

## Translation and Cross-cultural Adaptation of Traditional Masculinity and Femininity Scale (TMF-s) for use with Brazilian University Students

### Tradução e Adaptação Transcultural da Escala de Masculinidade e Feminilidade Tradicionais (TMF-s) para uso em Universitários Brasileiros

Michele Nascimento<sup>\*a</sup>; Maurício Kosminsky<sup>a</sup>; Viviane Colares<sup>b</sup>; Jair Carneiro Leão<sup>c</sup>

<sup>a</sup>University of Pernambuco, PE, Brasil.

<sup>b</sup>University of Pernambuco, Stricto Sensu Graduate Program in Pediatric Dentistry, PE, Brasil.

<sup>c</sup>Federal University of Pernambuco, Stricto Sensu Graduate Program in Dentistry, PE, Brasil.

\*E-mail: [michelempme@yahoo.com.br](mailto:michelempme@yahoo.com.br)

Recebido em: 31/01/19

Aprovado em: 10/07/19

---

#### Abstract

Men and women seem to have different susceptibilities to disease and dissimilar responses to pain. These differences are not well understood. Understanding those variations between men and women from the perspective of gender identity can contribute to disparities observed in the health field. Since 1980, efforts have been made to develop instruments that can help to categorize individuals according to their own gender perception. One of these, recently developed, is the Traditional Masculinity and Femininity Scale (TMFs). The advantage of this scale is to allow the gender self-identification without the need for attributes. The aim of this study is to present the process of cross-cultural adaptation of the TMFs for applicability in studies in the Brazilian population. The cross-cultural adaptation followed the steps: 1) authorization by the authors; 2) initial translation into Portuguese; 3) cultural, conceptual, experimental and idiomatic adaptation to the target population; 4) retroversion; 5) assessment by a revision committee; and 6) pretest. The equivalence of measurement, corresponding to the psychometric properties to a gold standard, is in progress. In conclusion, the original version of the TMF scale, having been translated, culturally adapted, and validated into Brazilian Portuguese has proven to be a reliable instrument that is easy to use, and can be used in both clinical practice and clinical trials in the evaluation of gender identity.

**Keywords:** Gender Identity. Transcultural Adaptation. Surveys and Questionnaires.

#### Resumo

*Homens e mulheres parecem ter diferentes suscetibilidades às doenças e respostas diferentes à dor. Essas disparidades não são bem compreendidas. A compreensão dessas variações entre homens e mulheres na perspectiva da identidade de gênero pode contribuir para as disparidades observadas no campo da saúde. Desde a década de 1980, esforços têm sido feitos para desenvolver instrumentos que possam ajudar a categorizar os indivíduos de acordo com sua própria percepção de gênero. Uma delas, recentemente desenvolvida, é a Escala de Masculinidade e Feminilidade Tradicionais (TMFs). A vantagem desta escala é permitir a auto identificação do gênero sem a necessidade de atributos. O objetivo deste estudo é apresentar o processo de adaptação transcultural dos TMFs para aplicabilidade em estudos na população brasileira. A adaptação transcultural seguiu os passos: 1) autorização dos autores; 2) tradução inicial para o português; 3) adaptação cultural, conceitual, experimental e idiomática à população-alvo; 4) retroversão; 5) avaliação por um comitê de revisão; e 6) pré-teste. A equivalência de medida, correspondente às propriedades psicométricas de um padrão-ouro, está em andamento. Em conclusão, a versão original da escala TMF, traduzida, adaptada culturalmente e validada para o português brasileiro, mostrou-se um instrumento confiável e de fácil utilização, podendo ser utilizada tanto na prática clínica quanto nas pesquisas para a avaliação da identidade de gênero.*

**Palavras-chave:** Identidade de Gênero. Adaptação Transcultural. Inquéritos e Questionários.

---

#### 1 Introduction

The last decade has seen an explosion in research on social contributions to health and well-being. Social epidemiology brought renewed attention to social context, and the value of revealing an individual within his/her context, for deeper understandings of health risks and exposures. Because of these developments, contemporary health researchers look both deeper within the body itself, and further upstream to environments, thus “situating” the body<sup>1</sup>.

