

Evaluation of the Sexual and Urinary Functions of Transsexual Women

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Abstract— *The number of transsexual people who choose transsexualizing procedures has grown in recent years. These processes are associated with several changes in their anatomy, as well as sexual and urinary function. This study proposed to identify the sexual and urinary functions of transsexual women. Two transsexual women who underwent sexual reassignment surgery participated in the study. We used the questionnaires: Female Genital Self Image Scale (FGSIS), Female Sexual Distress Scale (FSDS-R), Female Sexual Function Index (FSFI), Three Questions Incontinence Test (3IQ), Protection, Amount, Frequency, Adjustment, Bodyimage (PRAFAB). Excel software was used for data entry, preparation of tables and descriptive statistical analysis. One of the participants is neither satisfied nor comfortable with the appearance of her genitals and even feels ashamed. Satisfaction with sexual intercourse is impaired in both participants, who had a high score on the FSDS-R. As in the FSDS-R, the total score on the FSFI characterizes the participants as having a sexual dysfunction. The most compromised domain for both was satisfaction. Pain and arousal were scored more by one of the participants. None of the participants, according to the 3IQ test, reported urine leakage, so it is not possible to apply PRAFAB. The sexual function of the transsexual women in this study was altered. There was no change in urinary function.*

Resumo— *O número de pessoas transexuais que optam pelos procedimentos transexualizadores cresceu nos últimos anos. Esses processos estão associados a diversas mudanças em sua anatomia, função sexual e miccional. Este estudo propôs identificar as funções sexuais e miccionais de mulheres transexuais. Participaram do estudo duas mulheres transexuais que se submeteram a cirurgia de redesignação sexual. Foram utilizados os questionários: Female Genital Self Image Scale (FGSIS), Escala de Desconforto Sexual Feminino (FSDS-R), Índice de função sexual feminina (FSFI), Teste de Três Perguntas sobre Incontinência (3IQ), Protection, Amount, Frequency, Adjustment, Bodyimage (PRAFAB). Foi utilizado o software Excel para entrada dos dados, confecção das tabelas e análise estatística descritiva. Uma das participantes não*

está satisfeita com a aparência de sua genitália, bem como não se sente confortável com a mesma, chegando a sentir vergonha. A satisfação com a relação sexual está prejudicada em ambas as participantes, que tiveram um escore alto no FSIS-R. Da mesma forma que no FSIS-R, o escore total no FSFI caracteriza as participantes com disfunção sexual. O domínio mais comprometido para ambas foi satisfação. A dor e a excitação foram mais pontuadas por uma das participantes. Nenhuma das duas participantes, de acordo com o teste de 3IQ, relatou perda urinária, por isso não possível aplicar o PRAFAB. A função sexual das mulheres transexuais deste estudo mostrou-se alterada. Não houve mudança na função urinária.

Descritores— Transexuais, Saúde Sexual, Genitália, Incontinência Urinária.

I. INTRODUCTION

Defined by Harry Benjamin in 1953 as an association between biological normality and the conviction of belonging to another gender, transsexuality is born from the resulting conflict between gender identity and attributed sex. Thus, transsexualizing procedures are ways to adequate the body image to the proposed gender, with the sex reassignment (SR) surgery being the final step of these procedures¹.

Within this population, one can have a condition called gender dysphoria (GD), which is distress or discomfort that can occur when biological sex and gender are not in the same spectrum. Individuals who identify as transgenders tend to be more vulnerable and have higher indices of discrimination, depression and suicide when compared to the population in general².

There is a consensus among health professionals that transsexual surgery and hormonal procedures have a positive impact on this dysphoria, although some people do not intend to undergo the surgical procedure to express their gender and identity role³. The number of people seeking SR surgery is gradually increasing⁴. There is a worldwide estimation that 1:30,000 adult trans women and 1:10,000 adult trans men seek the procedures annually. However, disorders related to sex reassignment, especially in trans women, are becoming more common⁵.

Considering the anatomical perspective, as the surgical procedure is extremely invasive on the structures that make up the pelvic floor region, a variety of dysfunctions are expected and one of the first to study the effects of the SR surgery on the urinary tract observed that the loss of urine occurred during the following period of up to three years after the surgery⁶.

