



Evaluation of Sexual Function of Transgender Individuals

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Abstract

Purpose The current study sought to evaluate the sexual function of transgender men and women and to identify associated factors.

Methods Trans individuals who were outpatients at our gender incongruence (GI) center for follow-up of gender-affirming hormone therapy with age ranging 27 to 50 years were invited to participate in this cross-sectional study. Clinical data were collected from the medical records. Two scales, the Female Sexual Function Index (FSFI) and the Male Sexual Function Index (MSFI), were administered to all females ($n = 50$) and all males ($n = 58$). Each participant also responded to a semi-structured questionnaire that assessed feelings regarding being transgender and satisfaction with sexual life.

Results Relative to trans women, trans men had a higher total FSFI score, and higher scores in the FSFI domains of arousal, lubrication, orgasm, and satisfaction (all $p < 0.01$), and in the total MSFI score, and higher scores in the MSFI domains of arousal, erection, orgasm, and satisfaction (all $p < 0.01$). A separate semi-structured evaluation indicated that more than half of the trans men and almost half of the trans women were satisfied or very satisfied with their sexual life.

Conclusions The total scores from the FSFI and MSFI indicated a high risk of sexual dysfunction in trans men and especially, in trans women. However, the semi-structured evaluation showed that more than half of the trans men and almost half of the trans women were satisfied with their sexual life.

Keywords Sexual function · Transgender · Transsexual · Gender incongruence · Gender-affirming hormone therapy

Introduction

Transgender (trans) is a broad term that includes individuals with different gender identity. Gender incongruence (GI) refers to a person whose gender identity is different from the sex assigned at birth [1]. People with GI often use

gender-affirming hormone therapy (GAHT) and sometimes undergo surgical procedures so that their bodies match their genders. GAHT consists of a prescription of estrogen with or without anti-androgens for trans women, and T for trans men [2, 3]. GAHT is a valuable treatment for trans people, but some undesired effects may occur, such as interference with sexual function.

The sexual function of trans people may be altered by hormonal and surgical treatments. For example, high doses of estrogen or an anti-androgen reduces the T level in trans women, but these interventions can lead to reduced sexual desire [4]. On the other hand, interventions that reduce the level of estrogen and increase the level of T in trans men may increase sexual desire [5].

A recent study evaluated the prevalence of sexual dysfunction (SDF) in the trans population and demonstrated that 26% of trans women and 32% of trans men had difficulties in sexual drive, and that orgasm disorder was present in 29% of trans women and 15% of trans men. This previous study thus emphasized the importance of gender-affirming surgery (GAS) to improve the sexual life of these individuals,

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All the participants attended the Gender Incongruence Outpatient Clinic of Ribeirão Preto Medical School (FMRP), University of São Paulo (USP) from 15 February 2020 to 15 February 2022. This study was approved by the Research Ethics Committee of the Clinical Hospital of Ribeirão Preto Medical School (RPMS) of the University of São Paulo (USP), CAAE 29969419.8.0000.5440

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because these surgeries (ovariohysterectomy, mastectomy, metoidioplasty, phalloplasty, breast augmentation, vaginoplasty, and other surgery) lead to better sexual arousal, less sexual aversion, and greater sexual desire [6]. We conducted a review of the sexual function of trans women and observed that several studies used various instruments to assess sexual function that were not specifically designed for this purpose [7]. The limitations of these studies stem from the use of nonvalidated instruments, including the Maudsley Marital Questionnaire-S, WHOQOL-100, only semi-structured questionnaires. Additionally, four studies evaluated sexual function using the Female Sexual Function Index (FSFI), as well as inappropriate terminology—specifically, “libido” to denote “sexual desire” and “sexual discomfort” to denote “sexual pain” [7]. These terminologies are inadequate as they do not correspond to the phases of sexual response [8].