Two concepts or variables often mentioned in health research are “sex” and “gender”. Sex refers to the biological distinctions between males and females, most often in connection with reproductive functions. Gender, by contrast,

emphasizes the socially constructed differences between men and women that give rise to masculinity and femininity. The term gender can be applied to individual difference, as well as to cultural, institutional, and structural differences, which is conceptualized as gender roles<sup>2</sup>.

Each individual may have a number of identities, such as an ethnic identity, a religious identity, or a national identity. A very fundamental identity is one’s gender identity. Gender identity refers to the extent to which a person experiences oneself to be like others of one gender. One’s sense of being male or female largely determines how people view themselves and provides an important basis for their interactions with others<sup>3</sup>.

Gender role refers to the culturally and socially constructed meanings that describe how women and men should behave in certain situations according to feminine and masculine roles learned throughout life. Gender identity and gender roles are often described as a single concept<sup>4</sup>.

Men and women seem to have different susceptibilities to disease. These differences are not well understood. For example, individual differences in gender roles have also helped to explain sex differences in clinical pain. Masculinity is associated with less physical disability and pain, less psychological distress and anxiety, and greater life satisfaction among male and female patients with rheumatoid arthritis. In addition, a prospective study revealed that higher femininity at college entry was predictive of chronic pain conditions 30 years later among men, but not women<sup>5,6</sup>.

Gender research has developed many instruments to measure different aspects of self-ascriptions of gender stereotypical features, including attributes, behaviors, interests, and attitudes<sup>7</sup>. Supplementing these scales, the Traditional Masculinity and Femininity Scale (TMFs) was designed as an instrument for globally assessing people's overall, or "core," masculinity-femininity. The TMFs measured reliable an underlying, one-dimensional construct, and it was found to be a valid instrument for assessing masculinity-femininity. Furthermore, it correlated moderately with other gender-related instruments, such as the Bem Sex Role Inventory (BSRI) and the German Extended Personal Attributes Questionnaire (GEPAQ)<sup>8</sup>.

However, the gold standard BSRI instrument was developed in the late 1980s (German version). Considering social, cultural and behavioral changes over the last decades, it might have lost some validity regarding the description of femininity and masculinity<sup>7,9</sup>.

The TMFs instrument has been recently developed and validated to the assessment of gender identity and gender roles. Due to the predictable differences possibly found among countries, and the importance of this topic in pain research, the objective of the present study was to translate and perform a cross-cultural adaptation of the TMF scale so that it can be used as a screening tool for gender research in Brazil.

## 2 Material and Methods

### 2.1 The scale

The TMF scale is an instrument for measuring gender-role self-concept, namely, gender-role adoption, gender-role preference, and gender-role identity. TMF consists of six items only: One for gender-role adoption ("I consider myself as..."), one for gender-role preference ("Ideally, I would like to be..."), and four for gender-role identity ("Traditionally, my 1. interests, 2. attitudes and beliefs, 3. behavior, and 4. outer appearance would be considered as...") in order to measure an individual's gender-role self-concept in parsimoniously.

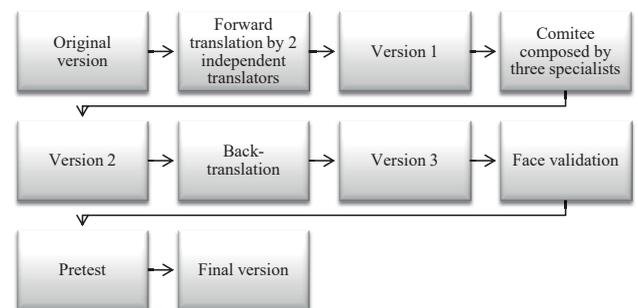
All of them have high face validity. Each item is to be

independently rated in terms of femininity and masculinity. A 7-point-scale is used to gauge the extent to which the participant feels feminine or masculine, how feminine or masculine she or he ideally would like to be, and how feminine and masculine her or his appearance, interests, attitudes, and behavior would traditionally be seen<sup>7</sup>.

