stress symptoms in Brazilian LGB+ individuals by first ensuring the content, factorial, convergent-discriminant validity, and internal consistency of the Brazilian Portuguese version of the Sexual Orientation Microaggressions Scale (SOMS-br). The findings show that experiences of microaggressions based on sexual orientation were associated with decreased mental health in Brazilian LGB+ individuals. Moreover, the adapted items of the SOMS-br were psychometrically suitable to assess individual differences in microaggressions experienced by the Brazilian LGB+ community. Taken together, these results emphasize the psychometric validity of SOMS in measuring microaggressions in the Brazilian context. Furthermore, we provide the first evidence that sexual microaggressions impact mental health indicators in the Brazilian LGB+ community. Theoretical and practical implications of the literature are both discussed.

Public Significance Statement
Besides providing robust empirical evidence of content validity, construct validity, and predictive validity for the Sexual Orientation Microaggressions Scale in the Brazilian context, the findings from this research program provide the first evidence that sexual orientation microaggressions impact mental health indicators (i.e., depression, anxiety, and stress) in the Brazilian lesbian, gay, and bisexual community.

Keywords: sexual and gender minorities, microaggressions, psychometrics, mental health inequalities

Despite the increasing efforts of progressive social movements to ensure human rights for marginalized groups, health inequalities persist between sexual minorities, including lesbian, gay, and bisexual (LGB+) individuals, when compared to their heterosexual counterparts worldwide (Liu et al., 2023). These inequalities are particularly entrenched in non-WEIRD (Western, Educated, Industrialized, Rich, and Democratic) societies like Brazil, where efforts to recognize and support minority sexual groups often face resistance (Figueiredo & Pereira, 2021; Terra et al., 2022; Torres et al., 2021). Consequently, belonging to a social minority can engender stress due to a heightened awareness of being devalued and marginalized (Brooks, 1981; Meyer, 2003; Meyer & Frost, 2013), detrimentally affecting one's overall health. These stressors, known as minority stressors (Frost & Meyer, 2023), stem from processes of exclusion and devaluation of minority social identity, including microaggressions (Smith et al., 2023). Assessing the impact and severity of these microaggressive stressors is crucial for understanding the psychological mechanisms perpetuating or mitigating health inequalities among LGB+ individuals in Brazil.

Sexual Orientation Microaggressions and LGB+ Mental Health

Microaggressions, as conceptualized by Sue et al. (2007), represent subtle yet pervasive forms of discrimination. These insidious acts often manifest as fleeting verbal, behavioral, or environmental slights (Sue, 2010), conveying hostile, derogatory, or negative messages toward individuals or social groups (K. L. Y. Nadal, 2023). In the context of sexual orientation, microaggressions assume a distinct dimension, encapsulating the subtle discriminatory encounters faced by nonheterosexual individuals across various spheres of life, including work, school, social settings, and familial environments. Building upon this framework, K. L. Nadal et al. (2016) proposed a taxonomy delineating different domains of sexual orientation microaggressions experienced by LGB+ individuals, such as microinvalidations and environmental microaggressions. Examples of these microaggressions include discouraging children from interacting with LGB+ individuals, using phrases like "that's so gay" disparagingly, or withdrawing from social interactions upon learning someone's nonheterosexual orientation (K. L. Y. Nadal, 2023).

Recent studies have underscored the significance of examining subtle discrimination experienced by LGB+ individuals, such as microaggressions, in understanding the emergence of mental health inequalities within societies marked by systematic social disparities (e.g., prejudice, social discrimination; Lui & Quezada, 2019). For instance, microaggressions experienced by sexual minority are associated with risks of depression, anxiety, stress, and suicide attempts, as well as problematic use of alcohol and cannabis (Marchi et al., 2023). However, the consistence of the empirical evidence is constrained by the limited number of studies conducted globally. Therefore, investigating how experiences of microaggressions impact the mental health indicators of sexual minorities is paramount (Mendoza-Pérez et al., 2024; K. L. Y. Nadal, 2023; Smith et al., 2023), particularly in Brazil, a country with the highest annual homicide rate of LGB+ people worldwide (Opinion Box, 2023).

Brazil is ranked 24th in the worldwide Global Acceptance Index for LGB+ (Flores, 2021). This indicates a moderate level of acceptance of LGB+ people and their civil rights. The index suggests that the Brazilian population has steadily increased its acceptance of LGB+ people over the last 40 years. However, despite this progress, discrimination, and violence against LGB+ people are still widespread in Brazil. For example, compared to heterosexual people, LGB+ individuals are more than twice as likely to experience some form of violence in the country. In addition, sexual violence against LGB+ men was about eight times higher than for heterosexual men (Vasconcelos et al., 2023). In fact, Brazil recorded an estimated 273 murders committed due to homophobia and transphobia in 2022 alone (Associação Brasileira de Lésbicas, Gays, Bissexuais, Travestis, Transexuais e Intersexos, 2023), surpassing even some countries in the Middle East and East Africa, where nonheterosexual orientations are criminalized, positioning Brazil as one of the most perilous countries for sexual minorities (International Lesbian, Gay, Bisexual, Trans and Intersex Association, 2020).

In line with this explicit violence, there is a strong culture of machismo in Brazil which valorizes socially masculine traits and devalues anything that is perceived as a threat to masculinity, including, but are not limited to, gay, lesbian, and bisexual individuals (Figueiredo & Pereira, 2021). Deviating from these entrenched masculine norms has severe societal consequences, including persecution, ostracism, physical violence, and assault, which significantly affects the mental health of LGB+ individuals (Schermerhorn & Vescio, 2022). This creates a unique context in Brazil to examine how microaggressions serve as a crucial distal factor in explaining the mental health outcomes among sexual minority individuals (Frost & Meyer, 2023). The study of microaggressions in Latin America is a relatively recent development. For example, in Mexico, Mendoza-Pérez et al. (2024) found that participants experienced lifelong microaggressions based on their sexual orientation, which negatively impacted their mental health across affective, cognitive, and behavioral domains. These microaggressions occurred primarily in the family, among friends, at school, and in public and private spaces. These findings highlight the far-reaching effects of microaggressions on mental health and emphasize the need for studies examining these dynamics in different Latin American contexts such as Brazil.

However, there is a significant shortfall in the development and availability of specialized psychological instruments designed to measure sexual orientation microaggressions in Latin American, specifically in Brazil. For example, Zarife and Ribeiro (2023) highlight the lack of culturally validated instruments tailored to capture the nuanced forms of discrimination experienced by LGB+ people in Brazilian society. In their study, the authors adapted the "lesbian, gay, bisexual, and transgender (LGBT) Microaggression Experiences at Work Scale," the first instrument in the Brazilian context to examine the experience of LGB+ microaggressions in the workplace. However, the scale items assess workplace values, heteronormative assumptions, and cisnormative culture, which is a different construct than the microaggressions based on sexual orientation experienced by LGB+ individuals. This gap impedes a comprehensive understanding of the nuanced and often covert forms of microaggressions faced by LGB+ individuals.

Therefore, in this research program, we first aimed to validate the Sexual Orientation Microaggressions Scale (SOMS; K. L. Nadal, 2019a) specifically for the Brazilian context, henceforth referred to as the SOMS-br. Adapting the SOMS assumes added social relevance due to the uniqueness of the Brazilian sociocultural landscape, which presents distinct challenges for addressing the effects of microaggressions in the LGB+ community (Zarife & Ribeiro, 2023). An adapted SOMS would provide crucial insights into the specific forms and effects of microaggressions based on sexual

orientation, enriching our understanding while informing culturally sensitive interventions and policies to support Brazilian LGB+ individuals, and reinforcing the importance of studying this topic in Latin American contexts. Then, we aimed to investigate the association between microaggressions based on sexual orientation and mental health indicators (e.g., depression, anxiety, and stress) in Brazilian LGB+ individuals, incorporating insights from broader Latin American research (e.g., Mendoza-Pérez et al., 2024).

Measuring Sexual Orientation Microaggressions

The SOMS by K. L. Nadal (2019a) is a comprehensive tool designed to measure a wide range of sexual orientation-specific microaggressions. This 24-item measure encompasses various microaggressions documented qualitatively among sexual minorities, such as microinvalidations (i.e., subtle behaviors or statements that invalidate experiences or concerns about heterosexism or sexual prejudice), assumption of deviance (i.e., instances in which others assume negative characteristics or behaviors based solely on a person's sexual orientation), heterosexist language (i.e., includes derogatory remarks, jokes or the use of slurs toward LGB+ individuals), enforcement of gender norms (i.e., includes criticism or pressure toward LGB+ individuals to conform to traditional gender norms and expectations), and environmental microaggressions (i.e., the portrayal of LGB+ individuals in the media and social context).

Although some authors treat microaggressions toward LGB+ individuals as microaggressions based on sexual orientation and gender identity (e.g., Botor & Tuliao, 2023, 2024), these experiences are generally measured separately. Sexual orientation and gender identity are distinct constructs, and while both are linked to experiences of discrimination, the nature of these microaggressions differs. Sexual orientation-related microaggressions often target heteronormative assumptions or the perception of deviance, while microaggressions related to gender identity, especially for transgender and nonbinary (TNB) individuals, may involve misgendering, deadnaming, or pressure to conform to binary gender norms (Arijs et al., 2023). In light of these differences, measuring these constructs independently allows for a more precise understanding of the specific forms of prejudice each group faces.

