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ORIGINAL ARTICLE

Associations between gender discrimination, resilience, social support, and self-harm and suicidality among transgender women in Brazil

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Objective: To explore suicidal behavior among transgender women by investigating the associations between resilience, social support, and experiences of gender discrimination and thoughts of self-harm, suicidal ideation, and suicide attempts among transgender women in Brazil.
Methods: This study draws on cross-sectional data from the Brazilian *Dinamizando a Inclusão e Valorizando as Atividades Saudáveis* (DIVAS) study. A respondent-driven sampling method was used to recruit 2,470 participants. Fourteen discrimination domains were used in a latent class analysis model to separate the sample into classes. A multiple logistic regression model was used to assess the association of each outcome (i.e., recent thoughts of self-harm and suicidal ideation, lifetime suicidal ideation, and recent and lifetime suicide attempts) with gender discrimination, resilience, and social support scores.
Results: Four classes of discrimination were obtained: low, medium-low, medium-high, and high. Higher levels of discrimination were associated with thoughts of self-harm and suicidal ideation (ORs from 1.26 to 2.39) and suicide attempts (ORs from 1.68 to 3.34), as well as lower levels of resilience (ORs from 1.79 to 4.08). However, higher levels of social support were associated with a lower chance of thoughts of self-harm or suicidal ideation (ORs from 0.66 to 0.43) and suicide attempts (ORs from 0.78 to 0.58).
Conclusions: The clear link between discrimination, whether structural or interpersonal, and suicidal ideation found in this study calls for structural changes that address harassment in all forms against gender minorities.

Keywords: Transgender woman; suicidality; stigma and discrimination; respondent-driven sampling; latent class analysis

Introduction

Transgender women (TGW) face numerous challenges in their daily lives and are victims of a range of forms of systematic and interpersonal discrimination, stigmatization, and exclusion due to their gender identity and expression. Discrimination, whether structural or interpersonal, is highly associated with a heightened risk of suicide among transgender populations.[1] In studies assessing policy-level indicators, state non-discrimination laws are related to reduced risk,[2] whereas heightened structural transphobia corresponds with an increased likelihood of both past-year and lifetime attempts. For instance, a recent study has shown that transgender adults residing in U.S. states with higher levels of structural transphobia, including transphobic laws and policies, reported experiencing more psychological distress in the past month and were more prone to reporting past year and lifetime suicidal thoughts and attempts.[3] Similarly, a Canadian study observed that lower transphobia coincided with a 76% reduction in past-year suicide attempts,[4] while another U.S. study linked lower structural stigma to fewer lifetime attempts.[5] Additionally, high rates of suicide attempts were found by transgender individuals who had experienced workplace discrimination, accounting for 91% of participants.[6]

A significant facet of institutional discrimination against transgender individuals exists in health care settings, with approximately one in four transgender people being denied equal treatment.[7] This discrimination hinders the comfortability of transgender individuals in seeking medical help, with 30.8% of transgender individuals

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delaying or not seeking needed health care due to discrimination. This discrimination is primarily due to a lack of education among health care practitioners as to how to properly treat transgender patients, with 55% of transgender participants reporting that they needed to teach their health care provider about how to receive appropriate care as a transgender person.[7] Thus, the existence of a rigid gender binary within contemporary institutions creates a damaging form of structural discrimination through which transgender individuals are marginalised.[8]

The stark presence of modern-day discrimination against transgender individuals is highly evident in Brazil, accounting for 52.3% of the reported murders of transgender people in the world between 2008 and 2017.[9] One study examining the experience of discrimination among transgender populations in Brazil reported that 96% of participants experienced discrimination targeted towards their gender expression.[10] This is translated into experiences of violence: the same study found that 52% and 42% of participants had experienced physical and sexual violence, respectively, in their lifetime.[10] As the country with the highest murder rate of TGW worldwide, the prevalence and extremity of this violence are clear.[11] In one study, the rates of experiencing discrimination and physical and sexual violence in Brazil were, respectively, 91.64%, 54.20%, and 47.54%.[8] Discrimination, physical violence, and sexual violence are all associated with increased depressive symptoms, which in turn is the strongest predictor of suicidal ideation.[10] A study found that 47.25% and 27.25% of Brazilian TGW had experienced suicidal ideation and suicide attempts, respectively.[8] An additional study found that 58.3% of TGW in Brazil experienced suicidal thoughts.[9] In addition to factors such as discrimination and physical and sexual violence, suicidal behavior among Brazilian TGW is associated with living alone and with institutional factors, including housing and workplace inequality.[8] For example, two-thirds of the participants in Rio de Janeiro reported being denied a job or losing a job because of their gender identity.[9]

Protective factors countering suicidality amongst transgender people include self-compassion, which encompasses mindfulness and self-kindness, to foster a sense of self-acceptance and community belonging while also countering shame.[1] Additionally, supportive state policies play a crucial role in moderating the relationship between minority stressors and suicide attempts,[12] with state-level transphobic laws and policies shaping mental health outcomes among transgender adults.[3] Multilevel interventions, including affirming mental health treatments, provider-training interventions, and supportive legislation, are vital in addressing structural transphobia's impact on mental health.[3] Social support from family is also essential for the well-being of transgender individuals and positively impacts their quality of life.[6] For instance, research involving young TGW revealed that maternal support decreased the likelihood of suicidal ideation by nearly two-thirds.[13] Similarly, another study found a significant negative correlation between family support and suicidality among gender minority adults.[14] Additionally, support from peers and significant others demonstrated protective effects, although these findings were less consistent across different studies.[6,15,16]

