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Translation and preliminary evaluation of the Brazilian Portuguese version of the Transgender Voice Questionnaire for male-to-female transsexuals

Tradução e avaliação preliminar da versão em Português do Questionário de Autoavaliação Vocal para Transexuais de Homem para Mulher

ABSTRACT

Purpose: To contribute to the development of a Brazilian Portuguese language version of the vocal self-assessment questionnaire, Transsexual Voice Questionnaire: Male-to-Female (TVQ:MtF), and to evaluate the questionnaire for use in Brazil. **Methods:** The research was divided into two parts: (1) translation and adaptation of the questionnaire (TVQ:MtF) and demographic form and (2) preliminary study of the psychometric properties (internal consistency and test–retest reliability) of the adapted version of the questionnaire. For the translation and adaptation, the following steps were taken: translation, reconciliation, back-translation, harmonization, and pilot test. The TVQ:MtF questionnaire and the demographic form were applied to 13 male-to-female transsexuals, aged between 21 and 47 years. The participants agreed to answer the TVQ:MtF on two occasions (test and retest), with an optimal interval of 30 days. **Results:** Two psychometric properties were investigated: internal consistency and test–retest reliability. High levels of internal consistency (in both test (α=0.911) and retest (α=0.952) conditions) and reliability (with an average ICC=0.957 (95%CI 0.916–0.984)), were found. **Conclusion:** The TVQ:MtF is an appropriate instrument for vocal self-assessment of male-to-female transsexual patients, which can be recommended for clinical and research goals.

RESUMO

Objetivo: O propósito deste estudo é desenvolver a versão em língua portuguesa do questionário de autoavaliação vocal *TVQ:MtF* (*Transgender Voice Questionnaire for male to female Transsexuals*), bem como verificar a aplicabilidade do instrumento para uso no Brasil. **Métodos:** A pesquisa foi dividida em duas partes: (1) tradução e adaptação do questionário *TVQ:MtF* e da ficha demográfica; e (2) estudo preliminar das propriedades psicométricas (consistência interna e confiabilidade teste-reteste) da versão adaptada do questionário. Para a tradução e adaptação foram seguidos os seguintes estágios: tradução, conciliação, retrotradução, harmonização e teste piloto. O questionário *TVQ:MtF* e a ficha demográfica foram aplicados em 13 transexuais de homem para mulher, com idades entre 21 e 47 anos. As participantes concordaram em responder o *TVQ:MtF* em dois momentos (teste e reteste), cujo intervalo entre as aplicações idealizado foi de 30 dias. **Resultados:** Duas propriedades psicométricas foram investigadas: consistência interna e confiabilidade teste-reteste. Foram obtidos altos níveis de consistência interna no teste (α=0,911) bem como no reteste (α=0,952), com alta confiabilidade, CCI médio=0,957(IC95% 0,916–0,984). **Conclusão:** O *TVQ:MtF* é um instrumento indicado para autoavaliação vocal de pacientes transexuais de homem para mulher, sendo recomendado para fins clínicos e de pesquisa.

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INTRODUCTION

Transsexualism is a term introduced by the mid-20th-century[1] to describe a condition in which an individual is convinced that their psychological sex is opposed to the anatomical sex.

The transsexual patient has a strong desire to physically resemble the opposite sex and therefore be accepted by society as belonging to that sex[2]. They are classified in Male-to-Female (MTF) transsexual or trans-woman, in the case of gender dysphoria in a male individual, and Female-to-Male (FTM) transsexual or trans-man, in the case of an individual female.

Findings on the prevalence of transsexualism vary considerably between countries and periods[3,4]. There are usually more MTF than FTM transgender individuals, although a gradual change seems to be happening. In the late 1960s, the Male-to-Female/Female-to-Male ratio was 3.5 to 1, but this ratio has changed to 2 to 1.

Treating transgender clients is a long process that begins with a psychological and psychiatric evaluation in view of a diagnosis. This is followed by the so-called "diagnosis of reality" or "real-life test", testing the correctness of the diagnosis. It assesses whether the individual has, in fact, a strong desire to completely and permanently reassign their gender, and whether dysphoria decreases when he/she occupies the role of the opposite sex. At this stage, hormonal therapy also begins. Males receive estrogen and females receive testosterone to develop female and male sexual characteristics, respectively. According to the individual's evolution, the interdisciplinary team decides whether the reassignment surgery will be performed or not.

