DOI: 10.1590/2317-1782/20140000339

Brief Communication

Comunicação Breve

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Vocal self-assessment: relation with the type of instrument, gender, age, and profession in individuals without vocal complaints

Autoavaliação vocal: relação com o tipo de instrumento utilizado, gênero, faixa etária e profissão em indivíduos sem queixas de voz

Keywords

Voice
Voice Disorders
Quality of Life

ABSTRACT

Objective: To obtain the vocal self-assessment rates of individuals without vocal complaints and relate them to gender, occupation, and age range. **Methods:** This is an observational, analytical, and cross-sectional study. In this study, 601 individuals without vocal complaints, 241 men and 360 women, aged between 18 and 59 years (mean of 30.1 years) were included. The individuals were divided into following age groups: 18–29 years (n=353; 58.7%), 30–44 years (n=159; 26.5%), and 45–59 years (n=89; 14.8%); 136 individuals (22.6%) were voice professionals and 465 (77.4%) were nonprofessionals. The individuals answered a questionnaire with identification data and the protocols Voice-Related Quality of Life (V-RQOL), Voice Handicap Index (VHI), and Voice Activity and Participation Profile (VAPP). The data were statistically analyzed. **Results:** Mean scores obtained in the V-RQOL, VHI, and VAPP were 95.5, 5.37, and 3.06, respectively. If we transfer these values to the base 100, differences were found in the scores of the VHI and VAPP. Women presented significantly lower scores in the V-RQOL and VHI. Moreover, there were no differences in the mean scores obtained by the different age groups. Regarding professional vocal use, there were differences in the VHI and VAPP, and the "nonprofessionals" presented lower VHI than professionals. **Conclusion:** The type of the instrument, gender, and profession variables can influence the vocal self-assessment results.

Descritores

Voz
Distúrbios da Voz
Qualidade de Vida

RESUMO

Objetivo: Obter os índices de autoavaliação vocal de indivíduos sem queixas de voz e relacioná-los às variáveis referentes a gênero, profissão e faixa etária. **Métodos:** Estudo observacional, analítico e transversal. Participaram 601 indivíduos sem queixas vocais, sendo 241 homens e 360 mulheres, com idades entre 18 e 59 anos (média de 30,1 anos). As faixas etárias foram subdivididas em: 18 a 29 anos (n=353; 58,7%); 30 a 44 anos (n=159; 26,5%); e 45 a 59 anos (n=89; 14,8%). Participaram 136 (22,6%) profissionais e 465 (77,4%) não profissionais da voz. Os indivíduos responderam a um questionário com dados de identificação e aos protocolos Qualidade de Vida e Voz (QVV), o Índice de Desvantagem Vocal (IDV) e o Perfil de Participação e Atividades Vocais (PPAV). Os dados foram analisados estatisticamente. **Resultados:** Os escores médios totais obtidos nos protocolos QVV, IDV e PPAV foram de 95,5, 5,4 e 3,1, respectivamente. Transferindo esses valores para a base 100, IDV e PAVV diferenciam-se quanto aos escores obtidos. Mulheres apresentaram valores significativamente mais baixos no QVV e IDV. Além disso, não houve diferença nos escores médios obtidos nas diferentes faixas etárias estudadas. Quanto à utilização da voz profissional, houve diferenças no IDV e PPAV, sendo que os "não profissionais" apresentaram menor desvantagem vocal quando comparados aos profissionais. **Conclusão:** O tipo de instrumento utilizado e as variáveis gênero e profissão podem influenciar no resultado da autoavaliação vocal.

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Received: 08/03/2012

Accepted: 02/20/2013

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Conflict of interests: nothing to declare.

INTRODUCTION

Understanding the impact of dysphonia on the life of a person can provide data about the real need for the speech–language therapeutic process. Nowadays, three vocal self-assessment protocols are widely used in Brazil: the Voice-Related Quality of Life (V-RQOL)[1], the Voice Handicap Index (VHI)[2], and the Voice Activity and Participation Profile (VAPP)[3].

Several studies involving these instruments have been conducted[4-8]. Even though the expected values of the V-RQOL, VHI, and VAPP for individuals with healthy voices[9] have been mentioned, the relationship between these values and some sociodemographic variables can be further investigated.

Knowing more about the results of these protocols in individuals without vocal complaints can contribute with clinical reasoning and with the design of the speech–language pathology and audiology work with the patient with dysphonia. Therefore, the objective of this study was to obtain reference vocal self-assessment values in individuals without vocal complaints and relate them to gender, age group, and professional use of the voice.