For trans men, one study used a semi-structured questionnaire [9]; another study employed the Sexual Desire Inventory questionnaire (SDI) [10] and a semi-structured interview [5]. The FSFI is the most widely used questionnaire worldwide to assess the risk of SDF. As demonstrated in the review conducted by our research group, the FSFI was utilized in four studies involving trans women, and its use in assessing the risk of SDF in trans men would be beneficial to underscore the importance of further studies employing validated questionnaires for this population. Although not validated for the transgender population, this questionnaire includes the phases of sexual response (desire, arousal, orgasm, satisfaction). Therefore, additional studies are required to assess sexual function in this demographic. The current study sought to evaluate the sexual function of transgender men and women and to identify associated factors.

Materials and Methods

This cross-sectional study initially considered trans individuals (237 trans women and 187 trans men) using the criteria for GI according to the International Classification of Diseases 11. All of the participants attended the Gender Incongruence Outpatient Clinic from 15 February 2020 to 15 February 2022. We collected all data during the COVID-19 pandemic. During this period, there was a 70.63% reduction in elective medical care services at our institution, and online recruitment was prohibited. Therefore, all participants were recruited when seeking medical care on site. The required sample size was computed based on an assumed SDF rate of 67% [11], an acceptable absolute error of 13%, and a confidence level of 95%, resulting in a determination of 51 trans men and 51 trans women. A total of 110 participants aged between 27 and 51 years, attending clinical appointments, were invited to participate, with 108 consenting to participate.

This study was approved by the Research Ethics Committee.

One researcher performed the initial contact with potential participants in the waiting room. Each potential participant was informed individually of the objective of this study, and was asked to sign an informed consent form if he or she wanted to participate. Then, the participant was taken into a private room to answer the questionnaires. The researcher remained in the room and provided clarification about questions if necessary.

All included individuals were only trans men or trans women, according to ICD-11 criteria for GI, at least 18 years old, receiving follow-up for at least 6 months of GAHT, and had a mixed profile in terms of GAS, where 16% of men, and 29% of women had undergone GAS. Individuals were excluded if they had incomplete medical records, no measurement of the basal concentration of estradiol and testosterone, or fewer than two measurements of the serum levels of testosterone and estradiol, in order to ensure that hormone levels are in accordance with the appropriate concentrations for the gender of the transgender person, necessary to promote the desired bodily changes. The levels of metabolic markers and hormones of all participants were measured, and all of them responded to questionnaires that evaluated sexual function and the risk for anxiety and depression.

The SF of all participants was assessed using the Male Sexual Function Index (MSFI) and the Female Sexual Function Index (FSFI), which had been previously validated for the Portuguese language. The FSFI was developed as a 19-item self-reporting questionnaire for evaluation of the SF of cis-gender women. This instrument contains 19 questions and evaluates six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain [12]. The MSFI is a 16-item self-reporting questionnaire that was created by modifying the FSFI for the evaluation of sexual function in cis-gender men. This instrument evaluates five domains based on the previous 30 days: desire, arousal, erection, orgasm, and satisfaction [13]. All questions are multiple choice, and each answer was scored from 0 to 5 points. The values are calculated with a mathematical equation to obtain the total score for sexual function that ranges from 2 to 36, and a total score below 26.55 predicts an increased risk for SDF [14]. Both questionnaires were answered for trans men and women. The researchers had this idea because there was not a validated questionnaire for transgender individuals.

The risks for anxiety and depression were assessed using the Hospital Anxiety and Depression (HAD) scale, which has 14 items, 7 for anxiety and 6 for depression. Each item had four possible answers (range: 0–3), and the total for each subscale ranged from 0 to 21. The cutoff for anxiety was 8, and the cutoff for depression was 9 [15].

Additionally, we (L.A.S.L and T.M.R.B.) developed a semi-structured questionnaire to allow participants to express their

perception regarding specific characteristics of sexuality using a Likert scale. Participants were asked six questions about sexual satisfaction [13], body appearance (as body satisfaction is related to mental health, which can affect sexuality) [16], phases of sexual response [17], and feeling discriminated (as may impact mental health) [18]. These questions were first administered to 10 participants to verify that the responses were understandable. Then, all participants responded to these questionnaires (FSFI, MSFI, HAD, semi-structured) in a private room for 20 to 30 min in the presence of a researcher (T.M.R.B.).