As voice is a notable factor in the perception of gender, interdisciplinary care of transsexual patients should include speech therapy, especially for MTF transsexuals. In FTM transsexuals, voice therapy is generally not considered, as the administration of male hormones tends to change the voice in the direction of the desired gender. The goals of voice therapy for MTF transsexuals are elevation of the voice's fundamental frequency and increase in frequency variation. However, other parameters must be included, such as balance of resonance and improvement of communication skills.

The Committee on Phoniatrics of European Laryngological Society recommends evaluating the following procedures pre- and post-therapy or vocal training: perceptual and auditory evaluation of voice, videolaryngostroboscopy, acoustic analysis, aerodynamics, and self-assessment[5], which includes the individual's perspective on their problem. There has been a trend of appreciation of the patient's perception about vocal functioning in the context of their lives. In fact, the patient's perception may differ from the clinical perception and from the results suggested by an instrumental or perceptual assessment.

Information about the patient's perception is usually collected through a self-assessment instrument. Some vocal self-assessment instruments have been validated and are widely used for clinical and research purposes, such as: *Qualidade de Vida em Voz* (QVV)[6], which is a translation of the Voice-Related Quality of Life; *Perfil de Participação em Atividades Vocais* (PPAV)[7], which is a translation of the Voice Activity and Participation Profile; and especially the *Índice de Desvantagem Vocal* (IDV)[8], which is a translation of the Voice Handicap Instrument. Patients' perceptions about their own voice are certainly important in the care of transsexuals, since it is a significant factor in the transition process.

However, the scales available today may not be appropriate for the population under study, as suggested by the results of the study by T'Sjoen et al.[9]. In this study, the IDV was applied to 28 MTF transsexuals (mean age of 42 years) and 20 FTM transsexuals (mean age of 33 years). In contrast to the general clinical experience and the patient's history records, neither group of transsexuals (MTF and FTM) had scores that indicated disadvantages related to voice.

More recently, in 2006, a specific self-assessment scale for use with transsexual patients was developed by Dacakis et al.[10] based on the Voice Handicap Index (VHI): the Transgender Self-Assessment Questionnaire (TSEQ). Just as the VHI, the TSEQ also has 30 items. However, several questions of the original VHI questionnaire were omitted or modified in view of their relevance to the transsexual population.

The review was based on the authors' extensive clinical experience with transsexual patients, and with the collaboration of two transsexual individuals. In addition, the review led to the development of two versions, one for MTF transsexuals and one for FTM transsexuals, entitled Transsexual Voice Questionnaire: Male-to-Female (TVQ:MtF) and Transsexual Voice Questionnaire: Female-to-Male (TVQ:FtM), respectively. A study by Dacakis et al.[10] on the psychometric properties of the TVQ:MtF with 29 Australian and 6 Canadian participants showed high internal consistency and excellent reliability.

To date, the TVQ:MtF and the TVQ:FtM, assessment tools for vocal perception of transsexual patients, are only available in English. Knowing that there is a greater number of MTF transsexuals and that problems related to voice occur most frequently in this group, the purpose of this study is to contribute to the development of a Portuguese language version of the TVQ:MtF and the demographic form that goes with the questionnaire, and to preliminarily evaluate the use of the questionnaire in Brazil.

The Brazilian Portuguese version of the TVQ:MtF and the demographic form are available on the website of the author, Shelagh Davies (http://www.shelaghdavies.com/).

METHODS

Materials

The TVQ:MtF features 30 closed questions in which the interviewee responds to items related to the social impacts of their voice. The TVQ: Demographic Form, which goes with the TVQ:MtF, consists of 14 questions between open and closed questions that address social, demographic, and

cultural aspects, such as type of work, level of education, surgeries, information on the use of hormones, and others.

The TVQ:MtF was answered on the basis of personal experience living as a woman, identified by a classification scale, where 1=never or rarely; 2=sometimes; 3=often; and 4=usually/always; that is, each participant could present a minimum score of 30 points and a maximum of 120 points.

PROCEDURES

This study consists of two parts:
1. translation and adaptation of the TVQ:MtF questionnaire and demographic form; and
2. preliminary study of the psychometric properties (internal consistency and test–retest reliability) of the adapted version of the questionnaire.

