Brief Communication

Comunicação Breve

Voice Activity and Participation Profile – VAPP administered in two different scales of response

Aplicação do Protocolo de Participação e Atividades Vocais – PPAV em duas diferentes escalas de resposta

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Keywords

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ABSTRACT

Purpose: The purpose of this study was to compare two types of rating scales using the Voice Activity and Participation Profile (VAPP) self-assessment questionnaire, in order to check their influence on the results obtained by the same instrument. **Methods:** Participants were 32 individuals with vocal complaints of both genders, with ages between 15 and 58 years. All subjects answered the vocal self-assessment questionnaire VAPP using with two different rating scales, randomly presented: an 11-point numerical scale (NS) and a 10-cm long (or 100 points) visual analogue scale (VAS). Response time was registered and there was a two-week interval between applications. At the end of the task, participants were asked about the difficulties found in the task to answer each rating scale version, and also to indicate their preference. **Results:** The mean VAPP scores were similar in both scales. Differences were found only in partial scores, referring to Activity Limitation and Effects on Emotion, with higher mean score in the numerical scale (p=0.008), however with no clinical impact. The order in which the scales were answered did not affect the results obtained, except for the aspect Effects on Social Communication, which presented lower scores with the visual analogue scale in the group of subjects that answered the numeric scale first (p=0.049). Finally, most participants answered faster to the questionnaire when using the numerical scale (p=0.003). **Conclusion:** The scores obtained in the VAPP by the two different rating scales were similar. The questionnaire with the numeric scale takes less time to be answered, which may be useful for clinical practice.

Descritores

Voz
Auto-avaliação diagnóstica
Disfonia
Escalas
Atividades cotidianas
Questionários

RESUMO

Objetivo: O presente estudo teve como objetivo comparar duas modalidades de marcação de respostas do questionário Perfil de Participação e Atividades Vocais (PPAV), para investigar a influência das diferentes modalidades nos resultados produzidos por um mesmo protocolo. **Métodos:** Participaram 32 indivíduos com queixa vocal, de ambos os gêneros, entre 15 e 58 anos, que responderam o protocolo de autoavaliação vocal PPAV em duas escalas de respostas, uma numérica com 11 pontos (EN) e outra analógico-visual de 10 cm de comprimento ou 100 pontos (EAV), em ordem casual de apresentação. O tempo de resposta foi registrado e houve um intervalo de duas semanas entre as aplicações. Ao término da tarefa, os participantes foram questionados sobre dificuldades encontradas para responder o protocolo nas duas versões de escala, indicando também sua preferência por uma delas. **Resultados:** A média dos escores obtidos foi semelhante em ambas as escalas. Houve diferença apenas em escores parciais referentes à Limitação de Atividades e no aspecto Efeitos na Emoção, com pontuação média maior na escala numérica (p=0,008), porém sem impacto clínico. A ordem de aplicação das escalas não interferiu nas respostas obtidas, com exceção do aspecto Efeitos na Comunicação Social, que quando respondido na escala analógico-visual produziu valores menores no grupo de sujeitos que respondeu inicialmente a escala numérica (p=0,049). Finalmente, a maior parte dos participantes respondeu mais rapidamente ao questionário com a escala numérica (p=0,003). **Conclusão:** Os escores obtidos por meio de marcação de resposta com EN e EAV, para o PPAV, são semelhantes, sendo que o questionário com a escala numérica para resposta é respondido em menor tempo, o que pode favorecer sua utilização na prática clínica.

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INTRODUCTION

The self-perception of how much a health problem affects quality of life provides important information and is essential for the adherence to therapeutic processes[1]. Therefore, self-assessment instruments, usually questionnaires, are developed to measure the patient's opinion about a certain aspect[2]; nevertheless the practicability during administration must be assured[3-5].

There are two main modalities of rating those instruments: the visual-analogue scale (VAS) and the numerical scale (NS)[6]. However, there are no evidences about which one of them is the most appropriate[7]. The VAS consists of a straight line, in which a point has to be placed by the respondent. The result is not straight forward, because the rating has to be measured afterwards. On the other hand, the NS has specific pre-determined points separated by equal interval. The respondent must chose from one of the points provided[6,8].

The easiness of the NS is the simple adding up of the responses, yet it may influence the respondents answer by the influence of personal preferences. Some individuals, for instance, do not like the number zero and others may have a specific favorite number[9]. Therefore, the relationship with cognitive and sensorial factors must be taken into consideration[5,10].

Even though the VAS provides a greater sensorial discrimination and is considered the most indicated for evaluating subjective aspects[11,12], demands an additional operationalization for obtaining the scores, which may demand more time and limit its use for the clinical routine[4]. The decision about what modality is more appropriate for using in clinical and research settings must be based on systematic evaluation of validity and reliability of the different scale modalities[9,13].

The Voice Activity and Participation Profile – VAPP[14] is a modern instrument that was validated into the Brazilian Portuguese[8] and has 28 items that investigate five aspects: self-perceived severity of voice problem; effect on job; effect on daily communication; effect on social communication; effect on emotion. The questionnaire also provide two extra scores: Activity limitation and Participation restriction. This questionnaire was originally developed to be answered with a 100-unit VAS[14]. A previous study carried out in Hong Kong that investigated the difference between results provided by the two types of scale, showed similar outcome[11].

The present study had the objective of comparing these two types of rating scales using the VAPP self-assessment questionnaire in order to check the influence of them on the results obtained by the same instrument.