K. L. Nadal et al. (2019a) recognized this necessity by developing two distinct psychometric instruments: one for microaggressions related to sexual orientation (SOMS) and another for those related to gender identity (Gender Identity Microaggressions Scale [GIMS]). Similarly, Botor and Tuliao (2024) provided empirical support for this distinction by validating the SOMS and GIMS in the context of measuring the propensity to perpetrate microaggressions. In both studies, the SOMS was used exclusively to assess sexual orientation microaggressions, while the GIMS captured microaggressions related to gender identity. This separation aims to avoid conflating experiences based on sexual orientation with those rooted in gender identity, as both involve distinct but sometimes overlapping challenges for LGB+ individuals and TNB individuals. Other scales, such as the Sexual Orientation Microaggression Inventory (Swann et al., 2016), the Homonegative Microaggressions Scale (Wright & Wegner, 2012), and the lesbian, gay, bisexual, and queer Microaggressions on Campus Scale (Woodford et al., 2015), similarly focus on sexual orientation, while tools like the Nonbinary Gender Microaggressions Scale (Croteau & Morrison, 2022) specifically address gender identity microaggressions.

These nuanced differences suggest that sexual orientation and gender identity microaggressions operate in parallel, yet require separate measurement to capture their distinct effects accurately. In this study, we focus on the SOMS as a tool to specifically assess sexual orientation microaggressions, as it offers a robust means of capturing the experiences of LGB+ individuals. In fact, one of the key strengths of the SOMS, which distinguishes it from previous measures of microaggressions toward sexual minorities (for review, see Fisher et al., 2019), is its inclusive design. The scale avoids presuming that the respondent belongs to any specific sexual minority, making it adaptable to a wide range of participants (Di Luigi et al., 2024). Moreover, the SOMS underwent empirical studies for its original validation, confirming its reliability and validity in capturing sexual minorities' experiences (Fisher et al., 2019). Its recent adaptation to the Swedish context, conducted by Di Luigi et al. (2024), further demonstrates the scale's versatility and underscores its need for cultural sensitivity. This adaptation, involving linguistic adjustments, highlights how microaggressions can manifest differently across cultural contexts, reinforcing the importance of adapting the SOMS to various international settings.

The Present Research

This research program comprises four main studies, each contributing uniquely to the adaptation and validation process of SOMS (K. L. Nadal, 2019a) for the Brazilian context (SOMS-br). Study 1 focused on the cross-cultural adaptation of SOMS-br, ensuring its relevance and appropriateness for the Brazilian LGB+ population (i.e., content validity). The process involved rigorous steps like translation, expert review, reverse translation, and pilot testing. Study 2 sought to provide initial evidence of the factorial structure and internal consistency of the instrument. It involved analyzing responses from a diverse sample of Brazilian LGB+ individuals, examining the scale's psychometric properties, the quality of the adapted items by item response theory (IRT; Reise & Moore, 2023), and ensuring its reliability in measuring microaggressions within this specific cultural context. Study 3 aimed to confirm the factorial structure identified in Study 2, establish the scale's convergent-discriminant validity, and assess its invariance across sex. This stage was crucial to affirm that SOMS-br is a robust tool that can reliably measure microaggressions across LGB+ cisgender men and women. Moreover, this study explored the scale's relation with related constructs, such as stigma experiences (Herek, 2009), and ensured its discriminant validity against unrelated measures, like daytime sleepiness fluctuation (Johns, 1991). Finally, Study 4 addressed the impact of microaggression based on sexual orientation on the mental health indicators of Brazilian sexual minorities. Specifically, we examined how the different dimensions of LGB+ microaggressions relate to increases in stress, anxiety, and depression symptoms among these individuals. This research was approved by the Research Ethics Committee of the Federal University of Paraíba. Data sets and materials used in the studies developed are accessible as the additional online materials on the Open Science Framework (OSF) (https://osf.io/5bm9u/) platform (Silva et al., 2024).

Study 1

Study 1 aimed to establish the content validity of SOMS-br through empirical and theoretical means. Following guidelines for

cross-cultural adaptation of psychological instruments (Boateng et al., 2018), our approach encompassed five stages: (a) translation from English to Portuguese with input from bilingual experts; (b) synthesis of translations; (c) reverse translation from Portuguese to English; (d) content analysis by experts; and (e) pilot study implementation with the target audience.

Method

Participants

In the first step of adapting the SOMS-br, two bilingual translators proficient in both Portuguese and English were involved. In Step 2, the study authors synthesized the initial translations into a single version, ensuring cultural relevance for the Brazilian context. Step 3 involved two different bilingual translators (Portuguese–English) than those in the initial stage of adaptation. For Step 4, we collaborated with five experts in social psychology and psychometrics, noted for their expertise in sexual prejudice and discrimination studies. We asked them to rate the SOMS-br items concerning theoretical construct relevance (i.e., alignment with the intended construct), clarity (i.e., appropriateness for the Brazilian LGB+ demographic), overall pertinence (i.e., item pertinence in measuring the construct), and consistency between the original and adapted versions (i.e., translation fidelity). Finally, Step 5, the pilot study, engaged 19 individuals from the general population. All participants self-identified as LGB+ cisgender men and women, with the majority self-identifying as LGB+ cisgender women (63.2%), homosexual (63.2%), single (73.2%), mixed race (52.6%), possessing complete higher education (47.4%), and belonging to the lower-middle social class (63.2%).

Procedure and Measure

The initial step involved adapting the scale items into Brazilian Portuguese. This resulted in a synthesized version of the measure that balanced linguistic appropriateness for Brazilian Portuguese with the unique linguistic and cultural nuances pertinent to the Brazilian LGB+ community (Phase 2). To further ensure the measure's quality and to verify that the adapted items faithfully represented the content of the original version (Sireci et al., 2006), a back translation into English was conducted in the third phase. In this process, the translator compared each item in Portuguese with its English counterpart, rating them on a scale from $0 = not\ at\ all$ $similar$ to $5 = completely\ similar$ to assess the fidelity of the adaptation. After back translation, we began the scale's content validation by expert analysis (Step 4). The expert group was asked to rate the relevance of each item pertinence in measuring the construct, relevance, clarity, and translation fidelity using a 6-point Likert scale ($0 = not\ at\ all$ to $5 = completely$). They were also asked to make any suggestions they deemed necessary for the items. The content validity coefficient (CVC) was employed as a quantitative measure of validity based on the degree of agreement between the experts. The final phase in this cross-cultural adaptation process was a pilot study to confirm the linguistic suitability of the SOMS-br items for the intended audience. Participants from the Brazilian general population, identifying as LGB+ were invited to evaluate the semantic content of the items using a 4-point likelihood scale ($1 = not\ comprehensible$ to $4 = very\ comprehensible$), thus providing insights into the clarity of the language used.

Data Analysis

The CVC was calculated using Aiken's (1985) algorithm (see supplemental materials on the additional online materials on the OSF [https://osf.io/5bm9u/]), providing robust estimates for both the total content validity coefficient (CVCt) and individual item content validity coefficients (CVCi). A threshold of .70, following Aiken's (1985) guidelines, was used to determine acceptable quality. Descriptive analyses, including means, standard deviations, and t tests, were conducted on the pilot study results.

Results

Regarding the first phase of the cross-cultural adaptation of SOMS-br, a notable alignment was observed between the translations provided by two independent translators. This alignment was crucial for maintaining the integrity of the scale's items. However, during the subsequent phase, the research team focused on achieving a nuanced balance between linguistic precision, cultural relevance, contextual suitability, and fidelity to the original scientific concept, as advocated by Tanzer (2005). To this end, the terms "heterosexism" and "heterosexist" in the original scale were modified to "homophobia" and "homophobic," respectively. This modification was deemed necessary to enhance the relevance and applicability of the SOMS-br for the LGB+ community in Brazil. This decision was informed by existing literature (K. L. Y. Nadal, 2023) indicating that the concept of homophobia is more prominently recognized and understood within the Brazilian context, thereby facilitating more accurate and culturally sensitive research outcomes. In terms of the back-translation fidelity results, all items exhibited complete consistency, except for two items where the terms "heterosexism" and "heterosexist" in the original were substituted with "homophobia" and "homophobic." These items received a score of 4.

In evaluating the SOMS-br, the expert raters reported a strong overall CVCt, averaging .94 across four key dimensions. Specifically, the dimension of pertinence in measuring the microaggression construct attained an average CVCi of .92; the clarity of the language for the target audience was also rated with a CVCi of .92. Notably, the dimension of relevance achieved a high score of .97, while the translation fidelity between the versions obtained an average CVCi of .96. These substantial coefficients demonstrate a satisfactory alignment of the items with the predetermined CVCi benchmarks (see supplemental materials on the additional online materials on the OSF [https://osf.io/5bm9u/] for a detailed breakdown of the CVCi values for each assessed dimension).

Regarding the results of the pilot study, we found that all items were considered comprehensible by the target population. This was evidenced by findings showing that all scores significantly deviated from the midpoint (2.5) of the scale. Specifically, the comprehensibility scores for all items were significantly higher than 2.5, indicating that participants generally found the items to be clear and understandable.

Discussion

In this study, we provided the first empirical evidence supporting the content validity of the SOMS-br. The findings from this study indicate a high degree of agreement among raters and a successful adaptation of the scale for the Brazilian LGB+ community. The expert assessments yielded significant overall CVC across key

dimensions such as pertinence, relevance, clarity, and translation fidelity. This demonstrates that the SOMS-br items were deemed highly pertinent, relevant, and clear in the context of measuring microaggressions against the LGB+ community. The pilot study further strengthens our findings. The comprehensibility of the items among the target population was evident, as all item scores significantly diverged from the midpoint of the scale, indicating clear and objective understanding by the participants. This aspect is crucial in ensuring that the scale accurately captures the intended construct in a culturally relevant and understandable manner for the Brazilian LGB+ community.

Study 2

In this study, we sought to further gather initial evidence of factorial validity and internal consistency of SOMS-br in the Brazilian context. Moreover, the psychometric properties of the SOMS-br items were analyzed using IRT (Reise & Moore, 2023).