An exploratory analysis of the data was used to measure central position and dispersion. For the qualitative analysis, the results were summarized as absolute and relative frequencies. To verify the significance of an association between a qualitative measure and gender, the Chi-squared test was used. To determine if there was a significant effect of gender on quantitative variables, the nonparametric Wilcoxon test for independent samples was used. A logistic regression model was constructed to estimate the relationships of different variables with FSFI and MSFI scores, and the results were reported as odds ratios (ORs). The statistical analysis was performed using SAS version 9.4.

Results

One hundred and eight participants completed this study, 58 (53.70%) trans men and 50 (46.30%) trans women. Trans men and women were similar in most characteristics, but differed in the prevalence of comorbidities, BMI, duration of relationship, number of sexual partners, and frequency of sexual intercourse (Table 1).

Analysis of the FSFI scores showed that 32 men (55.2%) and 41 women (82.0%) had total FSFI scores of 26.55 or less (Table 2). Relative to women, men had significantly better total FSFI score and better FSFI scores in the domains of arousal, lubrication, orgasm, and satisfaction. Also relative to women, men had a significantly better total MSFI score and better MSFI scores in the domains of arousal, erection of clitoris, orgasm, and satisfaction.

Table 3 shows the results of the logistic regression model. According to the univariate analysis, the variables age, BMI, years of study, ethnicity, marital status, sexual orientation, GAS, satisfaction with GAHT, and feeling discriminated do not predispose to SDF. While being women, dissatisfaction with body appearance and being at risk for anxiety and depression are factors that are associated with SDF.

A multivariate analysis showed that being a trans woman (OR: 0.242, 95% CI: 0.095, 0.615) and having a score of risk for depression in the HADS (OR: 0.22, 95% CI: 0.055, 0.88) were significant risk factors for SDF (Table 4).

We reviewed the medical records of all participants and recorded the different blood parameters of trans men and

trans women at baseline, after 3 or 6 months of treatment, and after 12 months of treatment. In comparison with the baseline levels, the trans men had a 125.74% increase in testosterone, a 21.57% decrease in estradiol, a 9.8% decrease in HDL, a 27.45% increase in LDL, an 8.58% decrease in triglycerides, a 24.45% decrease in ALT, and a 31.51% increase in AST at 12 months. In comparison with the baseline levels, the trans women had a 86.95% decrease in testosterone, a 6.41% increase in estradiol, a 3.22% increase in HDL, a 17.11% decrease in LDL, a 275.59% increase in triglycerides, a 39.03% increase in ALT, and a 47.11% increase in AST.

The semi-structured analysis to assess sexual satisfaction showed that 14 trans men were very dissatisfied (23.72%), 3 were dissatisfied (5.08%), 11 were neither satisfied nor dissatisfied (18.64%), 14 were satisfied (23.72%), and 18 were very satisfied (30.50%). The analysis of the answers of trans women showed that 9 were very dissatisfied (18%), 6 were dissatisfied (12%), 15 were neither satisfied nor dissatisfied (30%), 14 were satisfied (28%), and 5 were very satisfied (10%). Regarding body image, 23 of trans men (33.9%) and 17 of trans women (34%) were satisfied with their body image.

Discussion

The current study sought to evaluate the sexual function of transgender men and women and to identify associated factors. Based on an FSFI score of 26.55 or less, our results demonstrated that 55% of trans men and 82% of trans women were at a risk for SDF. Moreover, our semi-structured analysis showed that 30% of women and 28.78% of men were dissatisfied or very dissatisfied with some aspects of their sexuality. It is important to note that the FSFI assesses the risk of SDF, whereas evaluating sexual satisfaction requires the use of a specifically validated scale. However, there is no validated scale for the transgender population for this purpose. Therefore, sexual dissatisfaction is relatively low in our study population compared with the risk of SDF. This discrepancy is also observed in other studies investigating SDF in cisgender women, where complaints even always represent dissatisfaction with sexual life [13, 19], and needs assessment by a validated instrument. Thus, the results of these different scales should be considered together when interpreting sexual satisfaction in our population.