Resilience is a key protective factor that can mitigate the adverse effects of minority stress,[12] which refers to the mental health consequences of prejudice (including perceived, anticipated, or internalized) faced by minority groups, as well as the protective factors that mitigate these effects.[17] TGW with higher resilience levels have lower depressive symptoms, thus moderating the likelihood of suicidal ideation in this group.[10] However, while resilience has been shown to correlate with fewer depressive symptoms, it may not alleviate the strong effects of discrimination and violence on mental health.[10,17] This is supported by a Brazilian study of transgender individuals in two capital cities, which found strong associations between all dimensions of minority stress and depressive symptoms, suicidal ideation, and suicide attempts.[17] Building on these findings, the present study investigated the associations between resilience, social support, and experiences of gender discrimination and thoughts of self-harm, suicide ideation, and suicide attempt among TGW and *travestis* in Brazil. *Travesti*, commonly translated as "transvestite," refers to a distinct form of trans identity prevalent in Brazil. This term carries cultural and political significance that extends beyond the limitations of its conventional translation,[18] which is why we retain the original term (in italics) throughout this manuscript.

Methods

This study was based on data from the Brazilian Dinamizando a Inclusão e Valorizando as Atividades Saudáveis (DIVAS) study, one of the largest worldwide samples of TGW.[19] DIVAS is a cross-sectional prevalence study of sociodemographic characteristics, behavior, and medical concerns of TGW and *travestis*, particularly the prevalence of human immunodeficiency viruses, hepatitis, and syphilis. For this study, we focused on reported experiences of discrimination, resilience, and social support and their association with recent thoughts of self-harm or suicidal ideation, lifetime suicidal ideation, recent suicide attempts, and lifetime suicide attempts.

Sample

The DIVAS study was conducted between 2016 and 2017 across 12 Brazilian state capitals.[19] Using respondent-driven sampling, the study recruited 2,846 TGW. After excluding 376 participants (13.2%) due to missing data on key variables (including gender discrimination, resilience, social support, or other study-specific measures) the final analytic sample comprised 2,470 participants. The sample was geographically distributed as follows: Belém (n=220), Belo Horizonte (n=132), Brasília (n=176), Campo Grande (n=93), Curitiba (n=231), Fortaleza (n=323), Manaus

(n=203), Porto Alegre (n=60), Recife (n=312), Rio de Janeiro (n=243), Salvador (n=138), and São Paulo (n=339).

Outcomes

Recent thoughts of self-harm and suicidal ideation were assessed with the question "in the last 15 days, how often have you thought that you would be better off dead, or of hurting yourself?," which was adapted from the Patient Health Questionnaire-9[20] and dichotomized into no for those answering "not at all," and yes for those answering "several days," "more than half of the days," or "nearly every day." This dichotomization was used to enhance the statistical power for analysis while avoiding potential violations of the proportional odds assumption required for ordered logistic regression.

The occurrence of recent suicide attempts (in the last 12 months), lifetime suicide attempts, and lifetime suicidal ideation was assessed using the following questions: 1) Have you ever thought of killing yourself? (lifetime suicidal ideation); 2) Have you tried to kill yourself in the past 12 months? (recent suicide attempt); 3) Have you ever attempted to kill yourself? (lifetime suicide attempt).

Experiences of gender discrimination

The participants reported whether they had experienced gender discrimination in the following 14 domains (yes/no): 1) Places of worship/religion (Religion); 2. In health facilities or by health professionals (Health); 3) By police officers or in police departments (Police); 4) By work colleagues, being fired, not being hired (Work); 5) At home or by family members (Family); 6) By teachers or classmates (School); 7) In public services (Public Service); 8) In commercial businesses (Business); 9) In leisure facilities and places (Leisure); 10) Being harassed on the streets (Street); 11) In public toilets (Public Toilet); 12) In collective public transport, such as buses or trains (Public Transport); 13) In individual public transport, such as taxis or app-based transport services (App-based Transport); 14) Other experiences not described above (Other).

The questions were asked directly to each participant by the interviewer, who explained each situation as required.

Resilience

Resilience was measured using the validated Portuguese version of the Resilience Scale-25.[21] This scale consists of 25 statements, measured on a 5-point Likert scale, where participants can choose from completely disagree to completely agree. The answers were then re-coded to numbers from 0 to 4, which were added together and then divided by 100 to obtain a final resilience score that ranged between 0 and 1. This score was then categorized into low (0 to 0.5), moderate (0.51 to 0.75), and high (0.76 to 1.00) resilience groups. This quartile-based categorization was used due to the expected non-linear relationship between resilience and the outcomes.