Method

Participants

Given the objective to assess microaggressions specifically related to sexual orientation distinct from gender identity (which is not captured by the SOMS), the target population for all studies consisted of LGB+ cisgender adults over 18 years of age residing in Brazil. The study initially included 253 Brazilian individuals who identified as members of a sexual minority. Of these participants, 4.7% identified as nonbinary, 0.4% as transgender men, and 0.4% as transgender women; however, their data were excluded from the final analyses. Thus, the final sample consisted of 239 participants, aged between 18 and 56 years ($M = 26.7$, $SD = 6.9$). In terms of sexual orientation, the majority identified as gay (67.8%), followed by bisexual (26.4%) and asexual (5.9%). Of the participants, 54% identified as LGB+ cisgender men and 46% as LGB+ cisgender women. Most participants were single (80.3%), followed by married individuals (18%) and divorced individuals (1.7%). In terms of racial identity, 63.2% identified as White, 23.8% as Brown, 10.9% as Black, 1.7% as other, and 0.4% as Indigenous. Educational attainment varied, with the majority having a high level of education: 52.7% had completed higher education, 33.9% had some higher education, 13% had completed high school, and 0.4% had not completed high school. In terms of socioeconomic status, 42.7% belonged to the lower middle class. Geographically, the sample included participants from all regions of Brazil: 37.7% from the Southeast, 34.3% from the Northeast, 15.5% from the South, 8.4% from the Midwest, and 4.2% from the North, ensuring a broad representation of the country's diverse population.

Measures

Sexual Orientation Microaggressions Scale (SOMS-br). We used the 24 items from SOMS (K. L. Nadal, 2019a) adapted to Brazilian Portuguese in Study 1 (e.g., When I thought something was homophobic, a heterosexual person disagreed with me). The instrument was answered on a 4-point Likert scale ($1 = never$, $2 = rarely$, $3 = sometimes$, and $4 = often$).

Sociodemographic Questions. We asked participants their age, gender identity, skin color, marital status, sexual orientation, the region they lived in Brazil, and education degree.

Procedure

We used Qualtrics, an online survey platform, to collect the data. The survey was disseminated through a snowball sampling approach, initiated with strategic posts on various social media platforms. Participants completed the survey in approximately 8 min to ensure an efficient and user-friendly experience. No financial incentive was offered to participants. To minimize response bias due to order effects on data reliability, items within the SOMS-br were presented to participants in a randomized order. To ensure the validity of survey responses, we employed several measures. First, we implemented Completely Automated Public Turing test to tell Computers and Humans Apart (CAPTCHA) verification to filter out bots. Second, to prevent duplicate entries, we allowed only one response per IP address. Lastly, we ensured data quality by only accepting responses where 100% of the survey was completed.

Data Analysis

For conducting the exploratory factor analysis (EFA), we employed the software Factor 10.10.03 (Ferrando & Lorenzo-Seva, 2017). To determine the number of factors to retain, we utilized a classical implementation of parallel analysis, as per Horn (1965). This method involves a comparison of the eigenvalues from the observed data with those from simulated data, with the criterion that the eigenvalues from the observed data must exceed those from the simulated data for factor retention. We estimated the parameters using the polychoric correlation matrix and the robust diagonally weighted least squares (DWLS), incorporating a bootstrap of 5,000 samples to establish 95% confidence intervals (CIs). We applied Robust Promin rotation for analyzing the factor matrix, following the approach outlined by Ferrando and Lorenzo-Seva (2018). To evaluate the fit of the factorial model, we considered several indices and parameters: a χ^2/df ratio less than 5, Tucker–Lewis index (TLI) and comparative fit index (CFI) values above .90, and root-mean-square error of approximation (RMSEA) and standardized root-mean-squared residual (SRMR) values below .06, in line with Hu and Bentler's (1999) recommendations.

The IRT (Reise & Moore, 2023) analysis was conducted using R software. Given the ordinal and polytomous nature of the item response scale, we employed the graduated response model as proposed by Samejima (1969). The mirt package (Chalmers, 2012) was used to determine the item parameters, specifically "a" for discrimination ($a > 0.50$) and "b" for difficulty ($-3.0 < b < 3.0$), adhering to the guidelines by Baker and Kim (2017). Furthermore, the internal consistency of the SOMS-br was evaluated using both Cronbach's alpha and McDonald's omega coefficients, with threshold values set above .70 for both coefficients as indicative of adequacy.

Results

Firstly, we calculated the descriptive statistics for each of the 24 items (see Table 1). The results showed that the items that were indicated as describing situations most frequently experienced by the participants were items: People have used terms like "fag/dyke/queer/homo" in front of me (Item 15); I have heard a person call someone else "gay" because she/he was "weird" or "different" (Item 16); and people have made insensitive gay or lesbian jokes in front of me (Item 17). All three of these items had an average response of 3.60 on a scale ranging from 1 to 4. On the other hand, the item indicated by participants as least frequent was Item

Table 1
Means and Standard Deviations of the SOMS-br Items

Item	M	SD
1. I have been told I was overreacting when I confronted someone about their heterosexist behaviors/slights [Já ouvi que estava exagerando quando confrontei alguém sobre seus comportamentos/insultos homofóbicos]	2.80	1.05
2. I have been told that I should stop complaining about heterosexism [Já ouvi que deveria parar de reclamar sobre a homofobia]	2.39	1.14
3. When I thought something was heterosexist or homophobic, a heterosexual person provided alternative rationales [Quando pensei que algo era homofóbico, uma pessoa heterossexual me deu explicações alternativas para aquela situação]	2.85	1.16
4. When I thought something was heterosexist or homophobic, a heterosexual person disagreed with me [Quando pensei que algo era homofóbico, uma pessoa heterossexual discordou de mim]	3.08	0.98
5. Someone told me that I was oversensitive when it came to LGBTQ+ issues [Alguém me disse que eu era sensível demais quando se tratava de questões LGBTQ+]	2.58	1.17
6. Someone has responded defensively when I pointed out their homophobic language [Alguém reagiu defensivamente quando apontei sua linguagem homofóbica]	3.03	1.03
7. I have been told I was being paranoid when I thought someone was being heterosexist [Já ouvi que eu estava exagerando quando pensei que alguém estava sendo homofóbico]	2.87	1.02
8. Someone has tried to keep their children from coming into physical contact with me because of my sexual orientation [Alguém tentou impedir que seus filhos entrassem em contato físico comigo por causa da minha orientação sexual]	1.58	0.95
9. Someone has assumed I have HIV or AIDS because of my sexual orientation [Alguém já supôs que eu tinha HIV ou AIDS por causa da minha orientação sexual]	1.35	0.80
10. Someone assumed that I would be a child molester or sexual predator because of my sexual orientation [Alguém supôs que eu seria um molestador de crianças ou abusador sexual por causa da minha orientação sexual]	1.29	0.70
11. Someone has avoided sitting next to me because of my sexuality [Alguém já evitou sentar ao meu lado por causa da minha sexualidade]	1.62	0.91
12. A friend has stopped talking to me after finding out about my sexuality [Um amigo parou de falar comigo depois de descobrir sobre minha sexualidade]	1.76	1.05
13. People have made negative comments or jokes about LGBTQ+ people in my presence without realizing my sexual orientation [Já fizeram comentários ou piadas negativas sobre pessoas LGBTQ+ na minha presença sem se dar conta da minha orientação sexual]	3.53	0.77
14. I have heard the term "That's so gay" when someone was talking about something negative [Já ouvi a expressão "Isso é tão gay" quando alguém estava falando sobre algo negativo]	3.44	0.87
15. People have used terms like "fag/dyke/queer/homo" in front of me [As pessoas já usaram termos como "bicha/sapatão" de forma pejorativa na minha frente]	3.59	0.74
16. I have heard a person call someone else "gay" because she/he was "weird" or "different" [Já ouvi alguém chamar outra pessoa de "gay" porque ele/ela era "estranho" ou "diferente"]	3.60	0.74
17. People have made insensitive gay or lesbian jokes in front of me [Já fizeram piadas insensíveis sobre gays ou lésbicas na minha frente]	3.59	0.73
18. I have been criticized about not wearing clothes that are normal for my gender [Já fui criticado(a) por não usar roupas consideradas adequadas para o meu gênero]	2.22	1.24
19. I have been criticized about the way I dress because I choose clothes that are different than people of my gender [Fui criticado(a) pela maneira como me visto porque escolho roupas diferentes das pessoas do meu gênero]	2.03	1.20
20. I have been told to act more "masculine" or "feminine" [Já me disseram para agir de modo mais "masculino" ou "feminino"]	2.76	1.14
21. I have seen LGBTQ+ people portrayed positively in magazines [Tenho visto pessoas LGBTQ+ sendo retratadas positivamente em revistas]	2.51	0.84
22. I have seen LGBTQ+ people portrayed positively in movies [Tenho visto pessoas LGBTQ+ sendo retratadas positivamente em filmes]	2.75	0.86
23. I have seen LGBTQ+ people portrayed positively on television [Tenho visto pessoas LGBTQ+ sendo retratadas positivamente na televisão]	2.44	0.92
24. I have seen advertisements/commercials that include same sex couples [Tenho visto propagandas e comerciais que incluem casais do mesmo sexo]	2.46	0.89

Note. SOMS-br = Brazilian Portuguese version of the Sexual Orientation Microaggression Scale; LGBTQ+ = lesbian, gay, bisexual, transgender, queer, and more.

10: "Someone assumed that I would be a child molester or sexual abuser because of my sexual orientation," which had an average response of 1.35 (see Table 1).

