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Depression, Self-Esteem, and Resilience and its Relationship with Psychological Features of Sexuality among Transgender Men and Women from Brazil

Ramiro Figueiredo Catelan[1] · Alexandre Saadeh[2] · Maria Inês Rodrigues Lobato[3] · Daniel Augusto Mori Gagliotti[2] · Henrique Caetano Nardi[4] · Angelo Brandelli Costa[1]

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Abstract

This cross-sectional study investigated whether depression, self-esteem, and resilience (mental health indicators) are associated with some psychological features of sexuality (sexual fear, sexual anxiety, sexual dissatisfaction, and sexual body image worries) in a sample of 462 transgender men and women from Brazil. Pearson's correlations were performed between all continuous variables in the study. Those that were significantly associated with the psychological features of sexuality in previous analyses were tested as independent variables in multiple linear regression models. Sexual fear, sexual anxiety, sexual dissatisfaction, and sexual body image worries were negatively related to self-esteem and resilience, while positively related to depression. Higher levels of depression were associated with sexual fear, while higher levels of depression and lower self-esteem were associated with sexual anxiety. In addition, higher levels of depression and lower levels of resilience were associated with sexual dissatisfaction. Depression and resilience were associated with the composite score of sexual dissatisfaction and sexual anxiety. Our results suggest that negative mental health indicators may impair the sexual life of transgender individuals. Clinical interventions should be developed and tested to address the psychological features of sexuality.

Keywords Sexual health · Transgender · Depression · Self-esteem · Resilience

Introduction

Several negative psychological outcomes among gender and sexual minorities have been well documented in the literature for the last 25 years. A meta-analysis of 54 studies on self-harm without suicidal intent among gender and sexual minorities indicated a high lifetime prevalence of this behavior among sexual minorities (29.68%) and gender minorities (46.65%), while among heterosexual and/or cisgender persons, the prevalence was 14.57%, highlighting a significant disparity. Belonging to a sexual minority (whether being, at the same time, a gender minority or not) is significantly associated with self-injury behaviors (Liu et al., 2019).

In Brazil, where our study took place, transgender persons are systematically exposed to violence and social marginalization, which leads them to several detrimental situations. A recent study found that around 67.20% transgender individuals had depressive symptoms, an extremely high rate considering that the general prevalence among the Brazilian population is 5.8%. The prevalence of suicidal ideation was 67.72%, while that of suicide attempts was 43.12%. Among those who attempted suicide, 80.50% reported associating their attempt with being a transgender person. The aversive context to which transgender individuals are exposed is illustrated by the fact that 67.50% of the sample reported having avoided a location for fear of being attacked or thrown out for being transgender (Chinazzo et al., 2021).

✉ Ramiro Figueiredo Catelan
ramirocatelan@gmail.com

[1] Department of Psychology, Pontifícia Universidade Católica do Rio Grande do Sul, Ipiranga Avenue, 6681, Porto Alegre 90619-900, Brazil

[2] Transdisciplinary Gender Identity and Sexual Orientation Service (AMTIGOS-NUFOR), Hospital de Clínicas da Faculdade de Medicina, Universidade de São Paulo, São Paulo, Brazil

[3] Gender Identity Program (PROTIG), Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

[4] Department of Social Psychology, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

Transgender's murder rates in Brazil are the highest in the world, with an average of 118.2 murders/year between 2008 and 2019 (Transgender Europe, 2020). Between 33.85% and 45.16% of these individuals are not currently employed, most of them reporting having jobs denied due to their gender identity (Costa et al., 2020). A study on the health conditions of transgender women (TW) in the state of Rio de Janeiro found that the participants had low income (62.0% lived on with less than USD 10.00 /day), demonstrated large involvement in sex work (78.6%), and reported a higher occurrence of sexual (46.3%) and physical (54.0%) violence (Ferreira et al., 2019).

Another study in the state of Rio Grande do Sul suggested that laboratory-confirmed HIV prevalence for TW was 25%. Compared to the prevalence in Brazilian general population, which was 0.6% at the time of our current study, the odds of HIV infection prevalence in transgender people were 55.55% (Costa et al., 2014). When asked if they avoided healthcare because of being transgender, 43.2% of participants of another study answered affirmatively. Most of the participants who reported being discriminated against in any situation have avoided seeking care when they had needs compared to those who did not report being discriminated against. A history of discrimination was associated with a 6.7-fold increase in the frequency of avoidance of healthcare services (Costa et al., 2018).

Minority stress model is one of the main theoretical explanations for broader gender and sexual minorities health impairments. Minority status leads to increased exposure to proximal stressors, due to distal stressors, and the combination of both is associated with adverse health outcomes (Brooks, 1981; Meyer, 1995). Distal stressors include family and social rejection, physical and sexual assault, healthcare services mistreatment, labor market discrimination, and other general human rights restrictions and violations. Proximal stressors are psychological effects of distal stress, including perceived discrimination (the impact of directly perceiving that a minority status leads to discrimination), anticipated prejudice (expectation of rejection and recrimination), and internalized prejudice (negative beliefs on their own gender and sexual status) (Meyer, 2003).

In recent years, adaptations of the original model have been made to address the unique vulnerabilities to which transgender people are exposed (Hendricks & Testa, 2012). Gender minority distal stressors include verbal trans bashing, restriction on public bathroom access, struggling to get gender-concordant identity documents, and copious healthcare access barriers (e.g., hormonal therapy, surgeries) (Hidalgo et al., 2019). Gender proximal stressors include visual conformity with affirmed gender or "passing" concerns (a person's feeling of how they may be perceived by others, which may lead them to hide their transgender visual traits), rumination (involuntary and persistent self-centered thoughts, especially on one's body), and gender dysphoria (the distress a person feels due to the incongruence between gender identity and their sex assigned at birth) (Lindley & Galupo, 2020; Mueller et al., 2016; To et al., 2020).