Previous studies used the FSFI, MSFI, and other validated instruments to assess the sexual function of transgender people, even though these instruments were originally developed for cis-gender individuals [13]. Thus, the results of the FSFI may not reflect the actual sexual health of transgender individuals because it is difficult to develop validated instruments that assess the sexual function of this population. A

Table 1 Anthropometric, clinical, social, and behavioral characteristics of transgender participants (*N* = 108)

Variable	Trans men, <i>n</i> (%) or mean \pm SD	Trans women, <i>n</i> (%) or mean \pm SD	<i>p</i> value
Number	58 (53.70)	50 (46.30)	
BMI ≥ 24.9 kg/m ²	22 (55)	15 (39.47)	0.17
Ethnic group			
White	30 (61.22)	28 (56)	
Black	4 (8.16)	8 (16)	0.49
Brown	14 (28.57)	14 (28)	
Yellow	1 (2.04)	0 (0)	
Schooling			
< 12 years	13 (59.09)	23 (60.52)	0.87
≥ 12 years	9 (40.91)	15 (39.47)	
In a stable relationship	17 (37.78)	6 (22.22)	0.17
Use of contraception	10 (17.24)		
Use of the penis during sexual intercourse		11 (39.29)	
Comorbidities	17 (29.31)	29 (58)	0.0026
Adverse effects of CHT	15 (26.32)	13 (44.83)	0.08
Satisfaction with treatment	37 (90.24)	22 (84.62)	0.48
GAS	9 (15.52)	14 (28.57)	0.10
Heterosexual	51 (92.53)	41 (87.23)	0.29
Bisexual	1 (1.82)	4 (8.51)	
Homosexual	3 (5.45)	2 (4.26)	
Age, years	27.74 \pm 7.51	30.64 \pm 8.97	0.10
BMI	27.02 \pm 5.98	24.24 \pm 4.74	0.02
Duration of relationship, years	0.74 \pm 0.94	1.75 \pm 0.50	0.03
Age at menarche, years	12.78 \pm 2.02		
Age at sexarche, years	15.78 \pm 3.34	15.05 \pm 2.73	0.33
Number of sexual partners	4.96 \pm 2.97	12.72 ^a \pm 11.52	0.001
Frequency of sexual intercourse, per week	1.74 \pm 1.45	2.73 \pm 1.85	0.04
Duration of CHT, years	2.67 \pm 1.26	4.55 \pm 4.99	0.31
CHT	Intramuscular testosterone (cypionate)	Oral estradiol valerate associated with cyproterone	

BMI body mass index, *SD* standard deviation, *CHT* cross-sexual hormonal therapy (injectable testosterone 200 mg/2 ml every 15 or 21 days for trans men and oral estradiol valerate 2 to 6 mg/day with or without cyproterone 25 mg/day for trans women), *GAS* gender-affirming surgery

^aOne participant (an outlier) was excluded

study of trans women from the Netherlands showed that 44.4% had FSFI scores of 26.55 or less [20]. There are many challenges in assessing the sexual function and sexual responses of transgender populations, such as the lack of instruments validated for evaluation of SF regardless of the GAS. A recent study by our research team evaluated the use of nonvalidated questionnaires to assess the sexual function of a trans population and reported some discrepant results [18]. In our previous study, specifically, we found weak evidence suggesting that gender affirmation surgery might improve sexual function, primarily because of the challenges in accurately capturing sexual function within this population. In addition to the use of a nonvalidated instrument,

the use of inappropriate terms to assess the stages of sexual response, such as “libido” instead of “sexual desire” and “sexual discomfort” instead of “pain during intercourse”, contributed to the discrepant results [7]. These terminologies are inadequate as they do not correspond to the phases of sexual response (desire, arousal, orgasm, and satisfaction) [8, 21]. Moreover, some domains in the FSFI and MSFI, such as penile erection in trans men and vaginal lubrication in trans women, are not applicable to trans individuals.

