Assessment of Grade of Dysphonia and Correlation With Quality of Life Protocol

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Summary: Objective. The main objective of this study is to check the correlation between vocal self-assessment and results of the Voice-Related Quality of Life (V-RQOL) protocol, and whether there is a correlation between perceptual vocal assessment made by voice therapists and the results from the V-RQOL protocol.
Study Design. The study included 245 subjects with vocal complaints. This was a prospective analytical clinical study.
Methods. Vocal perceptual assessment of each subject with dysphonia was made by three voice therapists, followed by self-assessment made by the subjects themselves, and the application of the V-RQOL protocol.
Results. The results have shown poor level of agreement between vocal assessment made by the voice therapists and self-assessment made by the subjects. The statistical analysis indicated that the results of V-RQOL protocol showed significant correlation with the vocal assessment made by the voice therapists and the self-assessment by the subjects.
Conclusions. The agreement between the assessments was low and variable; age, gender, professional voice use, and clinical laryngoscopic diagnosis did not influence the agreement level. Protocol V-RQOL is sensitive to vocal assessment made by the voice therapists and self-assessment made by the patient.
Key Words: voice–dysphonia–quality of life–vocal assessment–V-RQOL.

INTRODUCTION

The communication performance of different subjects is directly related to vocal production. Vocal disorder, or dysphonia, is a common condition in our days, a topic already widely studied.[1,2] Among the results of these studies, the authors have shown evidence that dysphonia impacts quality of life.

Voice is possibly one of the most commonly heard sounds in life. However, historically, assessing the grade of vocal disorder has been a controversial task.[3–11] Speech and voice therapists and otolaryngologists have relied on subjective and objective measures to assess and classify the severity of vocal disorders.

The oldest and possibly the most widely used method of vocal assessment is perceptual-auditory analysis.[7] The intention of perceptual analysis is to document, describe, and quantify vocal deviations.

Among the used scales, the grade of dysphonia, roughness, breathiness, asthenia, and strength (GRBAS) perceptual scale has been used and well accepted in international studies.[9,10] The results have indicated that the most reliable parameter is "G," grade of dysphonia, as it presents the highest interobserver agreement.[7,9,12–14]

However, perceptual-auditory assessment classifies severity of vocal disorders but does not address the impact the vocal disorder has on quality of life. The impact that the disorder has on quality of life may go beyond the level of perceived hoarseness. In practical terms, two subjects with similar dysphonia may experience different impacts on their quality of life, depending on their vocal needs.

The impact that dysphonia has on the life of subjects with dysphonia has been recognized and valued in voice treatment. Different protocols have been validated to explore emotional, physical, and social conditions resulting from dysphonias. However, the sensitivity and reliability of these instruments are still to be tested.[9,15–21]

Among the instruments indicated as being the most comprehensive in assessing the implications of dysphonia on quality of life is the Voice-Related Quality of Life (V-RQOL), validated in the Brazilian version as *Qualidade de Vida e Voz* (Quality of Life and Voice).[15] It is practical, reliable, and sensitive to different domains.[12–15]

A patient with dysphonia generally seeks treatment when he or she notices a change or alteration in his or her own voice. Self-assessment of vocal quality translates the way in which a person perceives his or her own voice and has been recognized as a relevant tool in several studies of vocal quality.[14,18,22] It is important that the clinician recognizes dysphonia and its clinical significance to the patient as well as its relevance in the patients' social and emotional life. A subject with dysphonia may report impaired communication even though the clinician's subjective voice perception does not consider the dysphonia as severe.

The "general impression" or grade of dysphonia, the "G" in the GRBAS scale, is the most reproducible parameter of the scale and is not very dependent on the experience of the person performing the vocal assessment. The relation between the speech therapists' assessment and the patients' self-perception and/or assessment is unknown. Therapeutic choices and expectations and consequently the success of the rehabilitation process may be directly influenced by the patients' perception. This is, nowadays, a challenge for researchers on communication and voice fields.

The main objective of this study is to check the correlation between vocal self-assessment and results of V-RQOL protocol, and whether there is a correlation between perceptual vocal

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assessment made by voice therapists and the results from the V-RQOL protocol.

METHODOLOGY

This was a prospective analytical clinical study. The research project was previously approved by the Research Ethics Committee of Faculdade de Ciências Médicas under protocol number 261/2005.