The project was approved by the Research Ethics Committee of *Universidade Veiga de Almeida* under Protocol n. 263/10 and of *Hospital Universitário Pedro Ernesto* under Protocol n. 3001-2011 CEP/HUPE.

Translation and adaptation

For the translation and adaptation of the TVQ:MtF questionnaire and the TVQ Demographics Form – MTF, the following stages were followed, based on Wild et al.[11] and on the Scientific Advisory Committee of Medical Trust (SAC)[12]: translation, reconciliation, back-translation, harmonization, and pilot testing.

Stage I: translation

The questionnaire was translated (English-Brazilian Portuguese) independently by two bilingual speech language pathologists with experience in translation. The translators were instructed about the objectives of the project and were instructed to translate more contextually than literally.

Stage II: reconciliation

Translated versions were reconciled in the presence of the two translators and one speech language pathologist who did not participate in the previous step. This stage aimed to evaluate and resolve discrepancies between the two translations, and to produce a single Brazilian Portuguese version.

Stage III: back-translation (Brazilian Portuguese-English)

It was prepared by an English teacher, a "naïve translator," that is, who is not involved with the health industry. It is important that one of the translators has this characteristic to be less influenced by academic goals and be able to offer a translation that is closer to the popular language.

Stage IV: harmonization

The harmonization of the back-translation with the original instrument was performed in the presence of two bilingual speech language pathologists who did not participate in the previous translations. This phase aimed to ensure conceptual equivalence between the original language and the target language.

Stage V: pilot testing

To assess the degree of clarity and relevance of the questions, a pilot test was conducted with five MTF transsexuals (ages between 29 years and 10 months and 40 years and 10 months, high school as the minimum level of education, and the time living as a woman of at least 5 years) who received care at the Clinic of Reconstructive Urology of *Hospital Universitário Pedro Ernesto* (HUPE).

After reading and signing the Free and Informed Consent Form (FICF), the interviewees responded to the items of the TVQ:MtF questionnaire and to the demographic form, and assessed the clarity and relevance of each question using a Likert scale.

To assess clarity, they were asked to anser the following question: "Assess the clarity of each item", being: 0=not clear; 1=little clear; 2=more or less clear; 3=clear; 4=very clear.

Similarly, for the evaluation of relevance, the respondents answered the following question: "Evaluate the degree of relevance of each item", and the possible answers were: 1=irrelevant; 2=not very relevant; 3=relevant; and 4=very relevant.

In this pilot stage, the participants were also invited to submit comments and suggestions regarding the form and content of the questionnaire and demographic form.

Preliminary results of the pilot test

Data analysis showed that items 1 and 23, respectively translated as "People have difficulty hearing me in a noisy room" and "My voice restricts the type of work I do" were judged as "more or less clear" by one of the five participants in the pilot test. Items 1 and 23 have not changed, as the project team considered that they were clear.

Item 11, translated as "When I talk, the tone of my voice does not vary enough" was considered "more or less clear" by one of the participants. In addition to this, three of the four other participants had doubts about this sentence. Therefore, item 11 was changed to "The tonal range of my female voice is small".

Item 29, translated as "The extent of tones of my speaking voice is restricted" was considered "more or less clear" by one of the five participants. Of the other four participants had doubts about the term "extension of tones", which led to the sentence being changed to "My speaking voice has a small variation of tones".

Although they were judged as clear or very clear by the five participants, further explanation on items 5, 14, 18, and 22 were requested from the researchers.

Item 5, translated as "The tone of my voice is not reliable" has raised questions in three of the five participants due to the term "reliable", and the sentence was changed to "It's hard to know how the tone of my voice will sound".

Item 14, translated as "My voice sounds strained" raised doubts in one of the five participants, and it was altered to "My voice sounds artificial".

Item 18, translated as "When I'm not paying attention, the tone of my voice lowers" has raised questions in two of the five participants due to the use of the term "lowers". The sentence was changed to "When I'm not paying attention, the tone of my voice gets lower".

Item 22, translated as "My voice gets tired quickly," raised doubt in one of the five participants, but the sentence was not changed because it was considered clear by the project team.