A recent study described the newly developed Operated Male-to-Female Sexual Function Index (OMtFSFI) to assess the sexual function of trans women after surgery [22], and there is a similar index for trans men, the Trans-Masculine

Table 2 Sexual function of trans men and trans women based on the Female Sexual Function Index (FSFI) and the Male Sexual Function Index (MSFI; $N=108$)

Domain	Men ($n=58$), average \pm SD/ n (%)	Women ($n=50$), average \pm SD	p value
MSFI			
Total score	21.25 \pm 7.86	15.15 \pm 8.79	0.0002
Desire	4.28 \pm 1.31	3.86 \pm 1.41	0.12
Arousal	4.40 \pm 1.78	2.78 \pm 2.10	< 0.0001
Erection	3.69 \pm 2.43	2.61 \pm 2.24	0.01
Orgasm	4.48 \pm 1.89	2.99 \pm 2.27	0.005
Satisfaction	4.30 \pm 2.18	3.33 \pm 3.73	0.004
FSFI			
Total score	23.30 \pm 8.81	17.24 \pm 9.96	0.0023
Desire	4.74 \pm 5.95	3.72 \pm 1.41	0.25
Arousal	4.36 \pm 1.72	2.88 \pm 2.08	< 0.0001
Lubrication	4.58 \pm 1.94	2.74 \pm 2.21	< 0.0001
Orgasm	4.37 \pm 2.00	3.21 \pm 2.31	0.0051
Satisfaction	4.49 \pm 2.06	2.99 \pm 2.22	< 0.0001
Pain			0.15
FSFI total score ≤ 26.55	32 (55.2)	41 (82.0)	0.0002

The values in the last column that are in bold indicate data that showed significant differences ($p < 0.005$)

SD standard deviation

Sexual Function Index (TMSFI) [21]. Most of the participants in our study did not receive GAS, and this is why we used a semi-structured questionnaire in association with the FSFI and MSFI, both of which had been previously validated for the Portuguese language. Also, the TMSFI is not validated for the Portuguese language; therefore, we could not use this instrument for the evaluation of sexual function of transgender men.

Our FSFI findings demonstrated a high risk of sexual dysfunction in trans women (82%), while there is no established cutoff for the total score of MSFI. However, our semi-structured evaluation indicated that 60% of the

trans women were neutral or dissatisfied with their sexual function. Previous research reported that the prevalence of hypoactive sexual desire in trans women was 33.9%, whereas in cis-women the prevalence was 23.3% [4]. It is known that the high doses of estradiol used in GAHT, especially when given with an anti-androgen (cyproterone or spironolactone), leads to a marked reduction in endogenous testosterone [19], and this may be responsible for the reduced sexual desire. In agreement, a previous study showed that a reduction of testosterone in males and females had adverse effects on the sexual response [4].

Table 3 Crude odds ratio estimates followed by the respective 95% confidence intervals (CI) of the exploratory variables in relation to the Female Sexual Function Index outcome (score ≤ 26.55)

Variable	Odds ratio	95% CI
Gender	0.252	0.104–0.612
Age	0.995	0.948–1.044
BMI	3.881	0.562–3.881
Educational level	2.014	0.178–2.014
Ethnicity	0.921	0.38–2.232
Marital status	0.471	0.158–1.399
Sexual orientation (heterosexual vs homosexual)	1.378	0.218–8.688
Sexual orientation (homosexual vs bisexual)	2.667	0.1584–45.141
GAS	0.635	0.226–1.784
Satisfaction with GAHT	4.47	0.516–38.727
Satisfaction with body appearance	2.540	1.114–8.702
Discrimination	0.733	0.324–1.658
Anxiety	0.318	0.139–0.73
Depression	0.182	0.051–0.654

BMI body mass index, GAS gender-affirming surgery, GAHT gender-affirming hormone therapy

Table 4 Adjusted odds ratio estimates followed by the respective 95% confidence intervals (CI) of the exploratory variables in relation to the Female Sexual Function Index outcome (score ≤ 26.55)