Vocal perceptual assessment of each subject with dysphonia was made by three voice therapists, followed by self-assessment made by the subjects themselves, and the application of V-RQOL protocol. Data were collected from January 2006 to March 2008.

Subject selection

The study included 245 subjects with vocal complaints, initially assessed at the laryngoscopy outpatient unit of Discipline of Otolaryngology, Faculdade de Ciências Médicas, Universidade Estadual de Campinas. After being submitted to medical assessment and laryngoscopy with flexible nasopharyngolarygoscopy Ferrari Medica (brand: ZAP-type CAMVMNTSC class BF Ferrari Medical and 250-watt Halogen JPN), subjects were immediately sent to the vocal rehabilitation unit before they were informed about laryngeal diagnosis or received any vocal education.

The sample included subjects presenting vocal complaints for at least 2 months and with any benign abnormalities observed through laryngeal endoscopic examination. The study excluded subjects with history of central neurologic disorders, those previously submitted to vocal rehabilitation, submitted to laryngeal surgery, with auditory complaints, professional voice users in arts and performance, and subjects younger than 18 years.

Procedures

At the rehabilitation unit, vocal assessment was performed by three certified speech therapists specializing in voice disorders with large experience in vocal evaluation and rehabilitation, with more than 10 years of experience and familiar with the GRBAS perceptual scale. In this group, each voice therapist judged the voice individually, according to the personal impression of the vocal disorders presented by the assessed subject using GRBAS perceptual scale. The vocal quality analysis was made in acoustically favorable environment, without background noise. After the assessment, results were compared, and the dysphonia grade (G of GRBAS perceptual scale) was determined by consensus by the three examiners.

The assessment was made based on about 5 minutes of spontaneous speech, describing the vocal complaint, number counting from 1 to 20, and prolonged /a/.

When necessary, the voice therapists interfered by asking brief questions to encourage spontaneous speech for 5 minutes. The GRBAS perceptual scale comprised five parameters to assess quality of life. For each assessed parameter, scores 0, 1, 2, or 3 were given to define the level of abnormality. Zero meant normal voice or absence of dysphonia, 1 meant slightly affected voice, 2 was moderately affected voice, and 3 was severely affected voice. In the GRBAS assessment made by the voice therapists, only parameter G, which corresponds to grade of dysphonia, was used considering the respective intervals of classification 0, 1, 2, and 3.

Next, the patient was asked to classify his or her own voice:

- How do you judge your voice?
- Normal or without any abnormalities (0);
- Slightly affected compared with normal voice (1);
- Moderately affected compared with normal voice (2), or
- Severely affected compared with normal voice (3).

The four possibilities were presented orally by the examiner to each subject, who was asked to select only one of the options that corresponded to his or her own voice.

After vocal assessments determined by consensus by the voice therapists and the vocal self-assessments made by the subjects with dysphonia, the 245 subjects of the study answered the V-RQOL protocol. The protocol comprises 10 questions, which starts as follows: "because of my voice, how much of a problem is this?"

The subjects had to select from a list of five alternatives (0–4), which respectively corresponded to:

- 0, it never happens, it is not a problem;
- 1, it seldom happens, it is rarely a problem;
- 2, it sometimes happens and it is a moderate problem;
- 3, it happens a lot and it is almost always a problem, or
- 4, it always happens and it is indeed a bad problem.

The questions explore the vocal disorder associated with life conditions in three domains: first, related with social-emotional conditions (four questions); second, related with physical conditions (six questions); and third, corresponds to the sum of both previous ones, called overall domain. The V-RQOL protocol results in scores that range from 0 (zero) to 100 (one hundred), 0 (zero) being the worst quality of life and 100 being the best quality of life.

After completing the questionnaire, patients were asked whether they were professional voice users and for how long do they use their voice in daily activities. Professional voice users were those who reported that voice was a working tool to them, without which they would not be able to perform their professional activities, and those who used it for at least 4 hours a day.

The information about gender, age, and clinical laryngoscopic diagnosis was extracted from patient records.

Variable analyses

The authors have checked whether the voice assessments made by the examiners and the vocal self-assessments made by the subjects with dysphonia were in agreement, and whether there was a correlation between the key variables in the study: gender, age, profession, and clinical laryngoscopic diagnosis (Table 1).

For the variable profession, we have considered both professional and nonprofessional voice users. The group of professional voice users included teachers, journalists, telemarketing operators, shop floor salespeople, and religious preachers. The other professions included housewives, cooks, retired people, clerks,