Social support

The Brazilian version of the validated Medical Outcomes Study Social Support Survey[22,23] was used to assess the participants' social support. This tool consists of 19 questions answered on a 5-point Likert scale, with responses ranging from none of the time to all of the time. Each answer was coded from 1 (none of the time) to 5 (all of the time), summed, and subtracted from 19. The final score was divided by 76 to convert the social support score to a range between 0 and 1. As with the resilience score, the social support score was then categorized as low (0 to 0.5), moderate (0.51 to 0.75), or high (0.76 to 1.00).

Sociodemographic variables

The sociodemographic information included age (in years), gender identity ("*travesti*," woman, trans woman, other), race (White, Black, mixed, Asian, Indigenous), marital status (single, in a relationship, married/de facto, separated/divorced/widowed), education level (up to middle school, high school, post-high school education), housing arrangements (owner, leaser, living with friends/family or in a hotel, homeless, other), religion (no religion, Catholicism, African-Brazilian religions, Evangelicalism, Spiritism, other), and current engagement in sex work (no, yes).

Statistical analysis

All analyses were performed in R 4.3.1,[24] and the specific additional packages used in each session are described below.

Latent classes of discrimination

The 14 above described discrimination domains were used in a latent class analysis model to separate the sample into two to five classes. Three statistical indices, Akaike information criteria, Bayesian information criteria, and sample-adjusted Bayesian information criteria, were used to select the best model. For all information criteria indices, the lowest values were associated with a better model. The decision regarding the final model was based on a combination of theoretical understanding of gender discrimination in Brazil and the statistical indices. As highlighted by Weller et al.,[25] a model with superior statistics that makes no sense theoretically is not useful.

Latent class analysis was performed using the poLCA package.[26] The posterior probabilities of each discrimination experience in each class were used to characterize the classes.

The association between the chosen latent classes and sociodemographic variables was modeled using multiple multinomial logistic regression. The model estimate was performed using the "one-step" approach,[27] where the model parameters are estimated as part of the latent class model estimation to minimize potential biases.[28] The multinomial model results are presented as odds ratios (ORs) and 95%CIs, with the lowest discrimination class as the reference.

The association between discrimination, resilience, social support, and self-harm and suicidal behavior

A multiple logistic mixed regression model was specified for each of the four outcomes (recent thoughts of self-harm and suicidal ideation, lifetime suicidal ideation, and recent and lifetime suicide attempts). Each model included the gender discrimination class, resilience, and social support scores. The city where the data were collected was included as a random intercept to adjust for any possible effect. Demographic variables were not included in the final models, as they were used when building the discrimination latent class model. The results are presented as ORs and 95%CI. No respondent-driven sampling-based weights were applied to the analyses, following the most recent research on the use of weights in models for respondent-driven sampling data.[29]

Ethics statement

All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the 1975 Helsinki Declaration of 1975, as revised in 2008. All procedures involving human subjects/patients were approved by the research ethics board of the Escola Nacional de Saúde Pública Sergio Arouca/Fundação Oswaldo Cruz (CAAE 49359415.9.0000.5240). Written informed consent was obtained from all participants, who could withdraw consent at any stage of the process or skip any questions perceived as too sensitive, personal, or distressing.

Results

Of the 2,846 participants in the original sample, a total of 376 (13.2%) records were excluded due to missing data in at least one of the study variables. A comparison of the excluded and included participants is shown in Supplementary Table S1. Overall, only marginal differences were observed between the two samples. Among the included participants, there was a higher percentage of individuals who identified as a trans woman (41.6% vs. 33.2%) and Catholic (37.3% vs. 27.9%) and a lower percentage of individuals who identified as Spiritist (6.3% vs. 10.6%). Table 1 details the sample's demographic results.

Table 1 Demographic characteristics of trans women participants (n=2,470)

Demographic characteristics	
Age (years)	
Mean (SD)	28.8 (9.4)
⩽ 24	1,047 (42.4)
25-34	828 (33.5)
⩾ 35	595 (24.1)
Gender identity	
Travesti	1,042 (42.2)
Woman	377 (15.3)
Trans woman	1,027 (41.6)
Other	24 (1.0)
Education	
Up to middle school	979 (39.6)
High school	1,247 (50.5)
Technical or university degree or more	244 (9.9)
Race	
White	567 (23)
Black	490 (19.8)
Mixed	1,292 (52.3)
Asian	56 (2.3)
Indigenous	65 (2.6)
Housing	
Owner	1,046 (42.3)
Leaser	748 (30.3)
Living with friends, family, or in a hotel	395 (16.0)
Homeless	163 (6.6)
Other†	118 (4.8)
Religion	
None	656 (26.6)
Catholicism	922 (37.3)
Afro-Brazilian religions	404 (16.4)
Evangelicalism	275 (11.1)
Spiritism	155 (6.3)
Other	58 (2.3)
Marital status	
Single	1,682 (68.1)
In a relationship	396 (16.0)
Married	329 (13.3)
Separated, divorced, or widowed	63 (2.6)
Current engagement in sex work	
No	1,128 (45.7)
Yes	1,342 (54.3)

Data presented as n (%).
† Includes prison, squatting, hospitals, or public institutions.