METHODS

This is an observational, descriptive, and cross-sectional study. The project was approved by the research ethics committee of Universidade Estadual do Centro-Oeste (UNICENTRO) under protocol number 04715/2009.

In this study, 601 individuals were included, being 241 men and 360 women, aged between 18 and 59 years (mean age of 30.1 years). The individuals were subdivided into following age groups: 18–29 years (n=353; 58.7%), 30–44 years (n=159; 26.5%), and 45–59 years (n=89; 14.8%). Among the participants, 136 (22.6%) were voice professionals and 465 (77.4%) were nonprofessionals. Voice professionals were those who depended on the voice to perform their professional activities. Data were collected in public locations, with active search for participants.

Inclusion criterion was the self-classification of voice as being "regular," "good," or "excellent". However, individuals who reported any complaints regarding the voice, in the past or in the present time, were excluded. To obtain such data, before applying the identification questionnaire, individuals answered three questions: "Do you have any complaints with regard to your voice?"; "Have you had voice-related problems in the past or do you have any nowadays?"; "How do you classify your voice?" (very bad; bad; regular; good; excellent). If the person answered "yes" for any of the two first questions and/or "very bad" or "bad" for the third question, he/she was automatically excluded from the study and did not proceed to the following step.

All the individuals answered a questionnaire with identification data and the protocols V-RQOL, VHI, and VAPP, applied by the four first authors of this study. In the V-RQOL and VHI, the researchers read the sentences and the response options, as well as the score on the protocol after the participant made a choice. In the VAPP, the researchers read the sentence, advised the participant in relation to the score in the Analog–Visual Scale (AVS), and requested them to score themselves. No interpretations were made regarding the content of the sentences.

Results were calculated according to the proposal of each protocol, being statistically analyzed. The Mann-Whitney test was used to compare the scores of the protocols with those of the other studied variables.

Considering that the maximum scores of protocols are different to compare the instruments, the results of the VHI (base 120) and the VAPP (base 280) were transformed in a base of 100 by a simple cross-multiplication. Besides, for such an analysis, because the V-RQOL is a protocol that analyzes quality of life (i.e., the higher the scores, the better the results), the final total score was subtracted from the maximum score of the protocol (100 – total obtained score). Therefore, the loss of quality of life can be compared to voice handicap and limitation measured by the two other protocols (VHI and VAPP). The Friedman analysis of variance test was used to compare the results obtained in the three instruments. For all of the analyses, a 0.05 significance level was adopted.

RESULTS

The total mean scores obtained in the V-RQOL, VHI, and VAPP protocols were analyzed, as well as the scores from the different domains assessed by each of them (Table 1). By transferring the VHI and VAPP scores to the base of 100 (once these protocols have different total values) and by inverting the V-RQOL values (because this is a protocol approaching the quality of life), we observed that individuals self-reported better conditions in the VAPP than in the V-RQOL and VHI (Table 2).

Besides, relations between total mean scores obtained in the three protocols and the variables regarding gender, age group, and professional use of the voice were observed. Women presented significantly lower values in the V-RQOL and VHI (Table 3). There was no difference in the mean scores obtained in the different age groups (Table 4). Those who were not voice professionals presented lower voice handicap when compared to voice professionals (in the VHI and VAPP) (Table 5).

Table 1. Descriptive statistics of the protocols Voice-Related Quality of Life, Voice Handicap Index, and Voice Activity and Participation Profile among individuals without vocal complaints

Protocol	Domain	Mean	Median	Standard deviation
V-RQOL	Physical	94.3	95.8	8.5
	Socioemotional	98	100	6.5
	Total	95.5	97.5	8.7
VHI	Emotional	1.2	0.0	2.2
	Functional	2.0	1.0	2.7
	Organic	2.2	1.0	3.0
	Total	5.4	4.0	6.9
VAPP	Self-perception	0.2	0.0	0.4
	Effects at work	0.4	0.0	0.8
	Effects on daily communication	1.4	0.0	3.6
	Effects on social communication	0.4	0.0	1.1
	Effects on emotion	0.8	0.0	2.1
	Total	3.1	0.0	6.9
	Profile of limitation in activities	0.3	0.0	0.8
	Profile of restricted participation	0.2	0.0	0.6

Caption: V-RQOL = Voice-Related Quality of Life; VHI = Voice Handicap Index; VAPP = Voice Activity and Participation Profile

Table 2. Comparison of mean scores obtained in the protocols Voice-Related Quality of Life, Voice Handicap Index, and Voice Activity and Participation Profile, standardized for the base of 100*