Since the number of transsexual people choosing to undergo transsexualizing procedures has been increasing in recent years, studies assessing the integrity of the sexual and urinary functions across the transition become necessary. Thus, this study proposes to evaluate the sexual and urinary functions of transsexual women in Belém, Pará, Brazil.

II. METHODOLOGY

This is a cross-sectional observational study approved by Research Ethics Committee, Center of Biological and Health Sciences of the University of the State of Pará, with the report No. 3.366.922, conducted between June and July 2019.

Two transsexual women participated in the study:

P1: 48 years old, underwent the sex reassignment surgery 4 months before the study, single, making use of hormone therapy.

P2: 45 years old, underwent the sex reassignment surgery 10 years before the study, single, making use of hormone therapy.

The study was conducted in the Laboratory of Physiotherapy on Women's Health (LABFISM), University of the State of Pará. We used the following questionnaires for data collection: *Female Genital Self Image Scale* (FGSIS); *Female Sexual Distress Scale* (FSIS-R); *Female Sexual Function Index* (FSFI); *Three Questions Incontinence Test* (3IQ) and *Protection, Amount, Frequency, Adjustment, Bodyimage* (PRAFAB).

FGSIS was used to evaluate the perception of women about their genital organs. The questionnaire consists of seven questions and the answers follow the Likert Scale format (strongly agree, agree, disagree, strongly agree). The total score varies from 7 to 28 points, with higher values indicating a more positive genital self-image. FGSIS has been translated and validated for some western and eastern countries, is considered a reliable measurement and is being validated for Portuguese⁷.

FSIS-R evaluates sexual distress. It consists of 12 questions. The participants evaluated the frequency in which they had uncomfortable and distressing sexual feelings in the past 30 days on a five-point scale which, when summed up, resulted in a final score in which higher values indicate more sexual distress (cutoff point=15.36)⁷.

FSFI consists of 19 questions distributed into sex domains of sexual response: desire, arousal, lubrication, orgasm, satisfaction and pain/discomfort, and was used to evaluate sexual function. The score of each question varied

from 0 to 5. To obtain the domain's score, it is necessary to sum the corresponding questions of each and multiply by the correction factor (Table 1). By summing up the scores of the domains, we obtain the total score, which has the minimum value of 3 and the maximum value of 36, with

the highest values associated with a better sexual function. Thus, the cutoff point is defined to those that did not reach the total score of 26, with scores below or equal to this indicating sexual dysfunction⁸.

Table 1 - FSFI Domain scores.

Domain	Question	Score variation	Factor	Minimum score	Maximum score
Desire	1,2	1 – 5	0,6	1,2	6,0
Arousal	3, 4, 5, 6	0 – 5	0,3	0	6,0
Lubrication	7, 8, 9, 10	0 – 5	0,3	0	6,0
Orgasm	11, 12, 13	1 – 5	0,4	0	6,0
Satisfaction	14, 15, 16	0(or 1) - 5*	0,4	0,8	6,0
Pain	17, 18, 19	0 – 5	0,4	0	6,0
Total Score				2,0	36

3IQ is a simple, fast and non-invasive test with acceptable precision in the classification of urgency and effort incontinence and was used to distinguish the type of urinary incontinence (UI) present in the patient. It includes three questions and can be answered in up to 30 seconds⁹.

The data were analyzed by descriptive statistics. We used the software Excel for data input and table preparation.

III. RESULTS

Both participants underwent the reassignment procedure, one in 2000 and the other in 2018. One was 45 years old and the other 48. Both made use of hormone therapy.

Table 2 describes the results of FGSIS. We considered the answers strongly agree and agree as comfortable/satisfied and the answers strongly disagree and disagree as uncomfortable/dissatisfied. One of the participants is neither satisfied nor comfortable with the appearance of her genitalia, feeling even ashamed.

Table 2. Female Sexual Discomfort Scale - FSDS-R (n=14).