Demographic characteristics of participants

The participants' demographic characteristics are presented in Table 1. More than two-thirds (75.9%) were younger than 35 years and single (68.1%). Their education levels were generally low, with only a small minority having more than high school education (9.9%). More than one-quarter lived in unstable housing (i.e., living with friends or family, being homeless, or other arrangements), and less than half (42.3%) owned their own home. More than half identified as mixed race (52.3%), with another 19.8% identifying as Black, and the vast majority identified as either trans women (41.6%) or *travesti* (42.2%). More than one-third of the participants were Catholic (37.3%), and more than half were currently engaged in sex work (54.3%).

Experiences of gender discrimination, resilience, and social support

The experience of gender discrimination was pervasive across the sample in all investigated domains (Figure 1). The lowest proportion of discrimination experiences occurred in app-based transportation services and public service places, with 12.2% and 17%, respectively. Approximately one in four participants experienced dis-

crimination in places of worship/religion (23.7%), by police officers or in police departments (25.7%), or in health services or by health professionals (29.6%). Notably, more than two-thirds of the participants (77.1%) had experienced discrimination on the streets at least once, whereas approximately half had discriminatory experiences in commercial businesses (56.7%), leisure facilities (48.6%), school/university (48.6%), or public transportation (45.5%).

Latent classes of gender discrimination were formed based on the 14 discrimination domains. The best model fit consisted of four latent classes, categorized as Low, Medium-Low, Medium-High, and High levels of discrimination. Supplementary Table S2 presents the statistical indices for the latent class models. The model with four classes presented the lowest Bayesian information criteria and sample-adjusted Bayesian information criteria, with the second lowest Akaike information criteria, offering better interpretability and higher entropy, which indicates how accurately the model defines classes.[25]

Figure 1 shows the posterior probabilities of experiencing gender discrimination in all 14 domains for each of the four groups (i.e., Low, Medium-Low, Medium-High, and High). Although a line graph is arguably not the best option to represent this categorical variable,[30] it is one way to clearly show the differences among classes of discrimination. As shown in Figure 1, even the low discrimination group had a high probability (36%) of experiencing harassment on the streets or discrimination by family members (11%). Notably, the chance of experiencing gender discrimination in any of the domains analyzed was over 60% in the high discrimination group, with all participants reporting harassment on the streets and in commercial businesses.

The distribution of discrimination, resilience, and social support classes is shown in Supplementary Figure S1. While social support results were more evenly distributed across the three categories (low social support: 39.6%; moderate social support: 21.6%; high social support: 38.9%), the skewness of the resilience score distribution

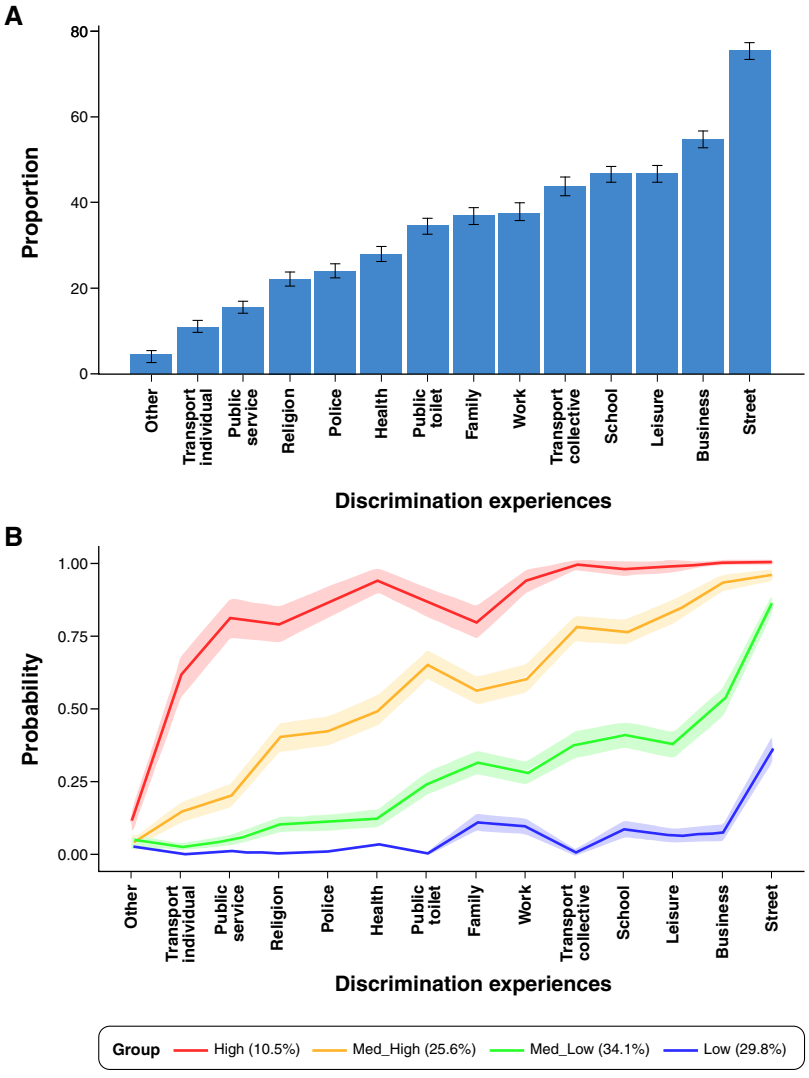


Figure 1 A) Proportion of discrimination experiences. B) Posterior probabilities of discrimination by latent class.

is evident, with 78.9% of the sample being classified as high resilience and only 1.2% as low resilience.