Variable	Odds ratio	95% CI
Gender	0.242	0.095–0.615
Satisfaction with body appearance	1.796	0.094–0.614
Anxiety	0.51	0.202–1.289
Depression	0.22	0.055–0.88

The effects of the reduced testosterone level and poor sexual function of trans women receiving GAHT can adversely affect their quality of life, and there are currently no therapeutic strategies to address this problem. However, there have been no drug therapy strategies developed to address this issue thus far. Owing to the multifaceted nature of sexual function, a thorough evaluation encompassing biological, psychological, and social factors is advised to identify potential predisposing, precipitating, and perpetuating factors contributing to SDF within this population [19]. Although testosterone suppression reduces spontaneous and responsive sexual desire during the first 3 months of GAHT, there is evidence that sexual desire improves after 3 years of GAHT, as shown in a prospective cohort study with 401 European transgender women [23]. In this study the sexual desire was assessed by the Sexual Desire Inventory (SDI) and the total and dyadic scores remained stable over the remainder of the 1st year. The SDI is a self-administered instrument, not validated for trans people, that evaluates sexual desire and not all phases of sexual response [24]. The authors stated that even though this questionnaire is not validated for transgender people, other studies [10] had used it previously for the same objective. After this period the scores increased again between 1 and 2 years of GAHT. Finally, after 36 months, total and dyadic SDI scores were higher than baseline scores [23]. This suggests that the acquisition of a gender-affirming phenotype might help to improve the sexual responses of trans women. However, our recent review showed that trans women may still have high rates of SDF after GAS [7], suggesting that hormones might also play an important role. “Add-back” therapy with testosterone is a possible strategy to mitigate the sexual problems caused by the decreased testosterone concentrations in trans women with hypoactive sexual desire. A previous study reported that “add-back” therapy improved the sexual desire of trans women in a manner similar to its effects in cis-women, with no serious adverse effects [25].

It is noteworthy that our trans men had better total scores than our trans women in the FSFI and the MSFI. Nonetheless, a significant portion of the trans men (55.87%) in our sample had total FSFI scores of 26.55 or less, but there is no cutoff for MSFI. This result points to the importance of testosterone level to the sexual response. A study of cis-women

reported that a hysterectomy, with or without oophorectomy, and intramuscular testosterone-enanthate led to increased free testosterone concentration and improved sexual function, with increased sexual drive, desire, arousal, and frequency of sexual intercourse [26]. In addition, an adequate level of testosterone (300 µg/day) can promote sexual function in females [2]. In trans men, testosterone use is associated with increased spontaneous and responsive sexual desire during the first 3 months of use [27]. However, another study of trans men reported that sexual desire and response to erotic cues and stimulation returned to the baseline level after 3 years of testosterone use [27]. Nonetheless, a significant portion of the trans men (55.87%) in our sample had total FSFI scores of 26.55 or lower on the total FSFI, which could indicate risk for SDF. The impact of elevated androgens on SDF and the underlying mechanisms in trans men remains unclear. Other factors influencing sexual function in this population, such as psychological factors, gender dysphoria, and prolonged waiting times for GAS, may also play a role.

Our finding of a discrepancy in the proportion of trans men with a risk for SDF in the FSFI (55.87%) and the proportion who said that they were dissatisfied or very dissatisfied with their sex lives (28.78%) reinforces the multidimensional characteristics of the sexual response in these individuals. It also highlights the urgent need for prospective and controlled studies that develop appropriate measures containing biopsychosocial to better clarify the actual sexual status of trans men.

A recent study [26] proposed a model of the factors that impact the sexual function of cis-gender men and women after having the first child. The biological factors that highlight their findings were age and hormone changes, such as the reduction of progesterone, estrogen, and androgen levels in cis-gender women [26]. Apart from the differences in population compared to our study, the literature still lacks studies that address the biopsychosocial aspects of sexual function in trans people. As previously discussed in this article, transgender individuals can also have a similar change in these hormone levels. Also, in relation to the psychological factors, Hajimirzaie et al. showed the impact that anxiety, depression, fear, and body image may have on the sexual function of cis-gender people [26]. Therefore, to better address the biopsychosocial aspects of SF of trans people it is crucial to develop an instrument containing questions related to body image, fear, discrimination, and symptoms of anxiety and depression. The OMtFSFI is limited to evaluating genital self-image, desire, arousal, lubrication, orgasm, satisfaction, and sexual pain [22]. Also, the TMSFI addresses specifically the domains of sexual desire, sexual arousal, lubrication, orgasm, and sexual pain [21].

