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Brief Communication

Comunicação Breve

Voice symptoms and vocal deviation self-assessment in different types of dysphonia

Sintomas vocais e autoavaliação do desvio vocal em diferentes tipos de disfonia

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Keywords

Dysphonia
Quality of Life
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ABSTRACT

Purpose: To identify the relationship among the type of dysphonia, vocal deviation self-assessed and the presence of voice symptoms in adults. **Methods:** One hundred sixty-four subjects of both genders (58 males and 106 females, mean age 42.89 years) diagnosis of dysphonia, divided into three groups according to the type of dysphonia: 87 individuals with functional dysphonia, 35 individuals with organofunctional dysphonia and 42 individuals with organic dysphonia, answered the Brazilian validated version of Voice Symptom Scale (VoiSS) (*Escala de Sintomas Vocais* – ESV), that consists of 30 questions with four scores: Impairment, Emotional, Physical and Total, and self-assessed their voices as excellent, very good, good, fair or poor. **Results:** According to the dysphonia type, there were differences in ESV Impairment, Emotional and Total mean scores, which was not found in the Physical score. The Impairment, Emotional and Total mean scores were higher in organic dysphonia, followed by organofunctional dysphonia and finally functional dysphonia. When the vocal self-assessment is poor, the higher are the deviations in the Impairment, Emotional and Total ESV scores. **Conclusions:** Individuals with organic dysphonia reported higher perception of voice symptoms, followed by subjects with organofunctional dysphonia and finally individuals with functional dysphonia. In general, individuals with dysphonia presented physical voice symptoms, regardless of the type of the dysphonia. Finally, there are direct correlations between Impairment, Emotional and Total ESV scores and the vocal self-assessment.

Descritores

Disfonia
Qualidade de Vida
Distúrbios da Voz
Questionários
Autoavaliação
Fonoaudiologia

RESUMO

Objetivos: Identificar a relação entre o tipo de disfonia, o grau de desvio vocal autoavaliado e a presença de sintomas vocais em indivíduos adultos. **Métodos:** Participaram do estudo 164 indivíduos de ambos os gêneros (58 homens e 106 mulheres, média de idade de 42,89 anos) com diagnóstico médico otorrinolaringológico de disfonia, divididos em três grupos, de acordo com o tipo de disfonia. Ao todo 87 indivíduos com disfonia funcional, 35 com disfonia organofuncional e 42 com disfonia orgânica responderam a versão validada para o Brasil da *Voice Symptom Scale* (VoiSS) (Escala de Sintomas Vocais – ESV), composta por 30 questões, com quatro escores: Limitação, Emocional, Físico e Total, e autoavaliaram suas vozes em excelente, muito boa, boa, razoável ou ruim. **Resultados:** Houve diferenças na ESV de acordo com o tipo de disfonia para as médias dos resultados nos escores Limitação, Emocional e Total, o que não foi verificado no escore Físico. As médias dos resultados nos escores Limitação, Emocional e Total da ESV foram maiores nas disfonias orgânicas, seguidas pelas organofuncionais e pelas funcionais. Quanto pior a autoavaliação, maior o desvio nos escores Limitação, Emocional e Total da ESV. **Conclusões:** Indivíduos com disfonias orgânicas relataram maior percepção de sintomas vocais, seguidos pelos sujeitos com disfonias organofuncionais e com disfonias funcionais. De forma geral, os indivíduos disfônicos apresentaram sintomas vocais físicos independente do tipo da disfonia. Por fim, existem correlações diretas entre os escores Limitação, Emocional e Total da ESV com a autoavaliação vocal.

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INTRODUCTION

Dysphonia can be defined as a disorder characterized by changes in the vocal quality, frequency, intensity, or effort that limits communication or causes a negative impact on voice-related quality of life through a self-perceived decrease in the individual's physical, emotional, social, or economic status[1]. It may have different etiologies, whether or not related to vocal behavior[2], producing different impacts on quality of life, whose evaluation is made through questionnaires.

During the last decade, the importance of analyzing vocal symptoms together with other data of impact on dysphonia has been stressed. Associating these two pieces of information in a single instrument offers an advantage over the self-assessment protocols that do not investigate such symptoms[3]. However, little is known about whether the type of dysphonia and its relationship with vocal behavior interfere with the perception of these vocal symptoms. Another aspect to be considered is the degree of vocal deviation perceived by the subject, which can be directly related to the number of vocal symptoms.

Of the voice-related quality-of-life protocols originally developed in English, the Voice Symptom Scale (VoiSS)[3] is considered robust because of its psychometric properties for its rigorous development process[4], besides being the only one that covers the perception of vocal symptoms[3].

Thus, the purpose of this study was to identify the relationship between the type of dysphonia, the self-assessed level of vocal deviation, and the presence of vocal symptoms.

METHODS

This study was approved by the Research Ethics Committee of Universidade Federal de São Paulo (UNIFESP) under protocol no. 1.946/10, and all participants signed an informed consent form.