Protocol	Mean of positions	Sum of positions	Mean	Standard deviation	p-Value
V-RQOL	2.11	1.268	4.53	6.11	
VHI	2.31	1.393.5	4.71	5.73	0.000**
VAPP	1.57	944.5	1.09	2.46	

*V-RQOL values were subtracted from the total (100) to be compared to other scores of the other protocols; **p<0.05; Friedman's ANOVA test.
Caption: V-RQOL = Voice-Related Quality of Life; VHI = Voice Handicap Index; VAPP = Voice Activity and Participation Profile

Table 3. Relation between scores obtained in the protocols Voice-Related Quality of Life, Voice Handicap Index, and Voice Activity and Participation Profile

	V-RQOL	VHI	VAPP
Female			
Mean	95.1	6.0	3.1
Median	97.5	4.0	0.1
Standard deviation	8.6	7.3	7.2
Male			
Mean	96.0	4.4	3.0
Median	100	3.0	0.0
Standard deviation	8.9	6.1	6.4
p-value	0.003*	0.001*	0.989

*p<0.05; Mann-Whitney test
Caption: V-RQOL = Voice-Related Quality of Life; VHI = Voice Handicap Index; VAPP = Voice Activity and Participation Profile

Table 4. Relationship between the scores obtained in Voice-Related Quality of Life, Voice Handicap Index, and Voice Activity and Participation Profile and the age group variable

Age group (years)	V-RQOL	VHI	VAPP
18–29			
Mean	94.9	5.8	3.2
Median	97.5	4.0	0.0
Standard deviation	9.2	7.3	7.7
30–44			
Mean	96.8	4.7	2.4
Median	100	3.0	0.0
Standard deviation	4.8	6.2	4.6
45–59			
Mean	95.1	4.9	3.6
Median	100	3.0	0.6
Standard deviation	11.3	6.3	6.7
p-value	0.061	0.176	0.352

p<0.05; Mann-Whitney test
Caption: V-RQOL = Voice-Related Quality of Life; VHI = Voice Handicap Index; VAPP = Voice Activity and Participation Profile

Table 5. Relation between scores obtained in the protocols Voice-Related Quality of Life, Voice Handicap Index, and Voice Activity and Participation Profile and the profession variable

	V-RQOL	VHI	VAPP
Voice professionals			
Mean	94.9	6.0	3.0
Median	97.5	5.0	1.2
Standard deviation	7.1	6.1	6.2
Nonprofessionals			
Mean	95.6	5.2	3.1
Median	97.5	3.0	0.0
Standard deviation	9.1	7.8	7.1
p-value	0.078	0.008*	0.034*

*p<0.05; Mann-Whitney test
Caption: V-RQOL = Voice-Related Quality of Life; VHI = Voice Handicap Index; VAPP = Voice Activity and Participation Profile

DISCUSSION

With regard to the mean scores obtained in the three protocols, values were close to those pointed out in a previous study[9]. The reasons why the results in the VAPP were better than those in the VHI and V-RQOL need to be investigated. One hypothesis is that the lack of familiarity to answer questions in the AVS has led to a tendency for the person to automatically mark the left extremity of the scale, which indicates "normality."

In the relationship between genders, women presented lower mean scores. However, there were no other studies to corroborate this finding. However, we know that, generally, women are more concerned about their own health[10], and that can be related to the observed difference, once subjects in both groups did not present with vocal complaints.

Adult individuals presented similar scores in the three protocols, regardless of the age group. This result is not in accordance with a study conducted with individuals with dysphonia, which observed that people aged 20–29 years tend to have a more positive self-evaluation than older individuals[11].

Voice professionals presented worse scores in the VHI and VAPP protocols, which shows that, even without complaints, this group seems to be more concerned about vocal health[12,13]. Besides, these two instruments focused on the subject's self-perception with regard to professional activities when compared to the V-RQOL. In a recent study comparing the scores obtained by teachers with dysphonia in the three protocols[8], the authors concluded that some questions in the VAPP were not contemplated in the other protocols, therefore, it can present more interesting results regarding the voice professionals.

In clinical practice, many factors seem to interfere in the vocal self-assessment of the patient. So, we suggest the conduction of new studies that analyze other variables, such as schooling and socioeconomic status.

CONCLUSION

The type of instrument used and the variables regarding gender and profession can influence the result of vocal self-assessment among individuals.

**SD, BB, and JW collected data; all of the authors participated by analyzing data and writing the article, and gave similar contributions to the conduction of the study.*

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