Our multivariate analysis showed that symptoms of depression and being a woman were significantly associated with SDF. Dissatisfaction with body image was associated with SDF in the univariate analysis but not in the multivariate

analysis. This is in line with a previous multicenter study that showed that body image was unrelated to the effect of gender-affirming treatment on sexual desire in trans individuals [28]. A 2018 literature review showed that poor mental health, symptoms of anxiety and depression, poor quality of interpersonal relationships, low levels of endogenous hormones, a history of sexual abuse, a negative attitude toward sex, dissatisfaction with body image, and abuse of psychoactive substances increased the risk of SDF in cis-gender women [29]. Difficulty with self-image is a continuing problem for transgender individuals in Brazil, because they must wait a very long time to receive GAS from the public health service. Gender-affirming procedures (GAHT and GAS) are necessary to improve the body image and satisfaction with appearance in transgender populations [28].

Our multivariate logistic regression results showed that having depressive symptoms and being a trans woman were associated with SDF. It is well established that psychological disorders can contribute to various types of SDF, such as arousal dysfunction, difficulty reaching orgasm, and sexual dissatisfaction [29].

We emphasize the necessity for a validated instrument designed to assess sexual functioning among Brazilian transgender individuals, integrating biopsychosocial aspects. Such an instrument could offer insights into the genuine effects of GAHT on their sexual functioning. For future studies, we propose the validation of a questionnaire tailored to the transgender population, encompassing psychosocial dimensions of sexual functioning. This approach will enable a comprehensive understanding of sexual functioning throughout gender-affirming care, diverging from current literature practices.

In essence, the implications of the measures utilized in our study indicate that questionnaires developed for cisgender individuals are unsuitable for evaluating the sexual function of transgender individuals. It is important to highlight that our study was conducted during the COVID-19 pandemic, and this fact may have affected our results. A systematic review with meta-analysis demonstrated that this period of time changed sexual activity and sexual behavior among cis-gender people. The main result of this meta-analysis was the reduction in sexual activity, the increase in masturbation, and search for sex toys, and finally the decline in sexual function, in both male and female cis people [30–32]. The domains of sexual function specifically affected in cis gender women were arousal, orgasm, satisfaction, and pain [33]. One study highlights that COVID-19 had a negative impact on all aspects of health within the LGBTQIA+ community, with reduced employment opportunities affecting financial stability [34], which could interfere with both mental and sexual health.

This paper has several limitations. Our sample did not include elderly individuals; thus, we recognize that our findings may not be generalizable to the entire population.

Furthermore, we were unable to stratify the sample by treatment groups for analyzing the results. We employed the FSFI, which is not a validated instrument for assessing sexual function in transgender individuals. This questionnaire may not comprehensively capture the biopsychosocial aspects of sexual function within the transgender community. Moreover, the accessibility and utilization of GAHT may differ from that in other countries.

Conclusion

Our FSFI and MSFI results indicated a high risk of SDF in trans women, and that more than half of trans men were also at risk for SDF. There is no cutoff for the MSFI. For future studies on validating instruments to assess the sexual function of transgender men and women, we suggest including questions on body image, psychological well-being, and social well-being, as these aspects potentially impact individuals' sexual function. This discrepancy suggests the need for more specific validated questionnaires that more adequately assess the sexual function of trans individuals. It also demonstrates that validated questionnaires that were developed for cis-gender people are inappropriate for assessing sexual function of trans-gender people. That said, our findings suggest a need for further investigation of the impact of depression on sexual function among trans women.

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Data Availability Each time the data is requested, the corresponding author will send it via email.

Declarations

Conflicts of Interest None.

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