Items 12, 17, 23, 24, and 30 of the TVQ:MtF were considered not very relevant to one of the five participants, as well as items of the TVQ:MtF: Demographic Form related to employment and education, qualification, daily life and treatments, time living as a woman, and voice surgery. Such considerations did not represent exclusions or modifications in their final version, which were considered relevant by the project team.

After the incorporation of the changes suggested by the pilot test, the questionnaire and demographic form underwent spelling and grammar check to avoid inadequacies and errors in terms/phrases translated into the final Brazilian Portuguese version.

Psychometric properties of the questionnaire

To investigate the psychometric properties of the questionnaire, a study was conducted with 13 MTF transsexuals who received care in the Reconstructive Urology Clinic of HUPE and who agreed to participate voluntarily in this study. None of the 13 respondents participated in the pilot test with this instrument (Chart 1).

Two psychometric properties were investigated: internal consistency and test–retest reliability.

The participants agreed to answer the TVQ:MtF in two occasions (test and retest) and did not undergo any intervention between both assessments.

The idealized interval between the test and the retest was of 30 days, a period that is not too short, to avoid the possible influence of recall bias, and not too long, to prevent the influence of possible changes related to the items surveyed. However, it was not possible to perform the test and retest applications in the idealized period, given the occurrence of practical circumstances, such as the lack of availability of participants to meet the deadline.

The average interval between test and retest evaluations was 46 days, with minimum variation of 18 and a maximum variation of 94 days. Note that the irregularity in the range of application did not affect the stability of the responses provided by the participants.

Statistical analysis

The reliability of the questionnaire was evaluated using the same procedures suggested by Dacakis et al.[10]. The following statistical tests were performed:

1. Cronbach's alpha (α): the coefficient measures how related the test items are as a group. This closeness is called the internal consistency of the items on the scale. This coefficient is a function of the number of test items and the average intercorrelation between them. The Cronbach's alpha varies in the range of 0.0–1.0, and the closer this value is to 1.0, the better the internal consistency.

2. Item-Total Correlation (ITC): the ITC measures the correlation of each item with the total. Items that have a low ITC value (<0.20) are considered weak, so they may not be representing the global scale correctly and also may not discriminate well the respondents who have a high total amount from those who have a low value.

Chart 1. Characterization of the study participants (n = 13) according to the demographic form

Participant	Age (years;months)	Education	Time living as a woman (years;months)	Use of hormones	Time of hormone use (years;months)	Underwent surgery
1	43;8	High school	43;6	Yes	19;0	Não
2	33;4	Undergraduate student	8;6	Yes	8;0	Sim
3	21;6	Undergraduate student	2;6	Yes	1;10	Não
4	29;0	High school	10;0	Yes	7;0	Não
5	27;3	High school	3;0	Yes	0;5	Não
6	34;6	Undergraduate student	4;0	Yes	4;0	Não
7	38;6	Elementary school	18;0	Yes	7;0	Sim
8	31;5	High school	18;0	Yes	15;0	Sim
9	35;6	Elementary school	10;0	Yes	1; 2	Não
10	38;10	Undergraduate student	30;0	Yes	8;0	Não
11	47;10	Graduate student	4;0	Yes	3;0	Não
12	30;11	High school	0;9	Yes	0;5	Não
13	43;8	High school	31;0	No	–	Sim
Mean	35;0		14;1		6;2	
Amplitude	21;6–47;100				1;2–15;0	

3. Intraclass Correlation Coefficient (ICC): The ICC provides a concordance or consistency index between measurements made during the test–retest interval, that is, it measures the temporal stability of the answers to the items on the scale. The value is between 0.0 and 1.0, and the closer this value is to 1.0, the better the temporal stability of the answers.

The 13 participants were contacted by telephone and were seen, at *Universidade Veiga de Almeida*, by the Speech-Language Pathologist who led the study. All participants were informed about the objectives of the project and agreed to participate by reading and signing the Free and Informed Consent Form (FICF), in accordance with Resolution 196/96 on research involving human beings.

The participants were asked to complete the questionnaire and demographic form (TVQ:^MtF and TVQ:^MtF: Demographic Form). It should be noted that the Speech-Language Pathologist did not interfere with the reading of the questionnaire or the marking of answers to avoid any bias in the participants' evaluations.

RESULTS

Internal consistency

The Cronbach's alpha test (α) was performed for the test and the retest. The values obtained in both the test (α=0.911) and the retest (α=0.952) show that the TVQ:^MtF had a high level of internal consistency.