The consequences of pervasive minority stress associated with stigmatization of transgender identities may obstruct pathways to well-being and self-acceptance. Experiences of direct discrimination, victimization, and rejection from others leads to stigma internalization and worsens self-esteem (the stable sense of personal worth or worthiness of transgender individuals) (Hendricks & Testa, 2012). A study suggested that internalized transphobia had a statistically significant negative relationship with self-esteem, while social connectedness had a statistically significantly positive impact on self-esteem (Austin & Goodman, 2017).

The findings described above highlight the need for transgender people to develop resilience strategies in order to cope with negative psychological outcomes. Resilience is defined here as a sustained competence under stress and positive adaptation despite adversity. It can be expressed in a plethora of strategies such as building community connections, fostering pride, searching for family acceptance, participating in activism, cultivating hope and self-acceptance, seeking gender social affirmation, and undergoing gender-affirming treatments and procedures (Matsuno & Israel, 2018; Testa et al., 2015; Watson & Veale, 2018). Some evidence supports the idea that resilience reduces the strength of the association between discrimination and psychological deterioration (Scandurra et al., 2017), while other studies do not support this hypothesis (Breslow et al., 2015). Also, lower resilience is associated with worse mental health indicators (Başar & Öz, 2016).

Having negative mental health indicators (e.g., depression) increases the likelihood of engaging in unprotected receptive anal sex and contributes to inconsistency in regular use of condoms, which can have transgender people susceptible to sexually transmitted infections, therefore undermining their general sexual health (Chakrapani et al., 2017; Nuttbrock et al., 2013). However, the literature on the sexuality of transgender people, especially TW, has mostly focused on HIV and other sexually transmitted infections, leaving aside other sexual factors (Bauer & Hammond, 2015). There is an insufficient number of studies toward the impact of mental health on other dimensions of sexuality. A multidimensional scale of sexual self-concept created by Snell, (1998) has been used in cisgender people (i.e., who are not transgender) samples to evaluate twenty psychological features of sexuality other than sexual risk behaviors. These dimensions include sexual anxiety (i.e., the tendency to feel tension, discomfort, and anxiety in relation to sexual activities), sexual fear (i.e., the fear of sexual intercourse), and sexual satisfaction (i.e., the tendency to feel sexually satisfied).

Some subscales of this measure were used in studies with transgender people samples. Dharma et al., (2019) surveyed 323 TW and transgender men (TM) and found a negative correlation between difficulty in negotiating condom use and sexual fear,

sexual anxiety, and transphobia experiences, while the correlation was positive with sexual satisfaction and self-esteem. The data suggest that the more a person is able to negotiate condom use in sex, the more sexually satisfied they tend to be, in addition to increasing the positive emotional experience derived from greater self-esteem. On the other hand, the lack of sexual assertiveness—often associated with a history of psychological suffering due to fear and expectations of rejection—contributes to negative sexual outcomes. These impairments include being at risk for sexually transmitted infections (due to condom-unprotected sex) and experiencing sexual tension, that is, the person may fail to enjoy the moment in a pleasant way precisely because of the sexual fear associated with the difficulty in negotiating condom use. While contributing to elucidate some factors that negatively or positively impact on sexual outcomes, the study does not directly assess the impacts of mental health on the studied sexual health aspects.

Another study applied the sexual satisfaction subscale to evaluate the sexual health of 173 TM with non-heterosexual orientation. It was shown that 39.2% had high sexual satisfaction, while 42.6% reported little sexual body image worries. Although not all participants in the sample reported using all parts of their bodies during sexual activities, the data on sexual activities, taken together, suggest a diversity of practices, including receptive genital sex, a practice that in many contexts can be challenging due to the discomfort and suffering associated with sexual body image worries. The factors associated with this diversity of practices and the presence of sexual body image worries were not assessed. Still, it is possible to consider that certain aspects of mental health (e.g., lower level of depression or greater resilience) may be related to sexual health. This highlights the importance of including psychological variables in sexual health research protocols, so that relationships such as those contemplated in the previous paragraph can be assessed (Bauer et al., 2013).

Studies over the years have suggested that gender-affirming procedures are associated with better psychological functioning (White Hughto & Reisner, 2016), improved sexual function experience (Wierckx et al., 2011), lower levels of suffering (Tomita et al., 2019), and slighter body dissatisfaction (Davis & Colton Meier, 2014). One study found that TM have a more positive body image than TW. In addition to dissatisfaction with their genitals, other areas of discomfort for TW included posture, face, and hair, while TM were more uncomfortable with their hips and chest (van de Grift et al., 2016). The results suggest that incongruence in physical appearance can hinder psychological adjustment, in addition to having important implications for sexual experience in general.

However, most of these studies are conducted in gender identity clinics, not covering community samples, which often do not have access to or even do not wish to perform gender-affirmation procedures. The literature has also emphasized the psychological impacts of sexual function among people who have undergone gender-affirmation medical procedures. There are gaps in the research on the psychological features of sexual experience such as sexual fear and sexual anxiety (whether among people who underwent these procedures or not), and how they relate to negative mental health indicators. This knowledge is especially limited in the Brazilian reality.

Considering this gap, the main objective of this study is to investigate whether depression, self-esteem, and resilience (mental health indicators) are associated with sexual fear, sexual anxiety, sexual dissatisfaction, and sexual body image worries (psychological features of sexuality) in transgender individuals. The specific objectives are (1) to investigate possible differences between TM and TW regarding mental health indicators and psychological features of sexuality; (2) to verify intercorrelations between mental health indicators and psychological features of sexuality for TM and TW; and (3) to investigate whether the scores in mental health indicators are associated with the psychological features of sexuality in a series of multivariate linear regression models.

There are two main hypotheses. The first is that depression, which, according to previous evidence, is significantly impacted by experiences of prejudice, is related to the increase in psychological features of sexuality (more sexual fear, more sexual anxiety, more sexual dissatisfaction, and more sexual body image worries). The second is that mental health indicators with a potential protective factor (resilience and self-esteem) are positively associated with psychological features of sexuality.