The multinomial regression results for the association between sociodemographic factors and discrimination classes are presented in Supplementary Figure S2. When taking the low discrimination category as a reference, older age was associated with a higher likelihood of experiencing high discrimination (OR_{High}: 1.02, 95%CI 1.01-1.04). While this finding suggests only a 0.02% increase in the likelihood of experiencing high discrimination per additional year of age, this effect compounds over time. For example, a 30-year-old faces a 22% higher probability of encountering significant discrimination than a 20-year-old, demonstrating how these incremental risks accumulate across the lifespan.

No significant differences were observed between specific gender identities or race and discrimination, with the exception of "other" gender for the high discrimination group (Supplementary Figure S2). Being separated or widowed was associated with a lower likelihood of reporting discrimination for all groups ($OR_{Med-Low}$: 0.59, 95%CI 0.32-1.09; $OR_{Med-High}$: 0.59, 95%CI 0.31-1.15; OR_{High}: 0.16, 95%CI 0.04-0.71), while a higher education was associated with higher levels of discrimination ($OR_{Med-Low}$: 0.90, 95%CI 0.61-1.33; $OR_{Med-High}$: 1.24, 95%CI 0.83-1.86; OR_{High}: 1.79, 95%CI 1.08-2.98). Compared to participants who reported not having a religion, only Catholic participants had a lower risk of experiencing higher levels of discrimination ($OR_{Med-Low}$: 0.82, 95%CI 0.63-1.06; $OR_{Med-High}$: 0.64, 95%CI 0.48-0.85; OR_{High}: 0.63, 95%CI 0.43-0.93). Those reporting current sex work had a higher likelihood of experiencing higher levels of discrimination ($OR_{Med-Low}$: 1.30, 95%CI 1.05-1.61; $OR_{Med-High}$: 1.24, 95%CI 0.83-1.86; OR_{High}: 1.79, 95%CI 1.08-2.98) in comparison to those who did not engage in sex work at the time of the survey. Housing also influenced experiences of gender discrimination: the less stable their housing situation, the stronger the relationship with gender discrimination. Leasers were slightly more likely than owners to experience discrimination ($OR_{Med-Low}$: 1.07, 95%CI 0.85-1.36; $OR_{Med-High}$: 1.42, 95%CI 1.091.85; OR_{High}: 2.23, 95%CI 1.53-3.23), although those in "other" living arrangements (which included prison, hospital, invaded rooms, among others) reported a very high chance of discrimination ($OR_{Med-Low}$: 2.12, 95%CI 1.15-3.91; $OR_{Med-High}$: 4.33, 95%CI 2.35-7.98; OR_{High}: 9.47, 95%CI 4.73-18.94).

Thoughts of self-harm, suicidal ideation, and suicide attempts

The random effects variance components for cities across all models ranged from 0.002 to 0.053, indicating minimal between-city heterogeneity in intercepts. Figure 2 shows the prevalence of recent thoughts of self-harm and suicidal ideation, lifetime suicidal ideation, suicide attempts in the last 12 months, and lifetime suicide attempts.

Higher levels of discrimination were associated with recent thoughts of self-harm and suicidal ideation (ORs ranging from 1.26 to 1.72) and were more strongly associated with lifetime suicidal ideation (ORs ranging from 1.85-2.39) than low levels of discrimination (Figure 3). The order of the resilience category was changed to keep high as the reference level, given the low frequency of the low category. Lower levels of resilience were associated with higher chances of recent thoughts of self-harm and suicidal ideation (ORs ranging from 1.41-1.91) and lifetime suicidal ideation (ORs ranging from 2.06-2.87). Moderate and high levels of social support were associated with a lower risk of recent thoughts of self-harm and suicidal ideation (ORs ranging from 0.43-0.60), as well as lifetime suicidal ideation (ORs ranging from 0.65-0.66), although a gradient was not apparent in this last case (Figure 3).

Similarly, higher levels of discrimination were more strongly associated with a self-reported suicide attempt in the previous 12 months (ORs ranging from 2.13 to 3.34) and with lifetime suicide attempts (ORs ranging from 1.68-2.75) than low levels of discrimination (Figure 3). Lower levels of resilience were also associated with a higher chance of self-reported suicide attempts in the previous 12 months (ORs ranging from 1.96-2.76) and

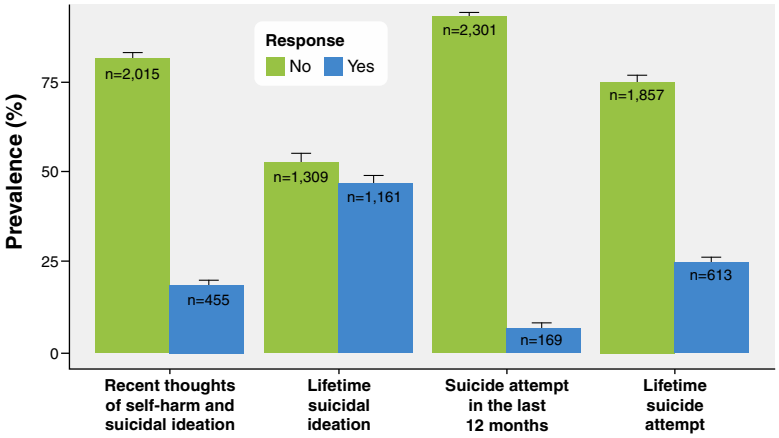


Figure 2 Prevalence of reported events of recent thoughts of self-harm, lifetime suicidal ideation, and recent (12-months) and lifetime attempted suicide.