How often did you feel:	Never	Rarely	At the same time	Very	Always	total
	n(%)					
Bothered by your sex life?	3 (18,8)	4 (31,3)	6 (43,8)	1 (6,3)	0	14 (100)
Unhappy about the sexual part of your relationship?	4 (25)	4 (25)	7 (43,8)	1 (6,3)	0	14 (100)
Frustrated by your sexual problems?	3 (25)	8 (56,3)	1 (6,3)	1 (6,3)	1 (6,3)	14 (100)
Stressed out about sex?	7 (43,8)	5 (31,3)	3 (18,8)	1 (6,3)	0	14 (100)
Inferiorized because of your sexual problems?	5 (31,3)	4 (31,3)	4 (31,3)	0	1 (6,3)	14 (100)
Worried about sex?	3 (18,8)	4 (31,3)	4 (31,3)	1 (6,3)	2 (12,5)	14 (100)

Sexually inappropriate?	8 (50)	1 (6,3)	4 (25)	1 (6,3)	2 (12,5)	14 (100)
Sorry about your sexuality?	12 (87,5)	1 (6,3)	0	0	1 (6,3)	14 (100)
Embarrassed because of your sexual problems?	7 (43,8)	7 (43,8)	1 (6,3)	1 (6,3)	0	14 (100)
Dissatisfied with your sex life?	6 (43,8)	2 (12,5)	4 (31,3)	2 (12,5)	0	14 (100)
Anger at your sex life?	9 (56,3)	4 (25)	1 (6,3)	2 (12,5)	0	14 (100)
Low sexual desire?	4 (31,3)	5 (37,5)	3 (18,8)	1 (6,3)	1 (6,3)	14 (100)

The satisfaction with sexual intercourse is impaired in both participants, who had high scores in FSDS-R. Details of the answers given in this scale are described in Table 3.

Table 3. Female Sexual Function Index of participants (n=14).

Scores by domain	Domains						Total score
	Desire	Arousal	lubrication	orgasm	satisfaction	pain	
Maxim	6	5,7	6	6	6	6	35,7
Minim	1,2	0	0	0	0	0	1,2
Average	3,78	3,05	3,21	2,42	0,5	1,85	14,81

As with FSDS-R, the total score of FSFI characterizes the participants with sexual dysfunction. The most compromised domain for both was satisfaction. Pain and arousal had higher scores for one of the participants (Table 4).

Table 4: Test of 3 questions on urinary incontinence - 3IQ.

Questions	Answers	n ()
	yes	4 (25)
During the last 3 months have you lost urine (even in small amount)?	No	10 (75)
During the last 3 months, you have lost urine when:	When I was doing some physical effort	1(25)
	When there was an emergency	3 (75)
	Neither making effort nor with a sense of urgency	0 (0)
During the last 3 months you have lost urine mainly when:	When I was doing some physical effort	2 (50)
	When there was an emergency	2 (50)
	Neither making physical effort nor having a sense	0 (0)

of urgency

Almost equally, both in making effort and in the urgent

0 (0)

None of the participants, according to the 3IQ test, reported urine leakage, so that it was possible to apply PRAFAB.

IV. DISCUSSION

The search for the harmonization of body and mind and, consequently, one's welfare, makes some transsexual people choose the SR surgery, which results in functional complications in the new genital organ, such as the absence of vaginal lubrication and presence of hair in the vaginal canal, but also severe injuries, which may include prolapse or organ perforation¹⁰.

Changes in the anatomy and functioning of the external genitalia may interfere with the behavior of people, including sexual activities. This fact justifies studies to better understand the physical appearance of this region and self-perception, as well as investigations related to sexual attitudes and the genital area¹¹.

In this study, one of the participants was not completely satisfied with her genitalia. Krege et al.¹² studied 66 transsexual women and the results confirmed that the patients were satisfied with the surgical results, the external appearance of the genitalia and function of the vagina and clitoris.

Regarding sexual function, both participants were uncomfortable with their sexual life. It is supposed that the presence of sexual dysfunctions leads to this discomfort, as both had low scores in FSDS-R and presented sexual dysfunction according to FSFI.

Supporting these results, a study¹³ conducted with 518 transsexual people, of which 211 were trans men, showed that 54% of the men had sexual dysfunctions such as difficulty in achieving orgasm, pain during intercourse and decreased interest in sex. In the same study, 69% of the trans women had sexual problems such as pain during sex and decrease in sex drive¹³.

The two women in our study were categorized as having sexual dysfunction. We reinforce the hypothesis that the decrease in sex drive, pain during sexual intercourse, as well as the decrease in lubrication observed in this study may have an important connection with sexual discomfort, which leads to dissatisfaction and stress regarding one's sexuality.