Item-total correlation

Descriptive statistics and correlations of items with the total for the test and the retest are shown in Tables 1 and 2, respectively.

ITC range for the test was from 0.152 (Item 14) to 0.821 (Q.3). The range shows a moderate-to-high degree for the perceptions in the questionnaire. Only Item 14 of the instrument, "My voice sounds artificial," was considered a poor item.

The values were found in the retest point to intervals between 0.248 (Item 14) and 0.886 (Item 4). In the retest, there was no item with ITC<0.20; therefore, no items were considered poor.

Table 1. Descriptive statistics for the test according to the *TVQ*:^MtF questionnaire, applied to 13 participants

Items of the *TVQ*:^MtF	Mean (SD)	Min–Max	Median	Mode*	ITC
1. People have difficulty hearing me in a noisy room.	2.6 (1.0)	1–4	3	2	0.330
2. I feel anxious when I know I have to use my voice.	3.2 (1.0)	1–4	4	4	0.234
3. My voice makes me feel less feminine than I would like.	3.1 (0.9)	2–4	3	4	0.821
4. The tone of my speaking voice is very low.	3.0 (0.8)	2–4	3	3	0.670
5. It's hard to know how the tone of my voice will sound.	2.6 (1.0)	1–4	3	2	0.462
6. My voice disrupts my life as a woman.	2.7 (1.1)	1–4	3	2	0.408
7. I avoid using the telephone because of my voice.	1.8 (0.8)	1–3	2	1	0.509
8. I get tense when talking to others because of my voice.	3.1 (0.9)	2–4	3	4	0.604
9. I get hoarse when I try to speak with my female voice.	1.4 (0.7)	1–3	1	1	0.665
10. My voice makes it difficult for me to be recognized as a woman.	2.3 (1.0)	1–4	2	2	0.709
11. The tonal range of my female voice is small.	2.6 (1.0)	1–4	2	2	0.444
12. I feel uncomfortable talking with friends, neighbors, or relatives because of my voice.	2.3 (1.1)	1–4	2	1	0.547
13. I avoid speaking in public because of my voice.	2.8 (1.1)	1–4	3	2	0.495
14. My voice sounds artificial.	2.2 (0.7)	1–3	2	2	0.152
15. I have to concentrate to make my voice sound like I want it to sound.	2.5 (0.9)	1–4	2	2	0.425
16. I feel frustrated when I try to change my voice.	2.9 (1.1)	1–4	3	4	0.365
17. My difficulties with my voice restrict my social life.	2.6 (1.2)	1–4	3	4	0.735
18. When I'm not paying attention, the tone of my voice gets lower.	2.8 (1.2)	1–4	3	4	0.493
19. When I laugh, I sound like a man.	2.3 (1.3)	1–4	2	1	0.384
20. My voice does not suit my physical appearance.	3.2 (0.9)	2–4	4	4	0.492
21. I have to make a huge effort to produce my voice.	2.3 (0.9)	1–4	2	2	0.333
22. My voice gets tired quickly.	2.1 (1.0)	1–4	2	2	0.413
23. My voice restricts the type of work I do.	1.6 (0.9)	1–4	1	1	0.240
24. I feel that my voice does not reflect my "true self".	3.3 (0.9)	2–4	4	4	0.364
25. I am less extroverted because of my voice.	3.0 (0.9)	2–4	3	2	0.605
26. I am aware of how strangers perceive my voice.	2.9 (1.2)	1–4	3	4	0.613
27. My voice "breaks up" in the middle of speech.	2.4 (1.1)	1–4	2	2	0.376
28. I get annoyed when I am perceived as a man because of my voice.	3.2 (1.0)	1–4	4	4	0.544
29. My speaking voice has a small variation of tones.	2.8 (1.0)	1–4	3	2	0.600
30. I feel discriminated against because of my voice.	2.1 (1.3)	1–4	2	1	0.583

*In case of multiple modes, the lowest value is presented.