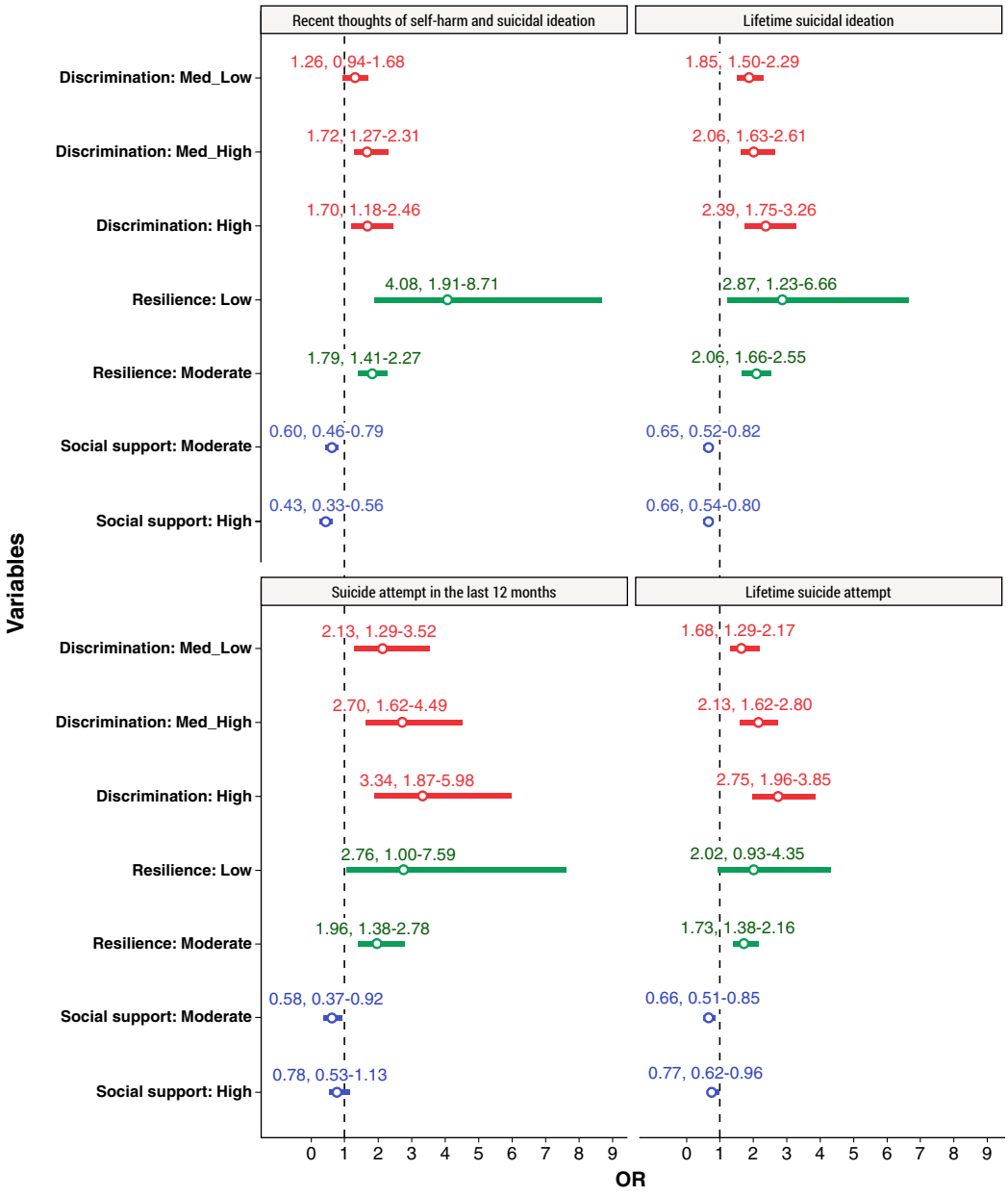


Figure 3 Multiple mixed logistic regression model results. Different colors denote different exposures. Numbers describe ORs and respective 95%CIs. Dashed lines represent the reference category (low discrimination, high resilience, and low social support). OR = odds ratio.

lifetime suicide attempts (ORs ranging from 1.72-2.02). Finally, higher social support was also associated with a lower chance of self-reported suicide attempt in the previous 12 months (ORs ranging from 0.58-0.78) and lifetime suicide attempts (ORs ranging from 0.66-0.77), than lower social support (Figure 3).