To evaluate the sample's adequacy for conducting an EFA, that is, to check if our polychoric matrix was favorable, we calculated the Kaiser–Meyer–Olkin (KMO = 0.880) and Bartlett's sphericity

Table 2
Factor Loadings of the SOMS-br Items

Item	F1	F2	F3	F4	F5
1	**.902**	.113	−.118	−.016	.035
2	**.894**	.165	−.206	−.083	.003
3	**.610**	−.090	.090	.110	.001
4	**.664**	−.024	.189	.014	.019
5	**.830**	.130	−.088	.020	.017
6	**.701**	−.153	.192	−.013	−.081
7	**.919**	−.052	−.040	−.005	.038
8	.030	**.798**	−.083	.112	−.010
9	.044	**.726**	.076	−.111	.044
10	.014	**.875**	.076	−.113	−.018
11	−.024	**.675**	.048	.178	−.095
12	.003	**.496**	.292	.032	−.060
13	−.059	.184	**.715**	−.042	−.022
14	.023	−.026	**.701**	.034	−.047
15	.085	.002	**.787**	.004	.001
16	.045	−.168	**.744**	.022	.008
17	−.067	.117	**.846**	−.045	.039
18	−.023	−.022	.046	**.846**	−.080
19	.095	.004	−.130	**.913**	−.004
20	−.081	.086	.089	**.716**	.127
21	−.032	.017	−.075	.043	**.703**
22	−.003	−.022	.110	.051	**.823**
23	.048	.062	−.052	−.089	**.803**
24	−.010	−.107	.020	.030	**.649**
Eigenvalue	7.782	2.934	2.626	2.180	1.690
% variance	31.00	10.80	9.30	8.00	5.80
Cronbach's α	.894	.783	.790	.842	.793
McDonald's ω	.894	.782	.793	.871	.796

Note. Loadings in bold indicate the items that load onto each factor. SOMS-br = Brazilian Portuguese version of the Sexual Orientation Microaggression Scale; F1 = microinvalidations; F2 = assumption of deviance; F3 = heterosexist language; F4 = endorsement of gender conformity; F5 = environmental microaggressions.

Table 3
IRT Parameters (a, b1–b3) of SOMS-br

Item	a	b1	b2	b3
Factor 1				
i1	2.947	−1.252	−0.404	0.504
i2	2.262	−0.714	0.122	0.891
i3	1.659	−1.245	−0.543	0.307
i4	2.183	−1.610	−0.917	0.222
i5	2.334	−0.888	−0.074	0.558
i6	2.323	−1.458	−0.776	0.214
i7	3.859	−1.288	−0.432	0.419
Factor 2				
i8	2.735	0.520	1.096	1.730
i9	1.901	1.117	1.741	2.294
i10	3.438	0.996	1.627	2.141
i11	1.864	0.423	1.130	2.306
i12	1.241	0.369	1.151	2.186
Factor 3				
i13	1.845	−2.572	−1.836	−0.622
i14	1.883	−2.100	−1.542	−0.473
i15	2.941	−2.365	−1.455	−0.726
i16	2.210	−2.286	−1.849	−0.738
i17	3.053	−2.332	−1.457	−0.677
Factor 4				
i18	42.240	−0.179	0.284	0.631
i19	5.436	−0.001	0.438	0.888
i20	1.515	−1.267	−0.347	0.561
Factor 5				
i21	1.798	−1.728	−0.010	1.592
i22	2.634	−1.714	−0.363	0.976
i23	2.513	−1.209	0.056	1.290
i24	1.549	−1.568	0.029	1.772

Note. IRT = item response theory; SOMS-br = Brazilian Portuguese version of the Sexual Orientation Microaggression Scale; i1–i24 = item 1–item 24.

tests, $\chi^2(166) = 5,394.41$, $p < .001$. The results ensured the performance of the EFA. Therefore, we moved on to the next step, which was the EFA with the explained variance based on the number of eigenvalues greater than 1 as the criterion for factor extraction. Additionally, we used a varimax rotation as performed by the author in the original study of scale development (K. L. Nadal, 2019a). The results showed the organization of the 24 items into five factors, with eigenvalues ranging from 7.78 (Factor 1) to 1.69 (Factor 5). The distribution of items between factors (see Table 2) followed the same organization found by K. L. Nadal (2019a) in his scale presentation study. No item was excluded as all showed a minimum factorial load of .30 on at least one of the factors. We also evaluated the internal reliability of the scale using Cronbach's alpha coefficients and McDonald's omega. Both parameters demonstrated the adequacy of the measure (see Table 2).

The results of parallel analysis (see supplemental materials on the additional online materials on the OSF [https://osf.io/5bm9u/] for details) confirmed the factorial structure found in the EFA. In fact, five variables had real-data eigenvalue scores superior to the mean of random eigenvalues, performing the advised number of dimensions equal to 5. Results of the exploratory five-dimensional model showed good fit indices, $\chi^2/df = 0.401$, TLI = 1.037, CFI = .999, RMSEA = .001, 90% CI [.000, .163].

In addition, we analyzed the quality of the adapted items using the IRT. Table 3 shows the IRT parameters for discrimination and difficulty, organized by each factor of SOMS. The results showed that all items had appropriate values for discrimination, ranging from 42.240 (Item 18) to 5.436 (Item 19). Moreover, the results showed that all items had good scores for difficulty, ranging from −2.572 (Item 13) to 2.294 (Item 9). Furthermore, we analyzed the information curves of each item according to SOMS dimensions. As shown in Figure 1, the results indicated that the items in the range of theta values (i.e., the estimated latent microaggression construct driving participants' items responses) from −4 to 4 were more informative, whereas the items in the range of extreme theta values (i.e., −6 and 6) were less informative. Considering the dimensions of SOMS, the most informative items were Items 1 and 7 in Factor 1 (Figure 1A), Items 8 and 10 in Factor 2 (Figure 1B), Items 15 and 17 in Factor 3 (Figure 1C), Items 18 and 19 in Factor 4 (Figure 1D), and Items 22 and 23 in Factor 5 (Figure 1E).

Discussion

In Study 2, we successfully provided additional empirical support for SOMS-br validity, now addressing its factorial validity, interitem reliability, and quality of the scale. Our results suggest that the scale reliably measures microaggressions through a five-factor structure that is consistent with the theoretical framework originally proposed by K. L. Nadal (2019a). The IRT analysis also revealed that the SOMS-br items have adequate psychometric properties and effectively cover the construct at different degree of the latent trait. Moreover, the estimated reliability coefficients indicate that the

Figure 1

Information Curve of Items by SOMS Dimensions
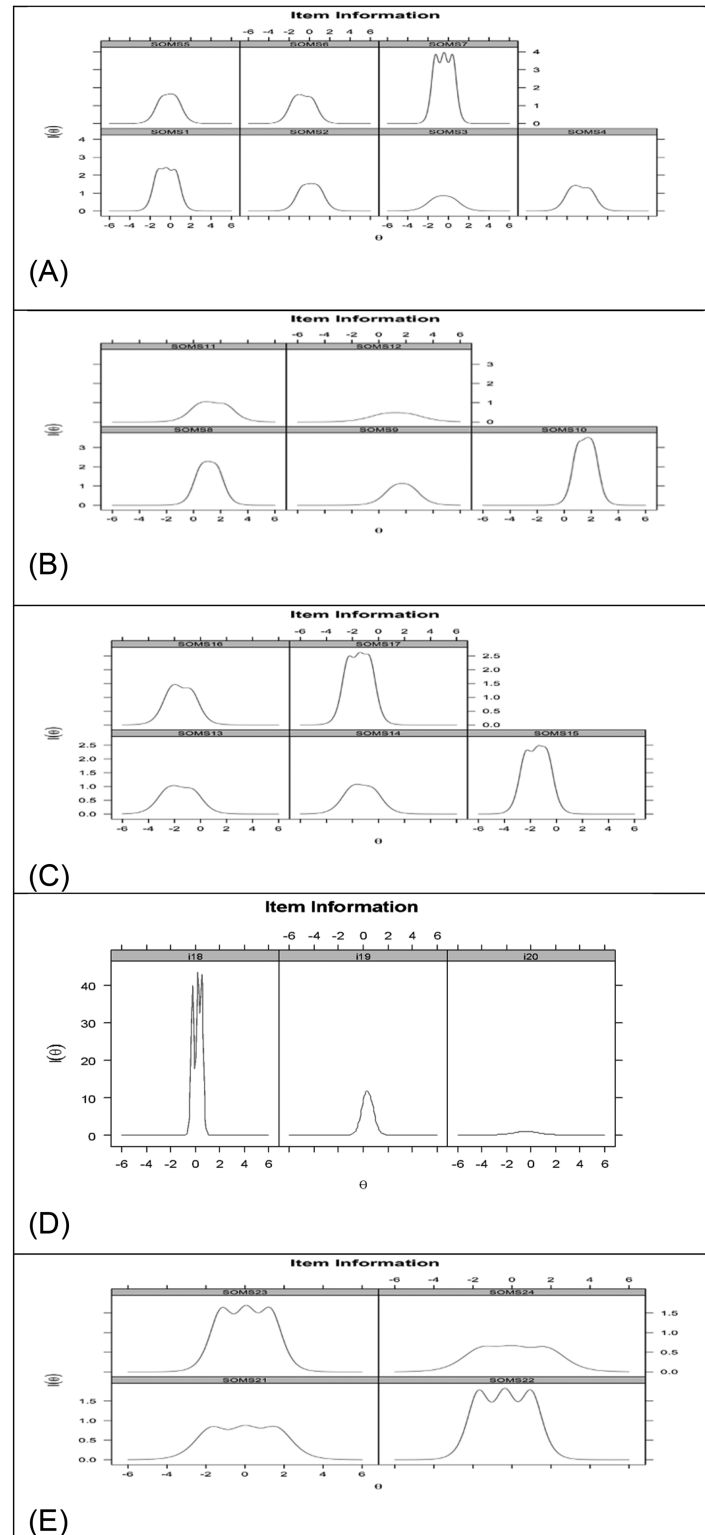
Note. (A) Microinvalidations, (B) assumption of deviance, (C) heterosexist language, (D) endorsement of gender conformity, and (E) environmental microaggressions. SOMS = Sexual Orientation Microaggressions Scale.