### 2.2 Forward and back-translation process

The cross-cultural adaptation followed the steps proposed by World Health Organization<sup>10</sup> and Guillemin et al.<sup>11</sup>: 1) authorization by the authors; 2) initial translation into Portuguese; 3) cultural, conceptual, experimental and idiomatic adaptation to the target population; 4) retroversion; 5) assessment by a revision committee; and 6) pretest. The schematic of all stages of cross-cultural adaptation can be seen in Figure 1.

**Figure 1** - Schematic stages of cross-cultural adaptation



**Source:** The authors.

The lead author of the TMFs was initially contacted and authorized the translation to Brazilian Portuguese. The Research Ethics Committee of the University of Pernambuco (protocol 83717617.7.0000.5207) approved the study.

Initially, two native Brazilian speakers who had Brazilian Portuguese as their mother language and were fluent in English independently translated the items in the original version of the TMFs into Brazilian Portuguese. Only one of the translators was aware of the results analyzed by the questionnaire. The other translator had no knowledge of the concepts, being characterized as a "naive" translator. Therefore, two independent versions (T1 and T2) were produced.

Then, a committee of two psychologists and two dentists, all bilingual, compared these two initial translations, creating a new, first version of the scale in Brazilian Portuguese. All members of this committee were bilingual university professors and researchers with clinical experience in gender diversity and had advanced knowledge of the English language. The concern with semantic, idiomatic and conceptual equivalence was present in the accomplishment of cross-cultural adaptation as well as the use of simple and familiar words to the age group and target population.

Two professional bilingual translators who were fluent in Portuguese and English back translated the first Brazilian Portuguese version into English. They did not participate in the previous stage and did not know the TMFs. Following,

the two back translated versions were compared with the original TMFs to validate the consistence in the translated version which reflected the same original meaning. The two back translations were very similar with just two different text fragments.

Face validity was performed in a target population which comprised six university students. There were no doubts concerning questions interpretation, requiring no changes on the forward translated scale. The pre-test phase intended to test the scale regarding comprehension, clarity of questions and answers and difficulties encountered. It was performed at the Faculty of Dentistry of Pernambuco, Brazil, among 42 dentistry students from both genders (30 female and 12 male), aged between 20 and 23 years. They were invited to the classroom and agreed to participate by signing the informed consent term. After a meeting with the volunteers, when the objectives of the study were explained, the scale was applied as a self-administered questionnaire. At the end, each participant was asked about the instrument in relation to the items described previously. The mean time of the scale application

was 20 minutes and no doubt or difficulty understanding was reported. Data analysis was performed using IBM SPSS 21.0 software (IBM Corp., Armonk, United States).

### 3 Results and Discussion

During the process of forward translation, some expressions had to be reworded to fit the Brazilian context. The main changes were made in the following terms: the words “ideally”, initially translated as “*idealmente*”, and “Traditionally” which was translated as “*Tradicionalmente*”. Since these words may not be properly interpreted, the authors agreed to replace for “*Preferencialmente*” and “*De modo geral*”, respectively.

From the median of the scale, it was possible to observe variation between biological sex and gender identity, the main scale construct. Comparing to the BSRI instrument, it was not necessary for the participants to discriminate attributes, since it is a concept that the subject has of herself/himself. This is the main advantage of this scale (Table 1).

**Table 1** - Original version, version 1, back-translated version and final version of the TMF scale.

Item	Original	Version 1	Back-translation	Final version
1	I consider myself as ...	Eu me considero como...	I consider myself as ...	Eu me considero como...
2	Ideally, I would like to be ...	Preferencialmente, eu gostaria de ser...	Preferably, I would like to be ...	Preferencialmente, eu gostaria de ser...
3	Traditionally, my interests would be considered as...	De modo geral, meus interesses seriam considerados como...	Overall, my interests would be considered as ...	De modo geral, meus interesses seriam considerados como...
4	Traditionally, my attitudes and beliefs would be considered as...	De modo geral, minhas atitudes e crenças seriam consideradas como...	Overall, my attitudes and beliefs would be considered as ...	De modo geral, minhas atitudes e crenças seriam consideradas como...
5	Traditionally, my behavior would be considered as...	De modo geral, meu comportamento seria considerado como...	Overall, my behavior would be considered as ...	De modo geral, meu comportamento seria considerado como...
6	Traditionally, my outer appearance would be considered as...	De modo geral, minha aparência exterior seria considerada como...	Overall, my outward appearance would be regarded as ...	De modo geral, minha aparência exterior seria considerada como...