Method

The Trans Health Research Project is a hospital and web-based cross-sectional survey, based on input from the medical and transgender communities whose main purpose was assessing the healthcare needs and access barriers of transgender residents in two Brazilian states. It is an evidence-informed, policy-making initiative built with input from medical and trans communities.

The survey was adapted from TransPULSE project (Bauer et al., 2009), one of the first large-scale studies to address the healthcare needs and access barriers for transgender individuals. For this study, a group of health practitioners who work with gender and sexual minorities healthcare adapted and translated some parts of TransPULSE protocol to Brazilian Portuguese, which was assessed and checked by members of the transgender community before its application. The methods are described in detail in another study derived from this research (Costa et al., 2018).

Participants

The data were collected using convenience sampling in Rio Grande do Sul and São Paulo, two states that were pioneers in

providing specialized services to transgender people since the implementation of the first Brazilian health policies toward this population in 1998. Both states have gender identity programs that provide gender-affirming surgery and hormone therapy at public university hospitals fully funded by the government.

Since the Brazilian National Health System provides georeferenced care, patients seeking gender-affirming medical interventions must undergo these procedures in the states in which they live. Participants from the two programs were approached before and after individual and group meetings they need to attend to and then invited to voluntarily answer to an electronic version of the survey. The questionnaire was also available online via Facebook announcement targeting transgender people during two time periods: July–October 2014 and January–March 2015. Participants have not received neither payment incentive nor any direct benefit for joining the research.

Gender identity was assessed using the two-question method. Persons were considered eligible for participation if they reported a gender different from that assigned to them at birth. A total of 701 volunteers answered the survey. A sample loss has occurred due to the large size of the whole protocol, with many questions left incomplete. For this reason, this study only considered those participants who responded to all the variables here contemplated (e.g., sexual fear, sexual anxiety). A final sample of 462 participants was obtained after excluding missing questions.

Based on their self-reported gender identity, participants were re-categorized as TW, TM, or gender diverse people. TW were those who were assigned male at birth, but identified as women, TW or *travestis*. *Travesti* is a culturally specific gender identity term in the Brazilian context. *Travestis* are transgender people who were also assigned male at birth but adopt a female gender expression, although they typically do not undergo neovaginoplasty. Their gender identity varies; most of them identify themselves as women, some as men, and others simply say they are *travestis*. TM were those who were assigned female at birth but identify themselves as men or TM. Finally, gender diverse persons were those who identified with a gender identity outside the binaries (male–female), such as queer, non-binary, a-gender etc. Of the total participants, 68.8% identified as TW, and 31.2% as TM.

The average age was $M = 27.02$ (SD = 8.83), varying between 18 and 65 years. About 72.9% of the participants declared themselves to be of white color/race/ethnicity, 64.7% completed high school, 73.5% declared to be single, and 68.2% of the participants came from São Paulo. More sociodemographic data can be found in Table 1.

Measures

Multidimensional Sexual Self-Concept Questionnaire (MSSCQ). MSSCQ is an objective self-reporting instrument whose goal is to measure 20 psychological aspects of human sexuality (Snell, 1998). In this study, three scales were used, all of them measured on a Likert scale ranging from 1 (never) to 5 (always). The first assesses sexual anxiety, with 3 items with the following statements: "I feel anxious when I think about my sex life"; "Thinking about my sex life makes me uncomfortable"; and "I worry about my sex life." The second examines sexual fear, with 4 items with the following statements: "I am afraid of becoming sexually involved with another person"; "I am afraid of having sexual relations"; "I am afraid of being involved in sexual activity"; and "I am not afraid of engaging in sexual activities." The third concerns sexual (dis)satisfaction (which was inverted), with 5 items with the following statements: "I feel sexually fulfilled"; "My sex life is gratifying to me"; "My sex life is satisfactory, if compared with other people's"; "I am satisfied with my sex life"; and "I am happy with the way my sexual needs are being met." The scale has good internal consistency (Cronbach's $\alpha = 0.87$).

Sexual Body Image Worries (SBIW). SBIW is a 7-item scale developed to assess concerns about sexual body image among transgender people (Dharma et al., 2019) measured on a Likert scale ranging from 1 (never) to 5 (always). Each participant completed the following statement: "When I think about having sex, I worry…," whose alternatives were: "About my physical safety"; "About feeling ashamed of my body"; "About other people thinking my body is not attractive"; "About how very few people would want to have sex with me"; "About how when I am naked, they will not see me as my gender"; "About people only wanting to have sex with me because I am trans"; and "About not being able to have sex the way I want to, until I have surgery." Answers

Table 1 Sociodemographic characterization

Characteristics	Statistical distribution		
	Groups	*N*	%
Gender identity	Transgender women	318	68.8
	Transgender men	144	31.2
State	Rio Grande do Sul	147	31.8
	São Paulo	315	68.2
Race/ethnicity	Black	28	6.1
	White	337	72.9
	Brown (mixed-race)	85	18.4
	Indigenous	2	0.4
	Asian	10	2.2
Level of education	No formal education	8	1.7
	Complete elemental school	47	10.2
	Complete high school	299	64.7
	University graduate	83	18.0
	Postgraduate studies	25	5.4
Marital status	Single	339	73.5
	Stable union	72	15.6
	Married	41	8.9
	Divorced	8	1.7
	Widowed	1	0.2

were measured on a Likert scale ranging from 1 (Never) to 5 (Always). General score was obtained from the sum of all items. The scale has good internal consistency (Cronbach's α = 0.79).

Rosenberg Self-Esteem Scale (RSES). RSES is an instrument created to assess self-esteem. It was created by Rosenberg (1989) and adapted to Brazilian Portuguese by Avanci et al. (2007). The scale consists of 10 items varying on a Likert scale from 1 (Never) to 5 (Always), which, for scoring purposes, were added together to form a general score. Examples of items include "I can do things as well as most people"; "I have a positive attitude towards myself"; and "On the whole, I am satisfied with myself." The scale has good internal consistency (Cronbach's $\alpha = 0.88$).