Caption: SD = standard deviation; ITC = item-total correlation

Table 2. Descriptive statistics for the retest according to the *TVQ*:^{MtF} questionnaire, applied to 13 participants

Items of the *TVQ*:^{MtF}	Mean (SD)	Min Max	Median	Mode*	ITC
1. People have difficulty hearing me in a noisy room.	2.5 (0.8)	2–4	2	2	0.659
2. I feel anxious when I know I have to use my voice.	3.0 (1.1)	1–4	3	4	0.633
3. My voice makes me feel less feminine than I would like.	3.2 (0.9)	1–4	3	4	0.607
4. The tone of my speaking voice is very low.	2.5 (1.1)	1–4	2	2	0.866
5. It's hard to know how the tone of my voice will sound.	2.5 (0.9)	1–4	2	2	0.558
6. My voice disrupts my life as a woman.	2.7 (1.2)	1–4	2	2	0.717
7. I avoid using the telephone because of my voice.	2.2 (1.0)	1–4	2	2	0.441
8. I get tense when talking to others because of my voice.	2.8 (1.0)	1–4	3	2	0.582
9. I get hoarse when I try to speak with my female voice.	2.2 (1.1)	1–4	2	1	0.719
10. My voice makes it difficult for me to be recognized as a woman.	2.7 (1.1)	1–4	2	2	0.660
11. The tonal range of my female voice is small.	2.6 (1.0)	1–4	2	2	0.543
12. I feel uncomfortable talking with friends, neighbors, or relatives because of my voice.	2.5 (1.1)	1–4	3	3	0.810
13. I avoid speaking in public because of my voice.	2.8 (1.0)	1–4	3	2	0.793
14. My voice sounds artificial.	1.9 (0.9)	1–4	2	2	0.248
15. I have to concentrate to make my voice sound like I want it to sound.	2.3 (0.9)	1–4	2	2	0.693
16. I feel frustrated when I try to change my voice.	2.9 (1.0)	1–4	3	3	0.853
17. My difficulties with my voice restrict my social life.	2.6 (1.3)	1–4	3	4	0.455
18. When I'm not paying attention, the tone of my voice gets lower.	2.4 (1.0)	1–4	2	2	0.615
19. When I laugh, I sound like a man.	2.2 (1.2)	1–4	2	1	0.573
20. My voice does not suit my physical appearance.	3.4 (0.9)	2–4	4	4	0.753
21. I have to make a huge effort to produce my voice.	2.3 (1.0)	1–4	2	2	0.755
22. My voice gets tired quickly.	2.3 (1.2)	1–4	2	1	0.659
23. My voice restricts the type of work I do.	1.8 (0.7)	1–3	2	2	0.416
24. I feel that my voice does not reflect my "true self".	3.2 (1.1)	1–4	4	4	0.506
25. I am less extroverted because of my voice.	3.2 (0.9)	2–4	4	4	0.724
26. I am aware of how strangers perceive my voice.	2.9 (1.1)	1–4	3	4	0.777
27. My voice "breaks up" in the middle of speech.	2.3 (0.9)	1–4	2	2	0.335
28. I get annoyed when I am perceived as a man because of my voice.	3.2 (1.0)	1–4	4	4	0.410
29. My speaking voice has a small variation of tones.	2.5 (1.1)	1–4	2	2	0.542
30. I feel discriminated against because of my voice.	2.2 (0.9)	1–4	2	2	0.653

*In case of multiple modes, the lowest value is presented.

Caption: SD = standard deviation; ITC = item-total correlation

Intraclass Correlation Coefficient

ICC was used to evaluate the test–retest reliability of the questionnaire. The resulting coefficient was high, showing excellent stability of measures over time, with average ICC=0.957, confidence interval (95%) of 0.916-0.984, and p<0.001.

Perception of vocal functioning and impact of voice in daily life

The averages of each of the 30 items in the questionnaire were calculated, as well as the minimum and maximum averages for the test and the retest, and the following values were obtained.

For test and retest, the total average between items was 2.59. For the test, a minimum variation of 1.40 (Item 9) and a maximum of 3.30 in the test (Item 24) were verified. In the retest, the amplitude ranged between a minimum of 1.80 (Item 23) and a maximum of 3.40 (Item 20).

The total average of the test (2.59) was distributed in a deviation (D) of –0.650, with standard error of deviation (SED) of 0.427, considered acceptable, and kurtosis (K) of 0.018, with standard error kurtosis (SEK) of 0.833, considered minimal. The average of the retest (2.59) was distributed in D=0.210 with SED=0.427 and K=–0.528 with SEK=0.833, both values deemed acceptable.