Discussion

This study investigated associations between resilience, social support, gender discrimination, and suicidality and self-harm among TGW from several capital cities in Brazil. Such research is timely, since Brazil has led the world in transgender-hate homicides for 14 consecutive years, with 131 transgender individuals murdered in Brazil in 2022 alone.[31] While these numbers are not official, as the Brazilian government does not collect or make available data on the number of transgender people murdered in the country, they point to a concerning trend.

Our results are consistent with previous research that has found high levels of suicidal behavior and discrimination against TGW in Brazil.[9,32] However, our study extended this qualitative research by investigating a range of sociodemographic determinants associated with discrimination and quantified how different levels of discrimination were associated with suicidal behavior

among TGW. One important finding was the strong association between discrimination and recent suicidal ideation and suicide attempts, which was higher in magnitude among those experiencing high levels of discrimination. Also of note is that even among TGW characterized as experiencing low discrimination, there remained a high prevalence of lifetime street harassment. Among TGW classified in the high discrimination group, over 60% experienced gender-based discrimination on the streets and in commercial establishments. It is, therefore, not surprising that TGW are victims and survivors of such violence.[33,34] Street harassment, which has been a topic of concern in feminist discourses for a long time, has more recently been gaining attention from activists. However, given its absence in the criminal and restorative justice systems in Western societies, there has been very little progress toward addressing this issue.[35] For TGW, street harassment is pervasive, with Lubitow et al.[36] even introducing the term "transmobilities" to describe the ways in which transgender and gender non-conforming individuals are forced to move in society to protect themselves from a culture that "normalizes violence and harassment towards gender minorities." Our findings, which show high levels of street harassment and a strong association between discrimination and suicidal behavior in TGW, strengthen calls for structural change that address harassment in all forms against gender minorities.

Structural gender-based discrimination refers to institutionalized norms and policies created to marginalize individuals who do not conform to the gender binary.[1] This form of discrimination is manifested in a variety of ways, including a lack of laws and policies to address public harassment, a lack of access to gender-affirming procedures, housing inequality, and a lack of workplace protection.[1] In our study, unstable housing was associated with further vulnerabilities for TGW, i.e., the less stable the housing situation, the higher the chance of experiencing discrimination. Findings from the National Transgender Discrimination Survey in the U.S. found that transgender individuals who had experienced housing discrimination reported high rates of suicide attempts.[6] At the same time, previous research on TGW in Brazil found that housing stability supports trans women's mental health and may prevent suicidal ideation and suicide attempts.[37] In addition, it is also important to note that such discrimination may prevent TGW from effectively accessing housing.[38] Housing instability seems to lead to more gender discrimination, which is likely to lead to poorer mental health, which is likely to lead to higher levels of suicidal ideation and suicide attempts among TGW. Addressing structural gender-based discrimination is a necessary step to break this cycle of harm.

Sex work is another area in which structural changes are needed to better protect TGW from discrimination and violence. Numerous studies indicate that a significant proportion of TGW often turn to sex work, primarily due to the intersection of social stigma and employment discrimination, which restricts their income-earning prospects and poses a fundamental challenge to their basic survival.[39,40] Participants in the present study who reported being currently involved in sex work were also more likely to experience higher levels of discrimination. Previous studies have reported that sex workers in general and transgender sex workers in particular experience high levels of violence and gender-based discrimination.[41,42] Urgent structural changes are required to protect TGW from gender-based violence and discrimination in sex work, including better policies to address high levels of stigma, improved access to health care and income support, and, fundamentally, the problematization of normalized violence against sex workers.

Interpersonal discrimination refers to personal experiences of harassment, rejection, and violence experienced at an individual level.[1] According to the Minority Stress Model, people with minority identities, including LGB and transgender individuals, experience chronic stress related to stigmatization and exposure to discrimination, leading to psychological distress and, consequently, suicidal ideation.[12] These experiences of harassment and rejection are the foundations of gender-based violence, and transgender individuals who reported gender-based violence were four times more likely to have attempted suicide than those without a history of gender-based violence.[6] In this context, social support from the family is essential for the well-being of transgender individuals and positively impacts their quality of life.[6] Simultaneously, social support and acceptance of one's identity emerge as prominent resilience themes,[12] together with family and peer support.[10] Findings from the present study strengthen this association between social support, resilience, and suicidal ideation and suicide attempts. They also suggest that approximately 10% of TGW still experience instances of discrimination by family members, even in the low discrimination group. It is interesting to note here the intersectionality of gender discrimination by family members, housing instability, sex work, and suicidal ideation.[43] Transgender individuals frequently leave the stability of their homes due to family discrimination and violence, commonly leading to housing instability and sex work as the main means of employment, both of which increase their levels of suicidality. In order to foster better mental health outcomes for TGW and reduce their levels of suicidality, working with family members to support the gender identity of their loved ones is paramount.