The transgenitalization surgeries and hormone therapy lead to phenotypical changes in the gender of transgender men and women. These procedures have considerable effects on sex drive and sexual function¹⁴. In

general, a positive body image is associated with better sexual function and satisfaction¹⁵. This fact may be related to the sequels associated with the physical restrictions of the new genital organs or post-surgery pain¹⁶.

Despite not being observed in this study, urinary dysfunctions can be common in women who underwent SR. Up to 20% of transsexual women report urinary problems after the surgery. Among them, urgency and effort UI and mixed UI are the most reported¹⁷. Among the ones with urinary complaints, it is estimated that 32% evolve into urinary infections due to incontinence problems.

Reinforcing the results of this study, a similar work conducted between 2013 and 2015 with 4 reassigned transsexual women observed that, after answering a questionnaire about quality of life, 100% of the sample did not present urinary incontinence¹⁸.

The underlying cause of urinary symptoms after SR in transsexual women is not clear. A study¹⁹ postulated that these symptoms may be the result of several factors. Many of these patients have smaller prostates in comparison with the homologous in men because the prostate becomes atrophic after the prolonged use of exogenous estrogen. An atrophied prostate could theoretically increase the risk of symptoms of effort urinary incontinence as it allows the passage of a smaller amount of urine through the urethra during the increase of pressures of Valsalva.

Direct sphincter lesion and denervation can also contribute to incontinence symptoms. Although most techniques avoid this type of lesion, it is plausible that they could happen. There is also likely a component of the pelvic floor for these symptoms. During the procedure, the bulbospongiosus muscle is partially transected and spread laterally to allow the creation of a large enough space to make a neovagina of normal size and depth. The rupture of the muscles can lead to a dysfunction of the pelvic floor, which causes difficulty in emptying the bladder, sensation of incomplete emptying and other urinary symptoms. Physiotherapy for the pelvic floor can be useful in these clinical scenarios²⁰.

Thus, the factors involved in the integrated experience of the treatment of gender affirmation and how

sexuality is perceived are complex, and the support of sexuality and improvement of sexual function in trans patients is, therefore, multifaceted²⁰. The sexual and urinary functions of transsexual people must be more studied to better understand their specific needs and, therefore, provide adequate treatment.

As limitations of this study, we mention the reduced number of participants due to the low availability in the studied region and the difficulties to access this population, as well as the use of questionnaires translated/validated only for cisgender women, which makes us question whether they are adequate tools to evaluate the same functions in the transgender population.

The development and validation of questionnaires to determine the outcome measures reported by the patient to the trans community are the next important step to evaluate the transsexualizing process amply and satisfactorily. It is still necessary to conduct studies that evaluate the quality of life, the function of the pelvic floor muscles and the relationship of the transsexualizing process with genital and urinary dysfunctions.

V. CONCLUSION

The sexual function of the transsexual women of this study showed to be impaired. There was no change in urinary function.