METHODS

A total of 32 individuals with dysphonia participated in this study, 22 were female and 10 male, none of them had been submitted to voice treatment, they belonged to middle social-economic class and had elementary school as a minimum educational level. Mean age of participants was 32 years and 8 months (ranging from 15 to 58 years). The present study

Table 1. Mean VAPP scores obtained by the numerical and visual-analogue scales

Variables	Mean	SD	Minimum	Maximum	p-value
Total score					
Numerical scale	110.69	59.89	27.00	204.00	0.063
Visual-analogue scale	102.67	56.31	27.00	192.00	
Activity limitation					
Numerical scale	44.94	22.55	10.00	83.00	0.033*
Visual-analogue scale	41.16	20.46	10.00	76.80	
Participation restriction					
Numerical scale	34.72	21.40	5.00	73.00	0.422
Visual-analogue scale	32.93	20.20	5.30	70.50	
Self-perceived severity of voice problem					
Numerical scale	5.28	2.67	1.00	10.00	0.397
Visual-analogue scale	5.07	2.53	1.00	10.00	
Effect on job					
Numerical scale	14.00	8.41	3.00	32.00	0.782
Visual-analogue scale	13.88	8.86	1.00	30.80	
Effect on daily communication					
Numerical scale	44.44	23.46	8.00	86.00	0.307
Visual-analogue scale	41.53	22.23	8.00	77.00	
Effect on social communication					
Numerical scale	15.91	11.23	0.00	36.00	0.126
Visual-analogue scale	14.91	10.66	0.00	34.00	
Effect on emotion					
Numerical scale	31.06	19.83	4.00	70.00	0.008*
Visual-analogue scale	27.24	18.62	4.10	68.10	

* Significant values (p<0.050) – Wilcoxon Signed Rank test

Note: SD = standard deviation

project was approved by the Ethics Committee of the Centro de Estudos da Voz (protocol #2016/08). All participants signed the Informed Consent.

Participants answered randomly the VAPP with two different rating scales: a 11-point numerical scale and a 10-cm long visual-analogue scale (100 units) with an interval of a week between administrations. Out of 32 individuals, 50% responded firstly to the NS (NS before VAS group). The response time for each of the rating scale modality was recorded in seconds. Participants were also inquired about their preference between the two types of scales and which of them was less degree of difficult to answer.

Findings were statistically assessed (SPSS 17.0) and the significance lever adopted was 5% (0.050). The Wilcoxon signed rank test was utilized to compare both scales. The Mann-Whitney test was utilized to compare the administration order of the questionnaires and the Exact Fisher test analyzed the categorical variables: preference for scale type, smaller rating time and smaller degree of rating difficulty.

RESULTS

Mean total scores were similar with both rating scales. There was only significant difference for the Activity Limitation and Effects on Emotion scores with the NS having the highest means (Table 1). The order of the questionnaires administration did not influence the results, except for the aspect Effects on Social Communication (p=0.049), which had lower scores when answered with the VAS by the "NS before VAS" group (mean 11.06) compared to the "VAS before NS" group (mean 18.77).

Preference for scale type (p=0.166) and degree of rating difficulty (p=0.500) did not have significant differences. However, the majority of the participants answered faster to the questionnaire with the numerical scale (mean of 123.2 seconds for NS and 217.6 seconds for VAS; p=0.003) (Table 2).

Table 2. Preference for scale type, rating time and degree of rating difficulty according to the order of questionnaires administration

Group		Preference		Total
		VAS	NS	
NS before VAS	n	1	15	16
	%	6.3	93.8	100.0
VAS before NS	n	4	12	16
	%	25.0	75.0	100.0
Total	n	5	27	32
	%	15.6	84.4	100.0
p-value=0.166				
Group		Lesser rating time		Total
		VAS	NS	
NS before VAS	n	7	9	16
	%	43.8	56.3	100.0
VAS before NS	n	0	16	16
	%	0.0	100.0	100.0
Total	n	7	25	32
	%	21.9	78.1	100.0
p-value=0.003*				
Group		Lesser rating difficulty		Total
		VAS	NS	
NS before VAS	n	11	5	16
	%	68.8	31.3	100.0
VAS before NS	n	12	4	16
	%	75.0	25.0	100.0
Total	n	23	9	32
	%	71.9	28.1	100.0
p-value=0.500				

* Significant values (p<0.050) – Fisher's Exact test

Note: NS = numerical scale; VAS = visual analogue scale; NS before VAS = group of subjects that answered the numerical scale first; VAS before NS = group of subjects that answered the visual analogue scale first

DISCUSSION

Rating scales are common instruments that provide a fast and easy mean of quantifying certain individual perception. The choice of the type of scale must be based on practical considerations, on the individual preferences and on the feasibility of its use in the clinical routine taking into account the time of administration[3,4,9].

In the present study, both scales produced similar results as it happened to the Chinese study[11]. Therefore, the findings suggest that the patient and/or the clinician chose their favorite modality of rating scale. It is important to highlight that the higher scores for the Effects on Emotion and Activity Limitation aspects obtained by the NS indicate that perhaps the cognitive and sensorial factors influenced the answers[5]. Probably, the questionnaire with the VAS under evaluated these aspects. Nonetheless, these differences is not relevant and does not change the clinician intervention planning.

The participants did not show any preference regarding the type of scale. Seemingly they also did not find any difference regarding the degree of difficulty encountered when answering the questionnaire. On the other hand, as far as the time of answering the questionnaire is concerned, the NS scale provided a faster rating[9,12]. Probably, the continuous line of the VAS, which does not have category or division support, make the individuals insecure during the rating.

CONCLUSION

We can conclude that regardless the rating scale used, there is no difference in the results of the VAPP, since the results obtained both by the NS and VAS were similar. The order of administration of the questionnaires had little influence on results. Moreover, the questionnaire with the numerical scale takes less time to be answered, which may be useful for clinical application. Therefore, the clinician can decide either to use the NS that is faster or let the patient chose each of the scales they prefer answering the questionnaire with.

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