SOMS-br demonstrates commendable internal consistency. In summary, the results present a compelling case for the factorial validity and reliability of the SOMS-br scores. Nevertheless, to reinforce these findings, it is essential to replicate the observed five-factor structure with a new sample from the target population employing a confirmatory data analysis approach. Furthermore, assessing the scale's convergent-discriminant validity, as well as its configural, metric, and scalar invariance across groups of LGB+ cisgender men and women, remains crucial because it will help establish whether the scale functions equivalently across different groups, ensuring that any observed differences are not due to measurement bias but reflect true variations in the experience of microaggressions. To address these needs and further validate our findings, Study 3 was undertaken.

Study 3

In this study, we conducted a confirmatory factor analysis (CFA) of the SOMS-br to validate its factorial structure. Additionally, we examined its convergent-discriminant validity and assessed its configural, metric, and scalar invariance across groups of LGB+ cisgender men and women. The CFA was undertaken with a new sample from the target population to determine if the five-dimensional structure proposed by K. L. Nadal (2019a) could be replicated in a new statistical model. Specifically, we evaluated the fit parameters to substantiate the hypothesized penta-factorial structure. For the convergent-discriminant validity of SOMS-br, we explored the relation of the microaggressions measure with other scales assessing related (convergent validity) and unrelated (discriminant validity) constructs. This allows us to further provide evidence of construct validity based on established criteria in the intended context of the measure. Previous research indicates that prejudice toward sexual orientation often leads to the internalization of negative emotions by the survivors (Frost & Meyer, 2023). Similarly, studies suggest that individuals experiencing microaggressions may develop depression, low self-esteem, and trauma related to stigma experiences (e.g., for a review, see K. L. Nadal, 2019b). To assess the convergent validity of SOMS-br, we investigated its relation with the Stigma Experiences Scale (SES; Herek, 2009), which measures the frequency of abuse or humiliation experienced by nonheterosexual individuals. This analysis aimed to verify the scale's sensitivity in assessing the negative impact of prejudice and discrimination on peoples' quality of life. Conversely, given the long-term effects of microaggressions, we hypothesized that this construct would not correlate with measures assessing immediate or objective conditions of the population. For discriminant validity, we used the Epworth Sleepiness Scale (ESS; Johns, 1991), a measure of daytime sleepiness fluctuation. Theoretically, constructs related to social attitudes are not expected to be closely related to physical states such as sleepiness. In this sense, the ESS is expected to be unrelated to participants' scores on the SOMS-br because they measure different constructs, as found by Nery et al. (2023) in the adaptation of the Scale of Sexual Prejudice Against Bisexuals for Brazilian context. Predicting no relation between SOMS-br and ESS is useful to address alternative explanation in terms of acquiescence effect that threat self-report psychological instruments.

Furthermore, we analyzed the invariance of SOMS-br's factorial structure. Scale invariance refers to the extent to which a scale's theoretical structure is appropriate for different groups. Using group status (i.e., LGB+ cisgender men and women) as the criterion, we aimed to validate that the adapted instrument accurately assesses microaggression experiences among LGB+ men and women without group-specific bias. This approach aligns with widely accepted methods for ensuring the structural integrity of psychological scales (Do Bú et al., 2023; Silva & Pereira, 2023) and involves conducting a multigroup confirmatory factor analysis (MGCFA). Through MGCFA, we estimated three different models—configural, metric, and scalar invariance—to evaluate the scale's factorial consistency across groups. We hypothesized that the factorial structure would be equivalent for both LGB+ groups examined and that the scale would exhibit appropriate internal consistency.

Method

Participants

The initial sample comprised 265 Brazilian individuals who identified as members of a sexual minority. Among them, 5.3% identified as nonbinary, 0.8% as transgender men, and 0.4% as transgender women; however, their data were excluded from the final analyses. The final sample consisted of 248 participants, aged between 18 and 65 years ($M = 26.25$, $SD = 6.65$). Regarding sexual orientation and gender identity, 139 participants (56%) identified as LGB+ cisgender men, and 109 participants (44%) identified as LGB+ cisgender women. Most participants were single (79.4%) and self-identified as White (64.5%). In terms of socioeconomic status, 39.1% identified as belonging to the lower middle class, and 48% had completed higher education. Geographically, the sample included individuals from all regions of Brazil: 39.9% from the Southeast, 33.1% from the Northeast, 13.7% from the South, 10.5% from the Midwest, and 2.8% from the North.

Measures

Sexual Orientation Microaggressions Scale (SOMS-br; K. L. Nadal, 2019a). The SOMS-br, adapted previously was employed in this study.

ESS (Johns, 1991). This self-report instrument measures an individual's daytime sleepiness levels. It includes six everyday scenarios (e.g., sitting, doing nothing, in a public place), with responses on a 4-point Likert scale ranging from $0 = would\ never\ doze$ to $3 = high\ chance\ of\ dozing$. The Brazilian adaptation and validation of the ESS (Bertolazi et al., 2009) demonstrated good psychometric properties. In this study, the ESS displayed median internal consistency ($\alpha = .631$; $\omega = .631$) and good fit indices, DWLS $\chi^2(9) = 9.363$, $p = .404$, $\chi^2/df = 1.040$, TLI $= 0.996$, CFI $= .998$, RMSEA $= .013$, 90% CI [.000, .073].

SES (Herek, 2009). The SES was used to assess the convergent validity of the SOMS-br. This instrument is designed to measure abuse, violence, and discrimination experiences faced by lesbian, gay, and bisexual (LGB+) individuals due to their sexual orientation. The scale consists of seven items reflecting negative situations (e.g., threats of violence or verbal insults due to being LGB+). Participants rate the frequency of these experiences since turning 18 on a scale from $0 = never$ to $3 = three\ or\ more\ times$, with higher scores indicating greater stigma experience. The Brazilian adaptation of the SES (Costa et al., 2020) showed adequate internal consistency, which was also observed in our study ($\alpha = .760$; $\omega = .791$). Moreover, the scale showed good fit indices, DWLS $\chi^2(14) = 7.645$, $p = .907$, $\chi^2/df = 0.546$, TLI $= 0.999$, CFI $= .999$, RMSEA $= .001$, 90% CI [.000, .025].

Sociodemographic Questionnaire. Participants were asked to complete a questionnaire covering sociodemographic characteristics such as age, sex assigned at birth, sexual orientation, gender identity, marital status, education degree, perceived social class relative to the broader population, and skin color.

Procedure

We adhered to the same data collection procedures as utilized in Study 2. Upon accessing the survey link, participants were first presented with an informed consent form. This form provided detailed information about the study's objectives and the ethical guidelines adhered to in the research and emphasized the voluntary nature of participation. Participants were granted access to the survey instruments, including the set of scales (e.g., SOMS-br, ESS, and SES) and the sociodemographic questionnaire, only after they had agreed to participate by digitally signing the informed consent form. The average time taken by participants to complete the survey was approximately 10 min.

To ensure the validity of the responses, we followed the same procedures as in Study 2, employing CAPTCHA to filter out bots and restricting responses to one per IP address to prevent duplicates. Additionally, we accepted only fully completed surveys to maintain the integrity of the data. As in the previous study, items within the scales were presented in randomized order to minimize response bias.

Data Analysis

We used the lavaan package in R software (Rosseel, 2012) for conducting CFA and JASP (Version 0.18.3; JASP Team, 2024) for MGCFA, convergent-discriminant analysis, and calculating the internal consistency of the measure. In the CFA, we estimated two models using the maximum likelihood with robust standard errors (MLR) estimator: a unifactorial model (Model 1) and the proposed five-factor model (Model 2; K. L. Nadal, 2019a). To assess the fit of the models to the data, we applied several criteria, including χ^2/df (chi-square to degrees of freedom ratio) less than 5.00; TLI and CFI greater than .90; and RMSEA less than .06 (Hu & Bentler, 1999).

Following the CFA, we conducted the multigroup confirmatory factorial analysis (MGCFA) to analyze three types of invariances based on sexual identities: configural, metric, and scalar invariance (Chen, 2007). Each type of invariance was assessed using a separate statistical model. Configural invariance examines the equivalence of the factorial structure between groups. Metric invariance assesses the uniformity of factor loadings across groups. Scalar invariance, on the other hand, evaluates the equality of intercepts between groups. To test these models, we compared each with one another and against a baseline model, where parameters were freely estimated between groups. We assessed the fit of each model using the invariance criteria Delta CFI (ΔCFI $\leq$ .01) and Delta RMSEA (ΔRMSEA $\leq$ .015) as suggested by Chen (2007).

For the convergent-discriminant analysis, we examined the correlations between the SOMS-br and other scales using Pearson's r. We set a threshold for convergent validity at a correlation value greater than .40 ($p < .05$) and for discriminant validity at a correlation value less than .10 (nonsignificant; Cohen et al., 2013; Gregory, 2011; Grobler & Joubert, 2018). Finally, we evaluated the scale's internal consistency using Cronbach's α greater than .70 (Cronbach, 1951), composite reliability (CR) equal to or greater

than 0.80, and average variance extracted (AVE) equal to or greater than 0.50 (Fornell & Larcker, 1981).

Results

The results of CFA showed that the fit indices of the model with five related factors, $\chi^2(242) = 368.912$, $\chi^2/df = 1.524$, CFI = .948, TLI = 0.941, RMSEA = .046, 90% CI [.036, .055], Akaike information criterion (AIC) = 13,873.161, were all satisfactory and better than the unifactorial model, $\chi^2(276) = 2,713.940$, $\chi^2/df = 9.833$, CFI = .449, TLI = 0.397, RMSEA = .147, 90% CI [.140, .153], AIC = 15,078.610. The results of the model comparison showed that Model 2 (five-factor model) was statistically better than Model 1 (one-dimensional model), $\Delta\chi^2 = -600.13$, $p = .001$ (Figure 2).