Center for Epidemiologic Studies Depression Scale (CES-D). CES-D was used to assess depressive symptoms (Radloff, 1977). The scale was adapted to the Brazilian context by Silveira e Jorge (1998). It consists of 20 items, measured on a Likert scale ranging from 1 (Rarely) to 4 (Almost all the time). Items include statements such as "I didn't feel like eating, I had little appetite"; "I felt that people didn't like me"; and "I was depressed." The scale has good internal consistency (Cronbach's $\alpha = 0.92$).

14-Item Resilience Scale (RS-14). The 14-Item Resilience Scale (RS-14) (Wagnild, 2010) was used to assess resilience. It was adapted to the Brazilian context by Damásio et al., (2011). The scale consists of 14 items, measured on a Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). Items include statements such as "I believe in myself" and "People can count on me." The scale has good internal consistency (Cronbach's $\alpha = 0.83$).

Analysis Plan

Initially, the data distribution pattern was inspected. As there was only a slight asymmetry (asymmetry and kurtosis values close to zero), parametric statistical analyses were conducted. *T*-tests were conducted to investigate possible differences between TM and TW in terms of averages in sexual fear, sexual anxiety, sexual dissatisfaction, sexual body image worries, self-esteem, resilience, and depression. Subsequently, Pearson's correlations were performed between all continuous variables in the study. This procedure was done to screen for potential predictors in selecting the variables for the multivariable models. Those that were significantly associated with the psychological features of sexuality in previous analyses were tested as independent variables in a series of multivariate linear regression models for each of the psychological features of sexuality. The models were considered adequate because there was no violation of assumptions (Durbin-Watson, normality of residuals, multicollinearity, among others).

Results

Comparisons between groups indicated that TW had higher average self-esteem ($A_{TW} = 19.18$, $DP = 5.83$, $A_{TM} = 15.89$, $SD = 6.00$; $t = 4.78$, $p < 0.001$; $d = 0.56$, *95% CI* = −0.07, 1.18) and resilience ($A_{TW} = 5.55$, $SD = 1.05$, $A_{TM} = 5.14$, $SD = 1.15$; $t = 3.26$, $p < 0.001$; $d = 0.38$, *95% CI* = 0.27, 0.49), while TM had higher scores for depression ($A_{TW} = 22.13$, $SD = 14.00$, $A_{TM} = 25.66$, $SD = 13.85$; $t = -2.25$, $p < 0.001$; $d = -0.25$, *95% CI* = −1.71, 1.20). Table 2 shows the differences between TM and TW regarding psychological features of sexuality. The largest effect sizes regarding the differences between the averages of the groups were observed for self-esteem, $d = 0.56$.

Table 3 shows the Pearson correlation matrix for TW and TM separately. Self-esteem and resilience were positively associated with sexual fear, sexual anxiety, sexual dissatisfaction, and sexual body image worries, in both groups, while the relationship with depression was inverse with these psychological features of sexuality. In the TW group, sexual fear had the highest magnitude correlation with depression ($r = 0.27$), while sexual anxiety had an inverse and moderate correlation with self-esteem ($r = -0.42$). As for sexual dissatisfaction and sexual body image worries, the correlations were weak with self-esteem, resilience, and depression, ranging from $r = -0.20$ to $r = 0.36$. In the TM group, sexual fear and sexual dissatisfaction correlated weakly with self-esteem, resilience, and depression, ranging from $r = 0.25$ to $r = -0.33$. Correlations were moderate and inverse for sexual anxiety and sexual body image worries in relation to self-esteem ($r = -0.42$ and $r = -0.43$).

Based on previous analyses, linear regression models for the sexual variables were tested with the following set of independent variables: self-esteem, resilience, and depression. Specifically, the dependent variables were sexual fear, sexual anxiety, sexual dissatisfaction, and a score composed of the variables "sexual

Table 2 Differences between transgender women and transgender men in the study variables

Measures	Transgender women		Transgender men					
	M	*DP (n)*	*M*	*DP (n)*	*t*	*p*	*D*	*95% IC*
Sexual fear	2.64	1.14 (283)	2.71	1.20 (136)	−0.59	.558	−0.06	[−0,50, 0.38]
Sexual anxiety	2.98	0.87 (307)	2.93	0.95 (143)	0.53	.595	0.06	[−0.03, 0.14]
Sexual dissatisfaction	3.07	1.19 (286)	2.88	1.26 (135)	1.55	.122	0.16	[−0.42, 0.74]
Sexual body image worries	3.36	1.06 (307)	3.31	1.01 (143)	0.47	.636	0.05	[−0.05, 0.14]

All measures range from 1 (never) to 5 (always)

Table 3 Pearson correlation matrix ($N = 306$)

Transgender men Transgender women	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Sexual fear	1	0.69**	0.32**	0.32**	−0.19	−0.28**	−0.32**
(2) Sexual anxiety	0.71**	1	0.81**	0.42**	−0.27**	−0.42**	−0.24**
(3) Sexual dissatisfaction	0.27**	0.81**	1	0.39**	−0.25 (*)	−033**	−0.32**
(4) Sexual body image worries	0.36**	0.42**	0.39**	1	−0.42	−0.43**	−0.16
(5) Self-esteem	−0.24**	−0.42**	−0.33**	−0.31**	−0.36 (*)	1	0.73**
(6) Resilience	−0.16**	−0.24**	−0.32**	−0.20**	−0.15	0.62**	1
(7) Depression	0.27**	0.31**	0.33**	0.36**	−0.18	−0.49**	−0.48**

*$p < 0.05$ **$p < 0.01$

dissatisfaction" and "sexual anxiety" due to the high correlation (r = > 0.80) between them and sexual body image worries.

