

# Cross-cultural adaptation and validation of the Voice Symptom Scale – VoiSS into Brazilian Portuguese

Felipe Thiago Gomes Moreti<sup>1</sup>

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**Purpose:** To validate the protocol Voice Symptom Scale – VoiSS into Brazilian Portuguese and to perform the factorial analysis of its questions. **Methods:** Three hundred individuals participated in the study, 160 with vocal complaints (104 women and 56 men), and 140 without vocal complaints (91 women and 49 men), with statistical similarity in relation to age, gender distribution and occupational levels. The translation and validation were performed according to the criteria of the Scientific Advisory Committee of the Medical Outcomes Trust: step 1 – Translation and linguistic and cultural adaptation (translation of the instrument and evaluation of cultural equivalence), step 2 – Construct validity (validity content and construct validity), step 3 – Reliability (internal consistency and test-retest reproducibility), and step 4 – Sensitivity and Responsiveness (for each question of the protocol, and changes with treatment). The factorial analysis, considered possible by KMO (0.814) and Bartlett tests ( $p < 0.001$ ), was performed after completion of the protocol validation into Brazilian Portuguese. **Results:** Translation and linguistic adaptation: there were no problems in the translation process, and it was not necessary to remove or change any questions of the protocol, reaching the translated and culturally adapted version, called *Escala de Sintomas Vocais – ESV*, with 30 questions. Validity: content validity was assured by the previous step and construct validity was assured by a statistically significant difference in total score compared with data from the vocal self-assessment in subjects with and without vocal complaints ( $p < 0.001$ ). Reliability: the *ESV*

showed high levels of internal consistency (Cronbach's alpha for the impairment subscale score=0.950, emotional=0.810, physical=0.913, total=0.960, all with  $p < 0.001$ ) and excellent test-retest reproducibility (impairment:  $p = 0.265$ , emotional:  $p = 0.481$ , physical:  $p = 0.585$ , total:  $p = 0.905$ ). Sensitivity: 30 items of the *ESV* were sensitive to individuals with vocal complaints. The partial and total scores of the *ESV* as well as voice perceptual analysis were statistically different pre-and post-vocal therapy (impairment, physical, total and perceptual analysis:  $p < 0.001$ , emotional:  $p = 0.008$ ). The factorial analysis indicated a division of the 30 questions in nine factors, resulting in a total cumulative variation of 67.75, considered a good amount. The nine factors were named as follows: 1- emotional (five questions), 2- functional (six questions), 3- vocal performance (six questions), 4- phlegm (three questions), 5- sound of voice (two questions), 6- throat sensation (three questions), 7- vocal pleasantness (three questions), 8- vocal instability (one question) and 9- singing voice (one question). **Conclusion:** The validated version of Voice Symptom Scale – VoiSS for Brazilian Portuguese, called *Escala de Sintomas Vocais – ESV*, presents confirmed psychometric properties, and it is specific for evaluation of individuals with voice disorders. Factorial analysis of the validated version of the *ESV* presented nine factors: emotional, functional, vocal performance, phlegm, sound of voice, throat sensation, vocal pleasantness, vocal instability and singing voice.

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(1) Graduate Program (Doctorate degree) in Human Communication Disorders, Universidade Federal de São Paulo – UNIFESP – São Paulo (SP), Brazil; Centro de Estudos da Voz – CEV – São Paulo (SP), Brazil.

**Correspondence address:** Felipe Moreti. R. Visconde de Mauá, 347, Vila Assunção, Santo André (SP), Brasil, CEP: 09030-530. E-mail: felipemoreti@uol.com.br