When estimating the different MGCFA models (Table 4), we found that the scale structure tested in Brazilian samples showed five invariant factors in each group based on the participants' gender identity (configural invariance), and the model in which we compared the factor loadings (metric invariance) and intercepts between groups (scalar invariance) are equivalent to the baseline model used as a reference. This means that when comparing the fit indices of the models, we found that the scale structure composed of five related factors is invariant between groups of LGB+ cisgender men and women.

The results show that SOMS-br moderately and significantly correlated with the SES ($r = .396$, $p = .001$) and showed no relation with the ESS ($r = .117$, $p = .065$). Moreover, the scale has good internal consistency ($\alpha = .830$, $\omega = .833$), high CR (0.969), and adequate AVE (0.713).

Discussion

Study 3 replicated the previous study and further provided stronger empirical evidence of validity for the estimated factorial structure parameters of the SOMS-br, while also examining its convergent-discriminant validity and invariance. Our results were consistent with the proposed five-factors structure (K. L. Nadal, 2019a), illustrating its robustness in a new statistical model with a diverse Brazilian sample. In fact, the CFA revealed that the five-factor model demonstrated a significantly better fit compared to the unifactorial model, indicating the appropriateness of the multifactorial approach in capturing the nuances of sexual orientation microaggressions in Brazil. Moreover, in examining the scale's convergent-discriminant validity, we found a moderate and significant correlation between the SOMS-br and the SES, underscoring the scale's efficacy in measuring experiences related to stigma and discrimination. This correlation confirms the scale's convergent validity, as both instruments aim to capture aspects of social prejudice and its impact. In contrast, the absence of a significant relation with the ESS, a measure of daytime sleepiness, supports the discriminant validity of SOMS-br. This finding is crucial as it demonstrates the scale's specificity in measuring the intended construct without overlapping with unrelated domains. Our analysis of invariance further revealed that the SOMS-br's structure is consistent across groups of LGB+ cisgender men and women. This aspect of the study is particularly important, as it ensures that the SOMS-br is a reliable tool for assessing microaggressions across a spectrum of gender identities, without bias or distortion.

In summary, Study 3 reinforces the SOMS-br as a comprehensive and reliable tool for understanding the multifaceted

Figure 2

Factor Loadings From the CFA of SOMS-br Items
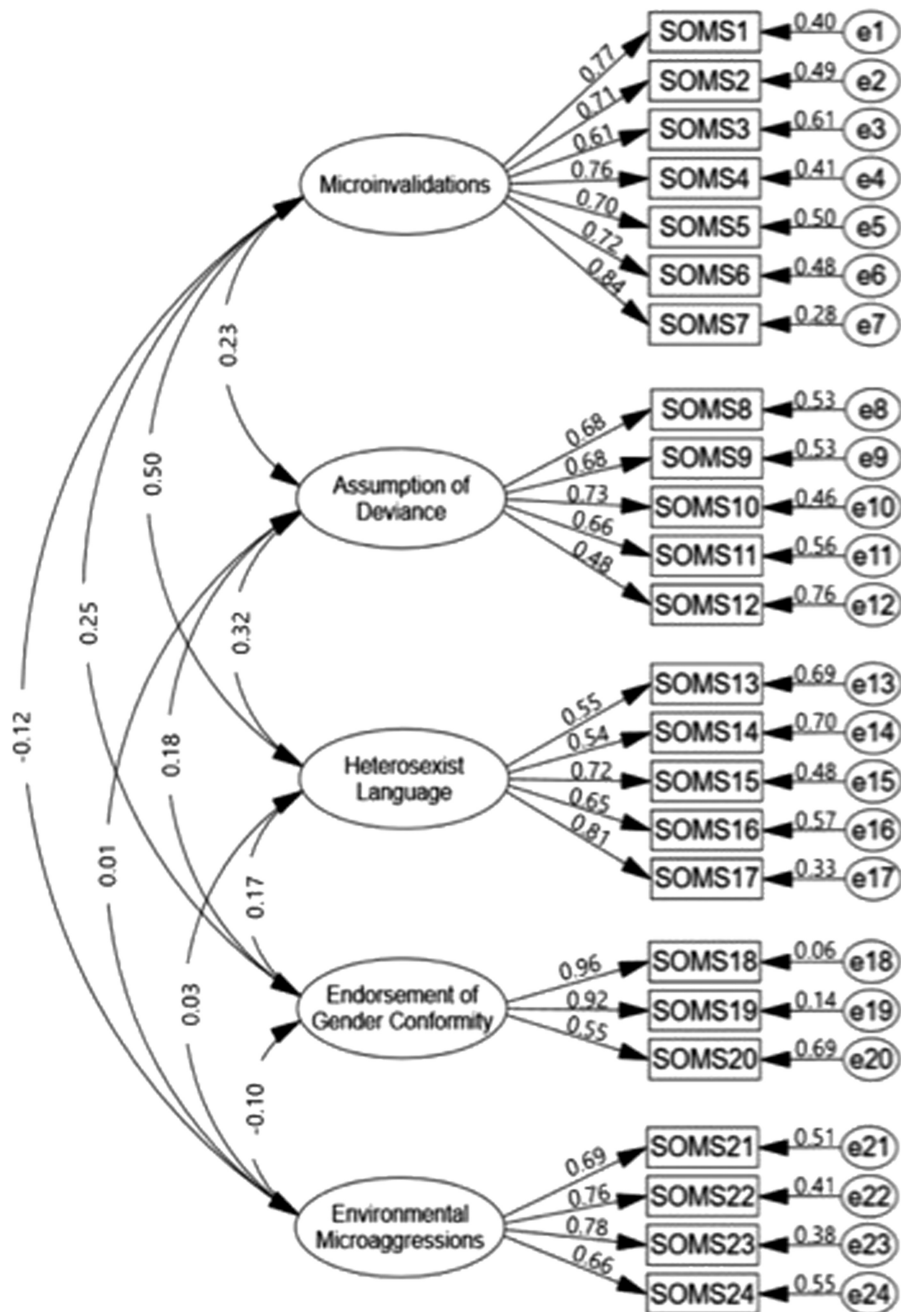
Note. CFA = confirmatory factor analysis; SOMS-br = Brazilian Portuguese version of the Sexual Orientation Microaggression Scale; SOMS = Sexual Orientation Microaggressions Scale.

experiences of microaggressions faced by the Brazilian LGB+ community. The suitability of its factorial structure, coupled with its convergent-discriminant validity and invariance across groups of LGB+ cisgender men and women, positions the SOMS-br as a useful instrument for both research and practical applications in addressing the challenges faced by sexual minorities in Brazil.

Study 4

In this study, we aimed to empirically examine the impact of sexual orientation microaggressions on the mental health of Brazilian LGB+ individuals. Specifically, we investigated how dimensions of LGB+ microaggressions relate to indices of stress, anxiety, and depression within this population. Sexual orientation

Table 4
Quality of Fit Indices for Invariance Analysis of the Five-Dimension Model of SOMS-br Across Groups of LGB+ Cisgender Men and Women

Model	χ^2	df	χ^2/df	CFI	ΔCFI	RMSEA [90% CI]	ΔRMSEA
Configural (baseline model)	666.70	484	1.37	.926		.055 [.045, .065]	
LGB+ cisgender men	360.92	242	1.49	.913		.059 [.046, .072]	
LGB+ cisgender women	305.77	242	1.26	.943		.049 [.030, .065]	
Metric	725.77	503	1.44	.911	.015	.060 [.050, .069]	.005
Scalar	726.82	503	1.45	.920	.009	.056 [.046, .066]	.004

Note. SOMS-br = Brazilian Portuguese version of the Sexual Orientation Microaggression Scale; LGB+ = lesbian, gay, and bisexual; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval.

microaggressions have been shown to detrimentally impact the mental health of marginalized social groups (K. L. Nadal et al., 2016), including LGB+ individuals (Adedeji et al., 2023). Marchi et al. (2023) reviewed studies on microaggressions toward LGB+ people and highlighted a significant association between exposure to microaggressions and increased risks of depression, anxiety, and stress. In Brazil, there have been no previous studies examining the prevalence of microaggressions against LGB+ individuals based on their sexual orientation, nor has it been clear whether these experiences are linked to poorer mental health outcomes. To address this gap, we used the Depression, Anxiety, and Stress Scale (DASS-21) to assess participants' levels of depression, anxiety, and stress. This allowed us to analyze whether these symptoms are positively associated with episodes of microaggressions, as predicted by microaggressions theory (Lui & Quezada, 2019) and supported by previous studies (Di Luigi et al., 2024).

Participants

The sample of this study was composed of 132 Brazilian individuals from Brazil who identified themselves as members of a sexual minority group, with ages ranging from 18 to 62 years ($M = 29.66$, $SD = 7.18$). The majority of the participants were single (75.0%) and self-identified as White (49.2%). In terms of socioeconomic status, 53.8% had completed higher education. In terms of sexual orientation, mostly self-declared as gay (93.9%). Concerning gender identity, 130 participants (98.5%) identified as LGB+ cisgender men. In this study, there was no participation of individuals identified as transgender or nonbinary.

Measures

Sexual Orientation Microaggressions Scale (SOMS-br; K. L. Nadal, 2019a)

We used the SOMS-br adapted in previous studies. In this study, the five-factorial model of the scale showed good fit indices, MLR $\chi^2(242) = 324.43$, $p < .001$, $\chi^2/df = 1.34$, TLI = 0.947, CFI = .940, RMSEA = .051, 90% CI [.035, .065], and good internal consistency values for the overall scale ($\alpha = .899$, $\omega = .901$), and for microinvalidations ($\alpha = .915$, $\omega = .916$), assumption of deviance ($\alpha = .765$, $\omega = .767$), heterosexist language ($\alpha = .837$, $\omega = .844$), endorsement of gender conformity ($\alpha = .846$, $\omega = .865$), and environmental microaggressions ($\alpha = .833$, $\omega = .837$) dimensions.