The results described in detail in Table 4 indicate that higher levels of depression were associated with sexual fear ($\beta = 0.17$), while higher depression ($\beta = 0.22$) and lower self-esteem ($\beta = -0.24$) were associated with sexual anxiety. In addition, higher levels of depression ($\beta = 0.16$) and lower levels of resilience ($\beta = -0.16$) were associated with sexual dissatisfaction. Similarly, depression ($\beta = 0.17$) and resilience ($\beta = -0.15$) were associated with the score composed of sexual dissatisfaction + sexual anxiety. Finally, higher levels of depression ($\beta = 0.30$) and resilience ($\beta = 0.14$), and lower levels of self-esteem ($\beta = -0.28$), were associated with more sexual body image worries.

Discussion

The first objective of this study was to investigate possible differences between TM and TW regarding mental health indicators and psychological features of sexuality. TW had greater self-esteem and resilience scores, while TM had greater depression scores. Studies show an association between discriminatory experiences and negative mental health indicators, such as suicidal ideation and suicide attempts (Dickey et al., 2015; Reisner et al., 2016). In the Brazilian context, TM may be more susceptible to depression due to social invisibility (when compared to TW) and barriers in healthcare access (Costa et al., 2018). Greater resilience and self-esteem can be developed by TW as a way of handling the high rates of prejudice to which they are exposed, since they are often easily identified as transgender in comparison to TM, thus easily becoming a target to transphobic violence (Transgender Europe, 2020).

The second objective was to verify intercorrelations between mental health indicators and psychological features of sexuality for TM and TW. In both groups, self-esteem and resilience were inversely associated with sexual fear, sexual anxiety, sexual dissatisfaction, and sexual body image worries, while depression was positively associated with psychological features of sexuality, which confirms our first hypothesis that mental health indicators with potential protective factor (self-esteem and resilience) reduce negative psychological features of sexuality. In contrast, depression, which usually leads to psychological impairments, contributed to increasing negative psychological features of sexuality. This may be another indicator that the better mental health indicators an individual has, the higher their psychological features of sexuality tend to be, thus contributing to fill a gap in the literature.

The third objective was to investigate whether the scores on depression, self-esteem, and resilience are associated with psychological features of sexuality in a series of multivariate linear regression models. Higher levels of depression were associated with sexual fear, while greater depression and lower self-esteem were associated with sexual anxiety, which demonstrates that lower mood can be related to problems in sexual interaction, a sensitive point for many transgender individuals, which had been suggested by the literature before (Benotsch et al., 2016). Higher levels of depression and lower levels of resilience were associated with sexual dissatisfaction, while depression and resilience were associated with the score composed of sexual dissatisfaction + sexual anxiety, again demonstrating the damage that negative mental health indicators can have on sexual subjective experiences. Higher levels of depression and resilience, and lower levels of self-esteem, are associated with greater sexual body image worries, a result that is consistent with studies that assessed body-related sexual stressors in transgender individuals (Dharma et al., 2019; Staples et al., 2020). Data have shown that both TM and TW may have different sexual concerns, such as difficulty in initiating and seeking sexual relations and difficulty in reaching orgasms, leading to psychological distress (Kerckhof et al., 2019).

Concerning the second hypothesis, the study demonstrated that depression, resilience, and self-esteem are associated with negative psychological features of sexuality, such as sexual anxiety, sexual fear, and sexual dissatisfaction. The differences between TM and TW were not significant, which contributes to a more general understanding of how the experience of psychological suffering affects the sexual subjective experiences of transgender individuals regardless of gender, although there is previous evidence of differences in the sexuality of TM and TW,

Table 4 Multiple linear regression models for sexual variables

Sexual fear ($n=337$)						Sexual anxiety ($n=337$)					Sexual dissatisfaction ($n=324$)				
Variables	β	*95% IC*	β	*t*	*p*	β	*95% IC*	β	*t*	*p*	β	*95% IC*	β	*t*	*p*
Constant	12.07	[8.22, 15.79]		6.24	.001	3.19	[2.49, 3.89]		8.98	.001	20.78	[15.77, 25.79]		8.15	.000
Self-esteem	−0.11	[−0.23, 0.02]	−0.14	−1.70	.090	−0.31	[−0.05, −0.01]	−0.22	−3.00	**.003**	−0.09	[−0.24, 0.06]	−0.09	−1.14	.254
Resilience	−0.12	[−0.78, 0.54]	−0.03	−0.36	.722	−0.00	[−0.11, 0.12]	−0.00	0.03	.974	−0.86	[−1.69, −0.04]	−0.16	−2.05	**.041**
Depression	0.06	[0.01, 0.11]	0.17	2.43	**.016**	0.02	[0.01, 0.02]	0.24	3.68	**.001**	0.07	[0.09, 0.13]	0.16	−2.28	**.023**
$R^2_{adj}=0.08$						$R^2_{adj}=0.15$					$R^2_{adj}=0.12$				

SA and SD ($n=353$)						Sexual body image worries ($n=337$)				
Variables	β	*95% IC*	β	*t*	*p*	β	*95% IC*	β	*t*	*p*
Constant	24.13	[18.54, 29.71]		8.50	.001	2.94	[2.17, 3.71]		7.53	.001
Self-esteem	−0.11	[−0.28, 0.06]	−0.09	−1.24	.217	−0.04	[−0.07, −0.02]	−0.28	−3.97	**.001**
Resilience	−0.94	[−1.86, −0.02]	−0.15	−2.01	**.045**	0.13	[0.08, 0.26]	0.14	2.09	**.001**
Depression	0.08	[0.02, 0.15]	0.17	2.50	**.013**	0.02	[0.01, 0.03]	0.30	4.77	**.038**
$R^2_{adj}=0.12$						$R^2_{adj}=0.17$				

Bold values indicate $p<.05$

SA and SD = composite score consisting of the sum of sexual anxiety and sexual dissatisfaction

both before and after undergoing gender-affirmation medical procedures (Garcia et al., 2014; Klein & Gorzalka, 2009; Lobato et al., 2006; van de Grift et al., 2019).