The study included 164 individuals (58 males and 106 females, mean age 42.89 years) with a diagnosis of dysphonia, divided into three groups according to the type of dysphonia[2]: 87 with functional dysphonia (FD), 35 with organofunctional dysphonia (OFD), and 42 with organic dysphonia (OD). All subjects completed a translated, culturally adapted, and validated Brazilian Portuguese version of the protocol Voice Symptom Scale – VoiSS, entitled *Escala de Sintomas Vocais* (ESV)[5,6], a questionnaire of 30 questions divided into three domains: Impairment (15 questions), Emotional (8), and Physical (7). Each question is scored from zero to four, according to frequency: never, rarely, sometimes, often, and always, with scores calculated by simply adding the points. The higher the scores in this protocol, the greater the perception of the general level of voice alteration with regard to impairment on use of voice, emotional reactions, and physical symptoms. Besides the ESV, all subjects self-rated their voices as excellent, very good, good, fair, or poor (one to five, respectively).

For statistical analysis, we adopted a significance level of 5% and the analysis of variance parametric test was used in addition to the Pearson correlation test.

RESULTS

Differences were found in the ESV scores according to the type of dysphonia in the mean results for Impairment, Emotional, and Total scores, which were not observed in the Physical domain. The mean values of the ESV scores Impairment, Emotional, and Total were higher for OD, followed by OFD, and finally, FD. In the Physical domain, there was no difference in scores according to the types of dysphonia (Table 1).

Table 1. Mean values of Impairment, Emotional, Physical, and Total scores of the *Escala de Sintomas Vocais* of the functional, organofunctional, and organic dysphonia groups

Scores of the *Escala de Sintomas Vocais*	Mean	Median	Standard deviation	Minimum value	Maximum value	n	Confidence interval	p-value
Impairment								
FD	28.13	28.00	10.11	9	56	87	2.13	
OFD	30.06	30.00	9.87	10	46	35	3.27	0.007*
OD	34.48	37.00	12.08	9	58	42	3.65	
Emotional								
FD	7.66	6.00	6.21	0	31	87	1.30	
OFD	8.63	7.00	7.80	0	28	35	2.59	0.011*
OD	11.98	9.00	9.61	0	32	42	2.91	
Physical								
FD	10.28	9.00	4.66	0	21	87	0.98	
OFD	11.29	12.00	3.81	3	20	35	1.26	0.541
OD	10.14	9.00	6.41	0	26	42	1.94	
Total								
FD	46.06	44.00	16.16	18	99	87	3.40	
OFD	49.97	51.00	16.21	20	88	35	5.37	0.010*
OD	56.60	56.50	23.10	21	110	42	6.98	

*Significant values (p≤0.05) — analysis of variance (ANOVA)

Caption: FD = functional dysphonia group; OFD = organofunctional dysphonia group; OD = organic dysphonia group

There are significant positive correlations between the Impairment, Emotional, and Total scores of the ESV with the vocal self-assessment: the worse the self-assessment, the higher the score in the ESV, indicating greater perception of vocal symptoms. The values of correlations are regular, close to the range of good correlations (Table 2).

Table 2. Correlation between the scores of the *Escala de Sintomas Vocais* and vocal self-assessment

Scores of the *Escala de Sintomas Vocais*	Correlation *Escala de Sintomas Vocais* x vocal self-assessment	
Impairment	Correlation	56.6%
	p-value	<0.001*
Emotional	Correlation	53.8%
	p-value	<0.001*
Physical	Correlation	2.3%
	p-value	0.770
Total	Correlation	56.0%
	p-value	<0.001*

*Significant values (p≤0.05) — Pearson correlation test

DISCUSSION

An OD may favor the presence and perception of vocal symptoms due to the impairment of the glottal source, vocal tract, and stability in voice production, commonly present in cases of cancer[7], gastroesophageal reflux[8], papillomatosis[9], vocal fold paralysis[10], and laryngeal dystonia[11], which can generate greater effort during phonation[12], increasing the perception of symptoms, especially in the Impairment domain. In addition, because the vocal problem in OD is independent of the habits and behaviors of the individual, the emotional consequences may be more prominent. However, the OFD or FD, with greater or lesser participation of the vocal behavior, usually represent longtime voice alteration, and symptoms, although common, may be less referred due to a process of adaptation and habituation[2]. Dysphonia of different etiologies are a challenge for Speech-Language Pathology and Audiology. Understanding the differences between etiological categories is essential to good clinical practice. The common trait for all types of voice problem is the presence of physical symptoms[13], such as pain or discomfort in the throat[14], issues that are addressed in questions in the Physical domain of the ESV (e.g., "Do you feel something stuck in your throat?" or "Do you have a lot of fluid or phlegm in the throat?"[5,6]), usually referred to by individuals with vocal alterations of any nature.

CONCLUSIONS

Individuals with OD reported greater perception of vocal symptoms, followed by subjects with OFD and, finally, those with FD. Overall, patients with dysphonia presented physical vocal symptoms, regardless of the type of dysphonia. Finally, there are direct correlations between the Impairment, Emotional, and Total scores of the ESV and the vocal self-assessment.

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