Depression, Anxiety, and Stress Scale (DASS-21)

The DASS-21 was developed to assess people's levels of depression, stress, and anxiety. The instrument was adapted to the Brazilian context by Vignola and Tucci (2014). The scale consists of 21 items, with seven items for each dimension (e.g., depression, anxiety, and stress). In this study, participants were asked to indicate the extent to which they experienced each of the symptoms described in the items based on their experience of microaggression episodes. They used a response scale ranging from 0 = *did not apply to me at all* to 3 = *applied to me very much or most of the time*. In this study, the three-dimensional model of the scale showed good fit indices, DWLS $\chi^2(189) = 95.95$, $p = 1.00$, $\chi^2/df = 0.51$, TLI = 0.999, CFI = .999, RMSEA = .001, 90% CI [.000, .010], and good internal consistency values for the overall scale ($\alpha = .960$, $\omega = .961$), and for the depression ($\alpha = .927$, $\omega = .930$), anxiety ($\alpha = .913$, $\omega = .914$), and stress ($\alpha = .892$, $\omega = .894$) dimensions.

Procedure

We followed the same data collection procedures utilized in previous studies. To ensure the validity of responses, we also employed the same measures used in previous studies, including CAPTCHA to prevent bot responses and restrict submissions to one per IP address to avoid duplicates. Additionally, we accepted only fully completed surveys to maintain the integrity of the data set. Participants took an average of 15 min to complete the survey, and no monetary incentives were offered for their participation.

Data Analysis

We used the lavaan package in R (Rosseel, 2012) to conduct all statistical analyses, including correlation analysis and multiple linear regression models. To assess the relationships between sexual orientation microaggressions and mental health outcomes (depression, anxiety, and stress), we first examined Pearson correlations between the five dimensions of the SOMS-br and the subscales of the DASS-21. Subsequently, we performed multiple linear regression analyses using the lm function in R to determine the extent to which each dimension of microaggressions predicted mental health outcomes. Three separate regression models were estimated, with depression, anxiety, and stress symptoms as the dependent variables. The five dimensions of the SOMS-br were entered as independent variables. This allowed us to control for the shared variance among microaggression dimensions and isolate their individual contributions to mental health.

Results

First, we examined the relation between the five dimensions of LGB+ microaggressions and indicators of depression, anxiety, and stress (Table 5). The results showed that, except for environmental microaggressions, all dimensions of microaggressions were positively associated with symptoms of depression, anxiety, and stress. In addition, we estimated three multiple linear regression models to assess the associations of microaggressions and mental health indicators (Table 6). Results showed that depression was predicted solely by the assumption of deviance, whereas anxiety and depression were predicted by both the assumption of deviance and endorsement of gender conformity.

Discussion

In this study, we examined the relation between sexual orientation microaggressions and mental health indicators of Brazilian LGB+ individuals. Our results showed that, with the exception of environmental microaggressions, all microaggression dimensions showed positive correlations with symptoms of depression, anxiety, and stress. These results are consistent with findings from research conducted by Di Luigi et al. (2024), which showed a positive and significant association between microaggressions based on sexual orientation and levels of depression, anxiety, and stress in Swedish LGB+ individuals. The lack of correlation with the environmental microaggressions dimension may be explained by the fact that the content of the items in this factor reflects the likely denial of microaggressions portrayed in social media. Future studies could investigate whether reversing the content of the items could lead to different pattern of results. Furthermore, our regression analyses indicated that depression was specifically predicted by the assumption of deviance (i.e., being perceived as inherently deviant or abnormal). At the same time, both anxiety and depression were associated with the assumption of deviance and endorsement of gender conformity (i.e., societal pressure on LGB+ individuals to conform to gender normative behaviors). Thus, individuals who experienced more microaggressions related to the assumption of deviance exhibited increased symptoms of depression. In addition, encounters associated with both the assumption of deviance and endorsement of gender conformity were related to increased symptoms of anxiety and stress in the sample.

General Discussion

Throughout four comprehensive studies, we provided robust empirical evidence of construct validity for the SOMS specifically for use in the Brazilian context (SOMS-br) and estimated its associations with critical indicators of mental health of Brazilian LGB+ individuals. The pattern of our findings was consistent with a set of well-stated criteria for evaluating psychological instruments to provide individual differences scores that are suitable in terms of content validity, factorial structure, and consistent reliability. Importantly, our results revealed the SOMS-br provides equivalent scores to measure microaggressions broadly across various gender identities within the Brazilian LGB+ spectrum. Hence, the validation of SOMS-br can represent an important contribution to research on this topic by shedding light on the intricate dynamics of microaggressions and their profound impact on the mental health of LGB+ individuals.

The SOMS-br measure fills an important gap in microaggressions literature as it was now adapted in non-WEIRD sample of sexual minority. This tool not only enhances our understanding of these subtle forms of discrimination but also paves the way for developing targeted, culturally sensitive interventions and policies. Such initiatives are crucial for promoting the mental health and overall well-being of LGB+ population, thereby addressing a critical aspect of social equity and inclusion, especially in Brazil, a country marked by deep social inequalities such as systematic prejudice and discrimination toward sexual minority individuals (Figueiredo & Pereira, 2021; Terra et al., 2022; Torres et al., 2021).

In fact, Brazil is widely known for being an LGB-friendly nation. The country hosts the world's largest LGB+ Pride parade, held annually in São Paulo. Certainly, it is a progressive nation when it comes to LGB+ rights and social equality. Same-sex marriage and same-sex adoption are legal, and discrimination based on sexual orientation is a crime for which the law provides the same penalties as for racism. All of these aspects combined reinforce the idea that Brazil might be the best place in the world for non-Latin Americans to live as LGB+ people. Nevertheless, LGB+ people continue to face high levels of violence and discrimination in this context. For 14 years in a row, Brazil has been the country with the highest number of murders of LGB+ people in the world. Furthermore, with the recent rise of the far right, anti-LGB+ discourses (e.g., banning or restricting educational content about same-sex relationships in schools) have become increasingly popular among Brazilians, an issue particularly exacerbated by the Brazilian political climate in recent years. Under a protofascist government that promoted conservative values and shared agendas of moral "cleanness," sexual and gender minorities

Table 5

Correlation Matrix Between SOMS Dimensions and the Depression, Anxiety, and Stress

Variable	1	2	3	4	5	6	7	8
1. Microinvalidation	—							
2. Assumption of deviance	.451***	—						
3. Heterosexist language	.534***	.442***	—					
4. Endorsement of gender conformity	.463***	.424***	.369***	—				
5. Environmental microaggressions	.058	.020	.115	.146	—			
6. Depression	.247***	.359***	.121	.289***	−.015	—		
7. Anxiety	.404***	.485***	.315***	.408***	−.053	.737***	—	
8. Stress	.368***	.465***	.324***	.379***	−.037	.767***	.829***	—
M	2.542	1.822	3.439	2.186	2.721	2.496	2.301	2.586
SD	0.908	0.759	0.641	0.988	0.724	0.970	0.935	0.848

Note. SOMS = Sexual Orientation Microaggressions Scale.
*** $p = .001$.

Table 6
Unstandardized Regression Coefficients of the Microaggressions Dimensions on the Symptoms of Depression, Anxiety, and Stress

Effect	Depression			Anxiety			Stress		
	b	SE	p	b	SE	p	b	SE	p
Intercept	1.940	0.498	<.001	0.974	0.435	.027	1.298	0.405	.002
Microinvalidation	0.111	0.111	.322	0.162	0.097	.099	0.104	0.091	.252
Assumption of deviance	0.378	0.125	.003	0.391	0.109	<.001	0.344	0.101	<.001
Heterosexist language	−0.185	0.152	.227	0.039	0.133	.771	0.094	0.124	.448
Gender conformity endorsement	0.163	0.095	.088	0.195	0.083	.020	0.157	0.077	.044
Environmental microaggressions	−0.050	0.111	.654	−0.131	0.097	.179	−0.099	0.090	.272

were specifically targeted (Kessler et al., 2024). These policies, which aim to curtail or restrict the LGB+ agenda, not only undermine the rights and protections of LGB+ people but also contribute to a hostile environment for these people based on increasing discrimination and violence. Consequently, these conservative discourses, reinforced by the experience of microaggressions, act as minority stressors for LGB+ Brazilians, leading to a deterioration of their mental health.

In the Brazilian context, the high incidence of microaggressions as indicated by the SOMS-br scores reveals a deeply ingrained cultural tendency to trivialize or overlook subtle forms of sexual orientation-based prejudice. This normalization of microaggressions can be attributed to a variety of sociocultural factors, including deeply rooted heteronormative attitudes, the prevalence of "machismo," and a general lack of awareness about the subtle manifestations of prejudice (Gerena, 2023). In this sense, the societal tendency to minimize the impact of microaggressions has profound implications for LGB+ individuals' mental health (Frost & Meyer, 2023). When behaviors such as derogatory jokes, exclusionary practices, or dismissive remarks are normalized, they create an environment where the LGB+ population is constantly exposed to subtle forms of invalidation and discrimination (K. L. Y. Nadal, 2023). This normalization not only perpetuates a cycle of bias and exclusion but also hinders the recognition of microaggressions as a legitimate and harmful form of prejudice.

Furthermore, the underestimation of the impact of microaggressions on sexual minority individuals contributes to a wider failure to recognize the cumulative psychological burden they impose (for a review, see Marchi et al., 2023). Unlike overt acts of discrimination, the covert nature of microaggressions often leaves individuals questioning their own experiences and feeling isolated in their distress (K. L. Nadal, 2019b). This can lead to a range of psychological effects, including increased anxiety, depression, and a diminished sense of self-worth (Lui & Quezada, 2019), as we observed in Study 4.