**Source:** Research data.

Considering this scale is not a diagnostic instrument, it was not necessary to investigate its reproducibility by means of Cronbach. It is imperative to state that an advantage of this scale is to allow the researcher to identify gender identity as well as gender roles.

This study presented the stages of the translation into Brazilian Portuguese and cross-cultural adaptation of an instrument for the evaluation of identity/gender roles. Each step of the instrument adaptation process was carried out carefully, and few changes were necessary based on discussions among the researchers, specialists and literature review, in order to obtain conceptual, semantic and operational equivalence<sup>12</sup>. The study for the evaluation of its psychometric properties is

being developed.

### 3 Conclusion

In conclusion, the original version of the TMF scale, translated, culturally adapted, and validated into Brazilian Portuguese has proven to be a reliable instrument that is easy to use, and can be used in both clinical practice and clinical trials in the evaluation of gender identity. However, further application of this instrument is recommended in different populations.

### References

1. Short SE, Yang YC, Jenkins TM. Sex, gender, genetics,

- and health. *AJPH* 2013;103(S1),S93-S101. doi: 10.2105/AJPH.2013.301229
2. Berenbaum SA, Beltz AM. How early hormones shape gender development. *Curr Opin Behav Sci* 2016;7(2):53-60. doi: 10.1016/j.cobeha.2015.11.011
  3. Myers CD, Robinson ME, Riley JL, Sheffield D. Sex, gender, and blood pressure: contributions to experimental pain report. *Psychosom Med* 2001;63(4):545-50.
  4. Greenspan JD, Craft RM, LeResche L, Arendt-Nielsen L, Berkley KJ, Fillingim RB et al. Studying sex and gender differences in pain and analgesia: a consensus report. *Pain* 2007;132:S26-S45. doi: 10.1016/j.pain.2007.10.014
  5. El-Shormilisy N, Strong J, Meredith PJ. Associations among gender, coping patterns and functioning for individuals with chronic pain: a systematic review. *Pain Res Manag* 2015;20(1):48-55. doi: 10.1155/2015/490610
  6. Alabas OA, Tashani OA, Tabasam G, Johnson MI. Gender role affects experimental pain responses: a systematic review with meta-analysis. *Eur J Pain* 2012;16(9):1211-23. doi:10.1002/j.1532-2149.2012.00121.x
  7. Kachel S, Steffens MC, Niedlich C. Traditional masculinity and femininity: Validation of a new scale assessing gender roles. *Front Psychol* 2016;7(5):1-19. doi: 10.3389/fpsyg.2016.00956
  8. Fillingim RB, Edwards RR, Powell T. The relationship of sex and clinical pain to experimental pain responses. *Pain* 1999;83(3):419-25. doi: 10.1016/S0304-3959(99)00128-1
  9. Kröner-Herwig B, Gaßmann J, Tromsdorf M, Zahrend E. The effects of sex and gender role on responses to pressure pain. *GMS Psycho-Social-Medicine* 2012;2(9):3-10. doi: 10.3205/psm000079
  10. World Health Organization. (2009). Process of translation and adaptation of instruments. [http://www.who.int/substance\\_abuse/research\\_tools/translation/en/](http://www.who.int/substance_abuse/research_tools/translation/en/).
  11. Guillemin F, Bombardier C, Beaton D. Cross-cultural adaptation of health-related quality of life measures: literature review and proposed guidelines. *J Clin Epidemiol* 1993;46(12):1417-32. doi: 10.1016/0895-4356(93)90142-N
  12. Sperber AD. Translation and validation of study instruments for cross-cultural research. *Gastroenterology* 2004;126(1):124-8. doi: 10.1053/j.gastro.2003.10.016