PATIENT'S GENERAL PERCEPTION OF VOICE THERAPY OUTCOME

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Background – There are various voice treatment outcomes measures, for example: clinician-based visual-perceptual rating of laryngostroboscopic parameters, clinician-based auditory-perceptual rating of specific aspects of the voice sound, patient-based perception of vocal functioning, acoustic voice signal measures, aerodynamic analyses of the vocal airstream, and glottal dynamics measures. Typically, these methods are applied before therapy to determine baseline measures, as well as during and after voice therapy to determine if vocal anatomy / physiology / pathology / sound / well-being has changed over the course of treatment/time. Associations between these methods have been examined in a multitude of studies.[1],[2],[3],[4],[5] However, literature on how well these items reflect the patients' appreciation over his/her own change in voice in general, is still scarce.[6] The present study therefore associated the following voice treatment outcomes measures with subjective, patient-based and bidirectional ratings of overall change in voice (i.e., OCV; on a continuous scale with 0 cm = same as baseline, –10 cm = maximally worsened, and +10 cm = maximally improved): perceived overall dysphonia severity by the clinician (i.e., grade or G), Acoustic Voice Quality Index (i.e., AVQI), Dysphonia Severity Index (i.e., DSI) and total score of the Voice Handicap Index (i.e., VHI_T).

Methods – For this retrospective cohort investigation, our voice clinic database was first queried to find those patient records in which OCV and the other four study variables (i.e., G, AVQI, DSI, and VHI_T) were available both pre and post behavioral voice therapy by a speech-language pathologist. Second, patients below 18 years of age were excluded, as were patients who received other (combined) treatment (e.g., phonomicrosurgery, laryngoplasty, and injection). The actual study group consisted of thirty-five subjects, with twenty-nine women (mean age = 46.4 years, ranging between 19 and 86) and six men (mean age = 55.9 years, ranging between 33 and 77). Post minus pre data (i.e., Δ) were calculated. Consequently, one Spearman rank-order correlation coefficient (i.e., r_S) between OCV and ΔG, as well as three Pearson product-moment correlation coefficients (i.e., r_P) between OCV and ΔAVQI, ΔDSI and Δ VHI_T were computed to assess the proportional relationship between OCV and the other established outcomes measures. Furthermore, stepwise multiple regression analysis was applied to explore the added value of combining weighted clinical measures in appraising OCV.

Results – Pre- to post-treatment differences for this limited set of clinical variables showed to correlate fairly (r_P=0.495 for ΔAVQI, and r_P=0.467 for ΔDSI) to moderately (r_P=-0.548 for ΔVHI_T, and r_S=-0.641 for ΔG) with OCV. The stepwise multiple regression-based combination 3.909–(1.479*ΔG)–(0.047*ΔVHI_T) yielded r_P=0.675 with OCV. However, this correlation did not differ significantly from the correlation between OCV and ΔG when tested with Fisher's z-r transformation.

Discussion – The results of this study show that only parts of the patient's own overall perception of voice therapy outcome (i.e., OCV) can be assessed by clinical voice measures such as G, AVQI, DSI and VHI-T. Possible explanations and points of discussion can be addressed. Patients may weight specific voice-related sensations and physical phenomena different than clinicians do based on their sole voice measures. This includes the VHI_T, an instrument specifically developed to assess patient-based perceptions. Perceived dysphonia severity accounts for most of the variance in OCV. However, adding VHI_T does not yield additionally explained variance in OCV. With OCV hypothesized to be the ultimate benchmark, further development of a valid tool is warranted.

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