The literature has consistently demonstrated how transgender individuals' mental health are jeopardized due to the chronic exposure to stigma and discrimination, which are associated to negative psychological outcomes such as depression, suicidal ideation, stress, lower self-esteem, and increased body rumination (Austin & Goodman, 2017; McLemore, 2018; Scandurra et al., 2017; Testa et al., 2017; Velez et al., 2016). Our results underline the importance of developing interventions at the structural level and public policies to mitigate the effects of minority stress on transgender individuals' psychological outcomes and, consequently, on their sexual experiences. Psychologists and other clinicians should receive multicultural training in a gender-affirming framework. They should also be aware of the effects that depression and low self-esteem have on outcomes such as sexual fear and sexual anxiety, thus seeking to provide evidence-based strategies to increase resilience and mitigate the negative consequences that negative mental health indicators can have on transgender individuals' sexuality, therefore positively impacting their quality of life.

Our study is useful because it elucidates the effects of mental health indicators—commonly associated with experiences of exposure to violence and prejudice, as indicated in the literature—on the psychological features of sexuality among transgender individuals, thus offering insight for clinical interventions concerning those variables. However, some important limitations should be mentioned. The cross-sectional design prevents predictors from being established more accurately. The sample size does not allow unrestricted generalizations about the transgender population. For the same reason, we did not perform multivariate regressions, neither have considered genders as a factor or the splitting between genders because the TM sample was not sufficient for the assumptions. Non-binary people were not included due to the little sample size, which means that the study does not consider the broader gender diversity spectrum. One main consideration to be highlighted is that we have addressed psychological dimensions of sexuality, but sexual activity itself has not been evaluated due to limitations of the main project from which this study is derived. Also, analyses aiming to intersect structural factors such as race, class, and religion were not included in our study.

Future studies should focus on developing longitudinal designs, with larger and more diverse samples. One point of particular interest should be the impact of the gender social transition and/or medical transition status on the relationship between mental health and sexuality related outcomes. We suggest that clinical interventions should be developed and tested to address the psychological features of sexuality described in our study, hence contributing to the greater well-being of this population.

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Data Availability Data will not be made available because it contains confidential patients' information.

Declarations

Conflict of interest The authors declare that there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by the institutional review board and Human Ethics Committee of the Hospital de Clínicas de Porto Alegre (HCPA) and Universidade Federal do Rio Grande do Sul (UFRGS) as well as by the Universidade de São Paulo (USP) and its institutional review board on June 6th, 2013 (Ethical approval number: 14221513.4.0000.5334).

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

Austin, A., & Goodman, R. (2017). The impact of social connectedness and internalized transphobic stigma on self-esteem among transgender and gender non-conforming adults. *Journal of Homosexuality, 64*(6), 825–841. https://doi.org/10.1080/00918369.2016.1236587

Avanci, J. Q., Assis, S. G., Santos, N. C. D., & Oliveira, R. V. (2007). Cross-cultural adaptation of self-esteem scale for adolescents. *Psicologia: Reflexão e Crítica*, *20*(3), 397–405. https://doi.org/10.1590/S0102-79722007000300007

Başar, K., & Öz, G. (2016). Resilience in individuals with gender dysphoria: Association with perceived social support and discrimination. *Turkish Journal of Psychiatry*, *27*(4). https://doi.org/10.5080/u17071

Bauer, G. R., & Hammond, R. (2015). Toward a broader conceptualization of trans women's sexual health. *Canadian Journal of Human Sexuality, 24*(1), 1–11. https://doi.org/10.3138/cjhs.24.1-co1

Bauer, G. R., Hammond, R., Travers, R., Kaay, M., Hohenadel, K. M., & Boyce, M. (2009). "I don't think this is theoretical; This is our lives": How erasure impacts healthcare for transgender people. *Journal of the Association of Nurses in AIDS Care*, *20*(5), 348–361. https://doi.org/10.1016/j.jana.2009.07.004

Bauer, G. R., Redman, N., Bradley, K., & Scheim, A. I. (2013). Sexual health of trans men who are gay, bisexual, or who have sex with men: Results from Ontario, Canada. *International Journal of Transgenderism, 14*(2), 66–74. https://doi.org/10.1080/15532739.2013.791650

Benotsch, E. G., Zimmerman, R. S., Cathers, L., Heck, T., McNulty, S., Pierce, J., Perrin, P. B., & Snipes, D. J. (2016). Use of the internet to meet sexual partners, sexual risk behavior, and mental health in

transgender adults. *Archives of Sexual Behavior, 45*(3), 597–605. https://doi.org/10.1007/s10508-014-0432-x

Breslow, A. S., Brewster, M. E., Velez, B. L., Wong, S., Geiger, E., & Soderstrom, B. (2015). Resilience and collective action: Exploring buffers against minority stress for transgender individuals. *Psychology of Sexual Orientation and Gender Diversity, 2*(3), 253–265. https://doi.org/10.1037/sgd0000117

Brooks, V. R. (1981). *Minority stress and lesbian women*. Lexington Books.

Chakrapani, V., Newman, P. A., Shunmugam, M., Logie, C. H., & Samuel, M. (2017). Syndemics of depression, alcohol use, and victimisation, and their association with HIV-related sexual risk among men who have sex with men and transgender women in India. *Global Public Health, 12*(2), 250–265. https://doi.org/10.1080/17441692.2015.1091024

Chinazzo, Í. R., Lobato, M. I. R., Nardi, H. C., Koller, S. H., Saadeh, A., & Costa, A. B. (2021). Impacto do estresse de minoria em sintomas depressivos, ideação suicida e tentativa de suicídio em pessoas trans. *Ciência & Saúde Coletiva, 26*(3), 5045–5056. https://doi.org/10.1590/1413-812320212611.3.28532019

Costa, A. B., Brum, G. M., Zoltowski, A. P. C., Dutra-Thomé, L., Lobato, M. I. R., Nardi, H. C., & Koller, S. H. (2020). Experiences of discrimination and inclusion of Brazilian transgender people in the labor market. *Revista Psicologia Organizações e Trabalho, 20*(2), 1040–1046. https://doi.org/10.17652/rpot/2020.2.18204