REFERENCES

- [1] González-González D, Mahtani-Chugani V, Báez-Quintana D, Barbudo MFS. La transexualidad y El proceso de reasignación sexual desde la perspectiva de los varones transexuales: un enfoque cualitativo. *Rev Int Androl*. 2017;16(2):59-66. doi.org/10.1016/j.androl.2017.02.003.
- [2] Atkinson RS, Darren R. Gender dysphoria. *Aust Fam Physician*. 2015;44(11):792-796. <https://www.ncbi.nlm.nih.gov/pubmed/26590617>
- [3] Hess J, Henkel J, Bohr C, Rehme A, Panic L, Panic R, et al. Sexuality after Male-to-Female Gender Affirmation Surgery. *Biomed Res Int*. 2018;1-7. doi: 10.1155/2018/9037979.
- [4] Labanca T, Mañero I. Vulvar condylomatosis after sex reassignment surgery in a male-to-female transsexual: Complete response to imiquimod cream. *Gynecol Oncol Rep*. 2017;20:75-77. doi: 10.1016/j.gore.2017.03.010.
- [5] Hoebcke P, Selvaggi G, Ceulemans P, De Cuyper G, T'Sjoen G, Weyers S, et al. Impact of sex reassignment surgery on lower urinary tract function. *Eur Urol*. 2005;47(3):398-402. <https://www.ncbi.nlm.nih.gov/pubmed/15716207>
- [6] Unger CA. Hormonotherapy for transgender patients. *Transl Androl Urol*. 2016;5(6):877. doi: 10.21037/tau.2016.09.04
- [7] Derogatis LR, Rosen R, Leiblum S, Burnett A, Heiman J. The Female Sexual Distress Scale (FSDS): Initial validation of a standardized scale for assessment of sexually related personal distress in women. *J Sex Marital Ther*. 2002; 28(4): 317-330. doi.org/10.1080/00926230290001448
- [8] Hentschel H, Alberton DL, Capp E, Goldim, JR, Passos EP. (2007). Validação do Female Sexual Function Index (FSFI) para uso em língua portuguesa. *Revista HCPA*. Porto Alegre. 2007;27(1):10-14. <http://hdl.handle.net/10183/164528>
- [9] Brown JS, Bradley CS, Subak LL, Richter HE, Kraus SR, Brubaker L, et al. The sensitivity and specificity of a simple test to distinguish between urge and stress urinary incontinence. *Ann Intern Med*. 2006;144(10):715-723. doi.org/10.7326/0003-4819-144-10-200605160-00005
- [10] Ferreira MSC, Campos SR, Ferreira APM. Repercussões da redesignação sexual masculino para feminino e a atuação da fisioterapia. *e-Scientia*. 2018;11(2):8-16. <https://revistas.unibh.br/dcbas/article/view/2402/pdf>
- [11] Brandão PMC. Função sexual e autoimagem genital em mulheres praticantes de atividade física. Salvador. Dissertação. Escola Bahiana de Medicina e Saúde Pública. 2016. <http://www.repositorio.bahiana.edu.br/jspui/bitstream/bahiana/252/1/DISSERTA%20c3%87%20c3%83O%2023-03-2016%20gr%20a%20f%20f%20ica.pdf>
- [12] Krege, S., Bex, A., Lümmen, G., & Rübber, H. Male-to-female transsexualism: a technique, results and long-term follow-up in 66 patients. *BJU Int*. 2001;88(4), 396-402. doi.org/10.1046/j.1464-410x.2001.02323.x
- [13] Kerckhof ME, Kreukels BPC, Nieder TO, Becker-Héblly I, Van de Grift TC, Staphorsius AS, et al. Prevalence of Sexual Dysfunctions in Transgender Persons: Results from the ENIGI Follow-Up Study. *J Sex Med*. 2019;16(12):2018-2029. doi: 10.1016/j.jsxm.2019.09.003.
- [14] Bradford NJ, Rider NIC, Spencer KG. Hair removal and psychological well-being in transfeminine adults: Associations with gender dysphoria and gender euphoria. *J Dermatolog Treat*. 2019;1-27. doi: 10.1080/09546634.2019.1687823.
- [15] Holmberg M, Arver S, Dhejne C. Supporting sexuality and improving sexual function in transgender persons. *Nat Rev Urol*. 2019;16(2):121-139. doi: 10.1038/s41585-018-0108-8.
- [16] Pigot GLS, Sigurjónsson H, Ronkes B, Al-Tamimi M, van der Sluis WB. Surgical Experience and Outcomes of Implantation of the ZSI 100 FtM Malleable Penile Implant in Transgender Men After Phalloplasty. *J Sex Med*. 2020;17(1):152-158. doi: 10.1016/j.jsxm.2019.09.019
- [17] Scahrdein JN, Zhao LC, Nikolavsky D. Management of Vaginoplasty and Phalloplasty Complications. *Urol Clin North Am*. 2019;46(4):605-618. doi: 10.1016/j.ucl.2019.07.012.
- [18] Herrera JMS, et al. Calidad de vida, función Del tractourinario y salud sexual em cirugía de reasignación de

sexo hombre a mujer. *Urol Colomb*.2016;25(2):81-87.<https://doi.org/10.1016/j.uroco.2015.12.003>.

- [19] Kuhn A, Santi A, Birkhouser M. Vaginal prolapse, pelvic floor function, and related symptoms 16 years after sex reassignment surgery in transsexuals. *Fertil Steril*. 2011; 95(7): 2379 – 82.doi: 10.1016/j.fertnstert.2011.03.029 doi: 10.1016/j.fertnstert.2011.03.029.
- [20] Ferrando CA. Vaginoplasty complications. *Clin Plast Surg*. 2018;45(3):361-368.doi: 10.1016/j.cps.2018.03.007.