In this sense, recognizing and addressing microaggressions is an essential step toward achieving greater social equity and inclusion for the LGB+ population in Brazil. This requires a multifaceted approach, including public education campaigns, policy changes, and community-level interventions, aimed at challenging entrenched biases and promoting a more inclusive understanding of diversity. In summary, the psychosocial problematization of the SOMS-br findings underscores the need for a deeper understanding and acknowledgment of the subtle, yet pervasive, forms of prejudice faced by the LGB+ community in Brazil. It highlights the importance of cultural sensitivity and awareness in combating discrimination and fostering a society that respects and values diversity.

Theoretical Implications, Limitations, and Further Directions

The adaptation and validation of the SOMS in Brazil have significant theoretical implications for understanding sexual orientation microaggressions (K. L. Y. Nadal, 2023). In fact, this study enhances the conceptual framework of microaggression theory (K. L. Nadal, 2018; Sue, 2010) by providing empirical evidence from a non-WEIRD context, which is crucial for the global applicability of the theory. In Latin America, research on microaggressions toward sexual minority individuals remains scarce (for a review, see Choi et al., 2020). This highlights a critical gap in understanding within this region, as emphasized by Mendoza-Pérez et al. (2024). Therefore, the study underscores the importance of considering cultural specificities in the manifestation and perception of microaggressions. Brazilian culture, with its unique interplay of heteronormativity, machismo, and social norms, provides a particular context for these phenomena (Terra et al., 2022). In this sense, by validating the SOMS within the complex sociocultural milieu of Brazil, our research not only extends the theoretical boundaries of microaggression theory (e.g., Sue, 2010), but also emphasizes the urgency of culturally nuanced approaches to address these subtle yet pervasive forms of discrimination.

In addition, the findings suggest the need for further exploration into how microaggressions intersect with other identity factors such as race, class, and gender identity in Brazil. The country still has significant aspects of its slavery history, the legacies of slavery, and the structural racism resulting from these processes, which still permeate both social relationships and political and institutional structures (Mayorga, 2017). Even though racism appears to be something unacceptable in the country, given the existence of laws against racist violence and racial insults, racial inequality is still a recent issue on the Brazilian political agenda (Santos & Santos, 2022). In the context of sexual minorities, LGB+ people of color are twice as likely to be victims of prejudice and discrimination as people with multiple racial and sexual identities, and almost half of them live in low-income households compared to white LGB+ adults (e.g., Wilson et al., 2022). This process has been described by intersectionality theory (Crenshaw, 1989), which, in the context of LGB+ communities, seeks to recognize cultural, ethnic, and racial differences as factors associated with various forms of discrimination. According to intersectional microaggressions theory (K. L. Y. Nadal, 2023), the social experiences of racial and ethnic minority LGB+ individuals differ from the experiences of White LGB+ individuals (Sadika et al., 2020). In Wilson et al.'s (2022) study on racial disparities in well-being among LGB+ adults, the

authors report that racialized groups, such as LGB+ people of color, tend to have poorer overall health compared to their white LGB+ counterparts. Since race and socioeconomic status are a fundamental element in understanding the construction of Brazil as a nation (Santos & Pereira, 2021), the intersectionality discourse is extremely important for understanding the phenomenon of microaggressions in this context. Given the sample size of our studies, we did not examine how racial and socioeconomic status influences the experience of microaggressions. Nevertheless, further studies can deepen the discussion of how and under what conditions these factors (e.g., multiple identities and socioeconomic status), aligned with experiences of microaggressions, may function as minority stressors among LGB+ individuals (e.g., DeSon & Andover, 2024).

Moreover, we take the theory of microaggressions one step further and analyze the quality of the proposed items in the primary measure of the SOMS an innovative psychometric method (IRT) in the microaggressions domain. Using IRT, we not only assess the dimensionality of the adapted items, but also examine the overall functioning of the scale, the latent construct coverage of each item, and the discrimination and difficulty abilities of the scale. This is a pioneering approach in microaggression research and sexual minority research on mental health, as the measurement instruments commonly used in these contexts do not usually use formal procedures to define expected response patterns based on empirical cutoffs, as we have done with the IRT. Furthermore, this research program inaugurates an empirical discussion on the impact of microaggressions on the mental health of sexual minority individuals in Brazil. Using a psychometric and correlational approach, we were able to demonstrate that the experience of subtle discrimination by LGB+ individuals has far-reaching consequences for their mental health. Furthermore, by adapting the SOMS to the Brazilian context, we provide a valid and precise measure that can serve as an intervention tool in the analysis of health inequalities among sexual minority individuals in Brazil.

The results are consistent with previous work (e.g., Di Luigi et al., 2024; Mendoza-Pérez et al., 2024) that found a significant association between experiences of microaggressions based on sexual orientation and poor mental health in sexual minority individuals. In our research, specifically in Study 3, we found that a high frequency of experienced microaggressions was positively associated with symptoms of depression, anxiety, and stress in LGB+ individuals. This finding may be due to the fact that microaggressions, even if subtle experiences, have a potentially detrimental effect on the mental health of the individuals, such that the more frequently an individual experiences it, the greater the probability of a deterioration in mental health (for a review, see Marchi et al., 2023). Although the results support previous research showing that sexual minority individuals experience microaggressions, the current findings extend this growing body of research by highlighting how this subtle discrimination negatively impacts the mental health of LGB+ individuals from less developed countries such as Brazil.

The pervasive influence of heterosexism behaviors, anti-LGB+ agenda, and conservatism policies in Brazil has a significant impact on LGB+ individuals, emphasizing the urgent need for action. In this sense, these findings lay the groundwork for future research focusing on the development and testing of interventions specifically tailored to address the impact of microaggressions on the mental health of Brazilian LGB+ individuals (e.g., Martínez et al., 2023). This includes the implementation of comprehensive and culturally sensitive training programs for health care providers and educators, designed to equip them with the skills necessary to recognize and respond effectively when interacting with community members targeted by microaggressions. Additionally, mental health interventions for Brazilian LGB+ individuals should prioritize therapeutic strategies that strengthen coping mechanisms and reduce psychological distress, as well as mitigate risks such as alcohol-related problems (Scharer & Taylor, 2018). Longitudinal studies are essential to monitor and understand the long-term effects of these interventions, ensuring they remain effective and relevant over time. Finally, legislative advocacy is crucial for enacting policy changes at both local and national levels, aimed at reinforcing legal protections against both subtle and blatant discrimination and promoting a more inclusive society.

While this study marks a significant step forward, it also presents limitations that pave the way for future research. For example, an important limitation of our studies concerns the lack of representative and balanced samples from a broader spectrum of sexual minority groups. The SOMS-br validation process focused on LGB+ cisgender individuals who identify as sexual minorities (i.e., lesbians, gay men, and bisexuals), particularly men and women. Given the difficulty of accessing these individuals online, this lack of representativeness is an important limitation in generalizing our findings as well as in confirming the stability of the factorial structure of the measure among individuals from these groups. Future studies should aim to adapt and validate the SOMS-Br across a wider range of sexual minority groups, including individuals from different regions of Brazil. Additionally, it will be critical to validate the GIMS, particularly among TNB individuals, to ensure the tool's applicability to diverse sexual and gender minority communities throughout the country. Moreover, long-term studies are needed to understand the cumulative impact of microaggressions on mental health over time. Further research should explore how microaggressions interact with other forms of social disadvantage, considering Brazil's diverse social fabric. Research is also needed to develop and test interventions aimed at reducing microaggressions and supporting the well-being of the LGB+ population.

Conclusion

The empirical evidence we found in this research program is consistent with the necessary criteria for considering the SOMS-br as a psychological instrument that provides construct-based, valid scores to assess microaggressions reported by LGB+ individuals in Brazil. By conducting these studies, we not only address a critical gap in the literature but also enhance the global relevance and impact of LGB+ mental health research in Latin America. Moreover, such microaggressions have been consistently associated with critical indicators of mental health among LGB+ individuals, this paper highlights their pivotal role in how individuals adapt to stressors within the Brazilian social milieu. Further research can adopt SOMS-br to test theoretically grounded predictions about the causal, mediating, and moderating process between microaggression and mental health outcomes, paving the way for deeper insights into this complex dynamic.

Resumo

Apesar dos avanços nos direitos e na visibilidade de pessoas lésbicas, gays e bissexuais (LGB+), ainda existe uma lacuna significativa na compreensão das experiências sutis de discriminação enfrentadas por minorias sexuais no Brasil, especialmente no que

diz respeito ao impacto na sua saúde mental. Esta pesquisa examina o papel das microagressões relacionadas à orientação sexual na determinação dos desfechos de saúde mental entre indivíduos LGB+ brasileiros. Especificamente, investigamos a associação entre as experiências de microagressões e sintomas de depressão, ansiedade e estresse dentro dessa comunidade. Ao longo de quatro estudos ($N = 678$), examinamos a associação entre microagressões relacionadas à orientação sexual e os sintomas de depressão, ansiedade e estresse em indivíduos LGB+ brasileiros, garantindo primeiro a validade de conteúdo, fatorial, convergente-discriminante e a consistência interna da versão em português brasileiro da *Sexual Orientation Microaggression Scale* (SOMS-br). Os resultados mostram que as experiências de microagressões baseadas na orientação sexual estão associadas à piora da saúde mental em indivíduos LGB+ brasileiros. Além disso, os itens adaptados da SOMS-br apresentaram propriedades psicométricas adequadas para avaliar as diferenças individuais nas microagressões vividas pela comunidade LGB+ brasileira. Em conjunto, esses resultados ressaltam a validade psicométrica da SOMS-br na mensuração de microagressões no contexto brasileiro. Além disso, fornecem as primeiras evidências de que as microagressões sexuais impactam indicadores de saúde mental na comunidade LGB+ do Brasil. As implicações teóricas e práticas para a literatura são discutidas.

Palavras-chave: minorias sexuais e de gênero, microagressões, psicometria, desigualdades em saúde mental

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