Costa, A. B., da Rosa Filho, H. T., Pase, P. F., Fontanari, A. M. V., Catelan, R. F., Mueller, A., Cardoso, D., Soll, B., Schwarz, K., Schneider, M. A., & Gagliotti, D. A. M. (2018). Healthcare needs of and access barriers for Brazilian transgender and gender diverse people. *Journal of Immigrant and Minority Health, 20*(1), 115–123. https://doi.org/10.1007/s10903-016-0527-7

Costa, A. B., Fontanari, A. M. V., Jacinto, M. M., da Silva, D. C., Lorencetti, E. K., da Rosa Filho, H. T., Mueller, A., de Garcia, C. G., Nardi, H. C., Koller, S. H., & Lobato, M. I. R. (2015). Population-based HIV prevalence and associated factors in male-to-female transsexuals from Southern Brazil. *Archives of Sexual Behavior, 44*(2), 521–524. https://doi.org/10.1007/s10508-014-0386-z

Damásio, B. F., Borsa, J. C., & da Silva, J. P. (2011). 14-Item resilience scale (RS-14): Psychometric properties of the Brazilian version. *Journal of Nursing Measurement, 19*, 131–145. https://doi.org/10.1891/1061-3749.19.3.131

Davis, S. A., & Colton Meier, S. (2014). Effects of testosterone treatment and chest reconstruction surgery on mental health and sexuality in female-to-male transgender people. *International Journal of Sexual Health, 26*(2), 113–128. https://doi.org/10.1080/19317611.2013.833152

Dharma, C., Scheim, A. I., & Bauer, G. R. (2019). Exploratory factor analysis of two sexual health scales for transgender people: Trans-specific condom/barrier negotiation self-efficacy (T-barrier) and trans-specific sexual body image worries (T-worries). *Archives of Sexual Behavior, 48*(5), 1563–1572. https://doi.org/10.1007/s10508-018-1383-4

Dickey, L. M., Reisner, S. L., & Juntunen, C. L. (2015). Non-suicidal self-injury in a large online sample of transgender adults. *Professional Psychology: Research and Practice, 46*(1), 3–11. https://doi.org/10.1037/a0038803

Garcia Ferreira, A. C., Esteves Coelho, L., Jalil, E. M., Luz, P. M., Friedman, R. K., Guimarães, M. R. C., Moreira, R. C., Eksterman, L. F., Cardoso, S. W., Castro, C. V., Derrico, M., & Grinsztejn, B. (2019). Transcendendo: A cohort study of HIV-infected and uninfected transgender women in Rio de Janeiro, Brazil. *Transgender Health, 4*(1), 107–117. https://doi.org/10.1089/trgh.2018.0063

Garcia, M. M., Christopher, N. A., De Luca, F., Spilotros, M., & Ralph, D. J. (2014). Overall satisfaction, sexual function, and the durability of neophallus dimensions following staged female to male genital gender confirming surgery: The Institute of Urology, London U.K. experience. *Translational Andrology and Urology, 3*(2), 156–62. https://doi.org/10.3978/j.issn.2223-4683.2014.04.10

Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the minority stress model. *Professional Psychology: Research and Practice, 43*(5), 460–467. https://doi.org/10.1037/a0029597

Hidalgo, M. A., Petras, H., Chen, D., & Chodzen, G. (2019). The Gender Minority Stress and Resilience measure: Psychometric validity of an adolescent extension. *Clinical Practice in Pediatric Psychology, 7*(3), 278–290. https://doi.org/10.1037/cpp0000297

Kerckhof, M. E., Kreukels, B. P., Nieder, T. O., Becker-Hébly, I., van de Grift, T. C., Staphorsius, A. S., Köhler, A., Heylens, G., & Elaut, E. (2019). Prevalence of sexual dysfunctions in transgender persons: Results from the ENIGI follow-up study. *Journal of Sexual Medicine, 16*(12), 2018–2029. https://doi.org/10.1016/j.jsxm.2019.09.003

Klein, C., & Gorzalka, B. B. (2009). Continuing medical education: Sexual functioning in transsexuals following hormone therapy and genital surgery: A review. *Journal of Sexual Medicine, 6*(11), 2922–2939. https://doi.org/10.1111/j.1743-6109.2009.01370.x

Lindley, L., & Galupo, M. P. (2020). Gender dysphoria and minority stress: Support for inclusion of gender dysphoria as a proximal stressor. *Psychology of Sexual Orientation and Gender Diversity, 7*(3), 265–275. https://doi.org/10.1037/sgd0000439

Liu, R. T., Sheehan, A. E., Walsh, R. F., Sanzari, C. M., Cheek, S. M., & Hernandez, E. M. (2019). Prevalence and correlates of non-suicidal self-injury among lesbian, gay, bisexual, and transgender individuals: A systematic review and meta-analysis. *Clinical Psychology Review, 74*, 101783. https://doi.org/10.1016/j.cpr.2019.101783

Lobato, M. I. I., Koff, W. J., Manenti, C., da Fonseca Seger, D., Salvador, J., Fortes, M. D. G. B., Petry, A. R., Silveira, E., & Henriques, A. A. (2006). Follow-up of sex reassignment surgery in transsexuals: A Brazilian cohort. *Archives of Sexual Behavior, 35*(6), 711–715. https://doi.org/10.1007/s10508-006-9074-y

Matsuno, E., & Israel, T. (2018). Psychological interventions promoting resilience among transgender individuals: Transgender resilience intervention model (TRIM). *The Counseling Psychologist, 46*(5), 632–655. https://doi.org/10.1177/0011000018787261

McLemore, K. A. (2018). A minority stress perspective on transgender individuals' experiences with misgendering. *Stigma and Health, 3*(1), 53–64. https://doi.org/10.1037/sah0000070

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin, 129*(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior, 36*(1), 38–56. https://doi.org/10.2307/2137286