The total mean score for the TVQ:^{MtF} was 77.69 for the test, with standard deviation of (SD) of 15.95, and a minimum score of 55 and a maximum of 112. For the retest, the total mean score was of 77.85, with SD=19.71, and minimum score of 42 and a maximum of 116.

Through the study of mode, it was possible to verify the most common response among participants for each of the items of the questionnaire.

For the test, answers that were judged as "usually or always" (mode 4) were found in items 2, 3, 8, 16, 17, 18, 20, 24, 26, and 28. In the retest, the items judged as "usually or always" were 2, 3, 17, 20, 24, 25, 26, and 28.

For Items 4 (test), 12, and 16 (retest), the most common response among participants was the category "often".

Items 1, 5, 6, 10, 11, 13, 14, 15, 21, 22, 25, 27, and 29 were identified in the test as something that happens "sometimes" by most participants, and Items 1, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 18, 21, 23, 27, 29, and 30 were identified in the retest as something that happens "sometimes" by most participants.

In the test, Items 7, 9, 12, 19, 23, and 30 were mentioned by most participants as "never or rarely" happening. For the retest, Items 9, 19, and 22 were identified as "never or rarely".

DISCUSSION

The voice of MTP transsexual clients can be an obstacle in the search for adequacy between their physical appearance and gender identity[13]. A transsexual who is apparently a woman can be identified as a man several times in their daily life.

The vocal self-assessment allows insight on the degree of satisfaction of transsexuals with their own voices and communication. Its performance should integrate the multidimensional evaluation of the voice and communication of transsexuals. In addition, the history of identification of the transsexual with the female gender, the influence of social relations, and the establishment of harmony between voice communication and gender should be considered in this process.

The high levels of internal consistency obtained in this study in both test (α=0.911) and retest (α=0.952) were similar to the results obtained in the study by Dacakis et al.[10], in which the coefficients obtained were α=0.964 for the test and α=0.974 for the retest.

The amplitude of the ITC values showed a moderate to high degree among the items of the questionnaire. Although the sentence "My voice sounds artificial" (Item 14) presented an ITC lower than 0.20 (ITC=0.152) in the test, there was agreement on the degree of homogeneity obtained by Dacakis et al.[10]. The analysis of the TVQ: MTF (original version) did not reveal any item considered poor/weak in the test (0.39-0.85) or in the retest (similar amplitude to test).

The ICC, used to evaluate the test–retest reliability, showed excellent stability over time. The value was similar to that observed by Dacakis et al.[10], which showed ICC=0.979. This evaluation showed stability, even if the interval idealized in the study was not met. Thus, it is understood that the interval in the application of questionnaires was not a decisive factor for the stability of the responses in this sample.

The strong psychometric properties found in this study seem to show that the TVQ:^{MtF} (translated version) is a good tool for clinical use and research.

There was no significant correlation between the total score obtained by the participants when compared with the variables age, time living as a woman, education level, and time of hormone use.

In the work by Dacakis et al.[10], a negative correlation was observed between the total score and the time living as a woman, that is, the greater the time living in the female role, the lower were the scores obtained. This finding was explained by the author as a minor concern over time in search of the ideal in the female gender.

The weaknesses and limitations observed in this study were the low number of participants in the sample, justified by the difficulty of contacting the participants due to them constantly changing phone numbers; the high number of absences to appointments; as well as the little availability for participation in the study because of their work routines.

In addition, the range of application of the questionnaire between test and retest was not ideal, given that many of the participants had difficulties in attending the dates required, scheduling dates before or after the idealized range.

To regulate the time between applications and reduce the number of absences to appointments, there is discussion on the possibility of sending questionnaires to participants to circumvent the need to return to the clinic for the second phase (retest).

It was statistically shown that there was stability in the responses over time and that the irregular interval did not affect the stability of the answers.

It is suggested, as a continuation of this study, that the TVQ:^{MtF} is applied to a larger sample, besides the translation and adaptation of the TVQ:^{FtM} (Female-to-Male) questionnaire.

CONCLUSION

The Brazilian version of the TVQ:^{MtF} questionnaire proved to be a consistent and reliable instrument, therefore suitable for clinical use and research for the self-assessment of MTF transsexual patients.

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