We also found that higher levels of education are associated with higher levels of gender discrimination. A plausible explanation for this may be a potential heightened awareness and a more nuanced understanding of more subtle forms of discrimination, rather than the existence of higher levels of discrimination targeted at this particular group. Older age was also associated with a higher chance of high levels of discrimination. Similarly, this group may be more aware, given their life experiences, of different forms of discrimination and be more attuned to such experiences compared to their younger counterparts, rather than necessarily attracting more discrimination. Another potential explanation, in this case, is the cumulative effect of experiencing discrimination over a lifetime.[44]

Although it has been argued that it is important to view interpersonal discrimination through the lens of intersectionality,[45] the results of our study did not show significant associations between gender identity or race and discrimination. Regarding gender, identifying as a woman, transwoman, or *travesti* may not represent a significant difference in the eyes of an already highly discriminatory society.[46] Previous studies have also found a mixed pattern of correlations regarding race and discrimination. For instance, Miller & Grollman[47] found that Asian, Pacific Islander, and Black participants reported fewer discriminatory events than White participants. Some have argued that this may be a result of higher levels of resilience within these groups; given their lower degree of social integration and conformity, gender and race minorities may be more resilient to experiences of discrimination compared to cisgender Whites.[48] While we found no differences between Whites and people of color, our results did find a strong association between higher levels of resilience and social support and a lower chance of thoughts of self-harm and suicidality.

An important limitation of the present study, one that is inevitably a part of most cross-sectional studies on suicidality, is survivorship bias, that is, only TGW who survive suicidal ideation or attempts, or who are healthy enough to participate in surveys, are included in the study sample.[49] This may have contributed to under-representation of the prevalence of suicidal ideation and suicide attempts among TGW in our sample. A further limitation stems from the self-report survey design, which may have introduced response bias. This concern is particularly relevant given the skewed distribution of resilience scores observed in our data. Participants may have unconsciously chosen responses that portrayed themselves more favorably, potentially inflating resilience scores through social desirability effects. In addition, the cross-sectional nature of the study limits our ability to assess suicidality and suicidal behavior changes over a lifetime and to clearly determine the temporal and causal relationship between experiences of discrimination, resilience, social support, and suicidality. Future longitudinal studies incorporating clinical samples and mixed methods approaches (e.g., linking survey data with hospital records) could help mitigate these limitations by capturing more severe cases of suicidality and triangulating self-reports with objective measures.

The fact that the sample was limited to capital city dwellers means we were unable to capture the experiences of TGW living in rural communities. Research suggests that experiences of discrimination and mental health outcomes differ between urban and rural transgender individuals. Urban transgender people have reported higher levels of discrimination and mental health issues than their rural counterparts.[50,51] However, both rural and urban cluster transgender individuals experienced more marginalization stressors than those in urban areas.[50] Given these inconclusive results, more studies exploring the differences between urban and non-urban dwellers would be beneficial.

Another study limitation pertains to the measure of discrimination. While the 14-item questionnaire captured the participants' self-reported experiences, it was not explicitly designed to differentiate between interpersonal and structural forms of discrimination. Although the items were derived from prior literature on discrimination and reviewed for face validity, the scale was adapted for this study without having validated its psychometric properties. Consequently, the extent to which the instrument distinguishes between these two dimensions remains unclear, potentially limiting nuanced interpretations of how distinct forms of discrimination operate. Finally, although the optimal goal of any chain-referral process in respondent-driven sampling is to identify a fully connected, single-component network, this goal is never reached in real-life conditions due to logistical constraints and bottlenecks (e.g., geographic factors, ethnic factors, etc.), as well as the existence of people who are not connected to any social network. The latter is usually a consequence of social isolation, which is commonly associated with higher levels of suicidality, meaning that our results potentially underestimate risk factors and suicidality among TGW in Brazil.

Despite its limitations, this study makes a significant contribution to the literature by being the first to examine the associations between resilience, social support, gender-based discrimination, and the risk of suicidality and self-harm among a large, geographically diverse sample of TGW in a major developing economy. Notably, our findings reveal that even participants who reported low levels of discrimination by the study's metrics still experienced alarmingly high rates of discriminatory events relative to general population norms. Furthermore, while the prevalence of such experiences varied across individuals, the consistent pattern of association remained: higher exposure to discrimination correlated with a higher risk of self-harm and suicidality. Additionally, this study advances the field by empirically testing resilience and social support as potential moderators of these adverse outcomes, offering new insights into protective factors for this underserved population.

Overall, our study supports previous findings that experiences of discrimination are associated with self-harm and suicidality among TGW, while resilience and social support are associated with a reduced risk of suicidality. This is important because, as a society, we need to invest in structural and interpersonal strategies to reduce harm and improve the wellbeing of individuals of all gender identities and expressions, as well as in providing gender minorities, including TGW, with the means to increase their resilience and expand their social support networks to overcome these barriers. This should be done in conjunction with necessary individual psychosocial or pharmacological treatment to support TGW and reduce their alarming suicide rates.

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Disclosure

The authors report no conflicts of interest.

Data availability statement

Due to being sensitive information related to a threatened minority in Brazil, only approved personnel may access the data. Researchers interested in collaborations or further information are invited to contact SS at s.sperandei@westernsydney.edu.au.

Author contributions

SS: Conceptualization, Data curation, Formal analysis, Writing – review & editing.
FIB: Conceptualization, Data curation, Writing – review & editing.
CL: Writing – original draft, Writing – review & editing.
SM: Data curation, Formal analysis, Writing – review & editing.
AP: Conceptualization, Writing – review & editing.
AR: Conceptualization, Writing – original draft, Writing – review & editing.
All authors have read and approved of the final version to be published.

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