Mueller, A., Quadros, C., Schwarz, K., Brandelli Costa, A., Vaitses Fontanari, A. M., Machado Borba Soll, B., Cardoso da Silva, D., Abel Schneider, M., de Moura Silveira, É., Kauer-Sant'Anna, M., & Rodrigues Lobato, M. I. (2016). Rumination as a marker of psychological improvement in transsexual women postoperative. *Transgender Health, 1*(1), 274–278. https://doi.org/10.1089/trgh.2016.0029

Nuttbrock, L., Bockting, W., Rosenblum, A., Hwahng, S., Mason, M., Macri, M., & Becker, J. (2013). Gender abuse, depressive symptoms, and HIV and other sexually transmitted infections among male-to-female transgender persons: A three-year prospective study. *American Journal of Public Health, 103*(2), 300–307. https://doi.org/10.2105/ajph.2011.300568

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401. https://doi.org/10.1177/014662167700100306

Reisner, S. L., White Hughto, J. M., Gamarel, K. E., Keuroghlian, A. S., Mizock, L., & Pachankis, J. E. (2016). Discriminatory experiences associated with posttraumatic stress disorder symptoms among transgender adults. *Journal of Counseling Psychology, 63*(5), 509–519. https://doi.org/10.1037/cou0000143

Rosenberg, M. (1989). *Society and the adolescent self-image*. Wesleyan University Press.

Scandurra, C., Amodeo, A. L., Valerio, P., Bochicchio, V., & Frost, D. M. (2017). Minority stress, resilience, and mental health: A study of Italian transgender people. *Journal of Social Issues, 73*(3), 563–585. https://doi.org/10.1111/josi.12232

Silveira, D. X., & Jorge, M. R. (1998). Propriedades psicométricas da escala de Rastreamento Populacional para Depressão CES-D em populações clínicas e não-clínicas de adolescentes e adultos jovens. *Revista De Psiquiatria Clínica, 25*(5), 251–261.

Snell, W. E. (1998). The sexual self-disclosure scale. In C. M. Davis, W. L. Yarber, R. Bauserman, G. Schreer, & S. L. Davis (Eds.), *Handbook of sexuality-related measures* (pp. 528–531). Sage.

Staples, J. M., Bird, E. R., Gregg, J. J., & George, W. (2020). Improving the gender-affirmation process for transgender and gender-nonconforming individuals: Associations among time since transition began, body satisfaction, and sexual distress. *Journal of Sex Research, 57*, 375–383. https://doi.org/10.1080/00224499.2019.1617829

Testa, R. J., Habarth, J., Peta, J., Balsam, K., & Bockting, W. (2015). Development of the gender minority stress and resilience measure. *Psychology of Sexual Orientation and Gender Diversity, 2*(1), 65–77. https://doi.org/10.1037/sgd0000081

Testa, R. J., Michaels, M. S., Bliss, W., Rogers, M. L., Balsam, K. F., & Joiner, T. (2017). Suicidal ideation in transgender people: Gender minority stress and interpersonal theory factors. *Journal of Abnormal Psychology, 126*(1), 125–136. https://doi.org/10.1037/abn0000234

To, M., Zhang, Q., Bradlyn, A., Getahun, D., Giammattei, S., Nash, R., Owen-Smith, A. A., Roblin, D., Silverberg, M. J., Tangpricha, V., Vupputuri, S., & Goodman, M. (2020). Visual conformity with affirmed gender or "passing": Its distribution and association with depression and anxiety in a cohort of transgender people. *Journal of Sexual Medicine, 17*(10), 2084–2092. https://doi.org/10.1016/j.jsxm.2020.07.019

Tomita, K. K., Testa, R. J., & Balsam, K. F. (2019). Gender-affirming medical interventions and mental health in transgender adults. *Psychology of Sexual Orientation and Gender Diversity, 6*, 182–193. https://doi.org/10.1037/sgd0000316

TGEU Europe. (2020). *Trans murder monitoring project*. TGEU.

van de Grift, T. C., Cohen-Kettenis, P. T., Steensma, T. D., De Cuypere, G., Richter-Appelt, H., Haraldsen, I. R., Dikmans, R. E., Cerwenka, S. C., & Kreukels, B. P. (2016). Body satisfaction and physical appearance in gender dysphoria. *Archives of Sexual Behavior, 45*(3), 575–585. https://doi.org/10.1007/s10508-015-0614-1

van de Grift, T. C., Pigot, G. L. S., Kreukels, B. P. C., Bouman, M. B., & Mullender, M. G. (2019). Transmen's experienced sexuality and genital gender-affirming surgery: Findings from a clinical follow-up study. *Journal of Sex & Marital Therapy, 45*, 201–205. https://doi.org/10.1080/0092623x.2018.1500405

Velez, B. L., Breslow, A. S., Brewster, M. E., Cox, R., Jr., & Foster, A. B. (2016). Building a pantheoretical model of dehumanization with transgender men: Integrating objectification and minority stress theories. *Journal of Counseling Psychology, 63*(5), 497–508. https://doi.org/10.1037/cou0000136

Wagnild, G. M. (2010). *The resilience scale user's guide for the US English version of the resilience scale and the 14-Item resilience scale (RS-14)*. The Resilience Center.

Watson, R. J., & Veale, J. (2018). Transgender youth are strong: Resilience among gender expansive youth worldwide. *International Journal of Transgenderism, 19*(2), 115–118. https://doi.org/10.1080/15532739.2018.1474832

White Hughto, J. M., & Reisner, S. L. (2016). A systematic review of the effects of hormone therapy on psychological functioning and quality of life in transgender individuals. *Transgender Health, 1*(1), 21–31. https://doi.org/10.1089/trgh.2015.0008

Wierckx, K., Van Caenegem, E., Elaut, E., Dedecker, D., Van de Peer, F., Toye, K., Weyers, S., Hoebeke, P., Monstrey, S., De Cuypere, G., & T'Sjoen, G. (2011). Quality of life and sexual health after sex reassignment surgery in transsexual men. *The Journal of Sexual Medicine, 8*(12), 3379–3388. https://doi.org/10.1111/j.1743-6109.2011.02348.x