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Cultural adaptation of the short Self-Regulation Questionnaire: suggestions for the speech area

Adaptação cultural do Questionário Reduzido de Autorregulação: sugestões de aplicação para área de voz

Keywords

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ABSTRACT

Purpose: To present the translated and linguistic and culturally adapted version of the Short self-regulation Questionnaire (SSRQ) for the Brazilian Portuguese and to check its applicability to patients with dysphonia. **Methods:** The SSRQ is a tool used to evaluate the ability to self-regulate behavior; it has 31 items and generates three scores: total index of individual self-regulation capacity and partial scores for goal setting and impulse control. Each item should be scored by means of a Likert-type 5-point scale; the total score ranges from 29 to 145 points. The original instrument was translated and culturally adapted to Brazilian Portuguese by two English-speaking speech therapists who combined their translations and made linguistic adjustments to compose a single final version. This version was back-translated by a third speech therapist with experience in validation studies and without knowledge of the original instrument. The translation and the back-translation were compared with each other and with the original English version by five speech therapists that reached a consensus on additional changes. In this way, the final version was produced. This was called "Questionário Reduzido de Autorregulação" (QRAR). The QRAR was applied to 45 randomly chosen subjects with and without dysphonia in a teaching clinic. **Results:** No item had to be eliminated, since the respondents did not find it difficult to indicate their answers. **Conclusion:** The "Questionário Reduzido de Autorregulação" (QRAR) has been successfully translated and culturally and linguistically adapted to Brazilian and Portuguese and can be applied to individuals with voice problems.

RESUMO

Objetivo: Apresentar a versão traduzida e adaptada linguística e culturalmente para o português brasileiro do *Short Self-Regulation Questionnaire* (SSRQ) e verificar sua aplicabilidade para pacientes com disfonia. **Método:** O SSRQ é um instrumento para avaliar a capacidade de autorregular o comportamento; possui 31 itens e gera três escores: o índice total da capacidade de autorregulação individual e os escores estabelecimento de objetivos e controle de impulsos. Cada item deve ser graduado por meio de uma escala de Likert de 5 pontos; o escore total varia de 29 a 145 pontos. O instrumento original foi traduzido e adaptado culturalmente para o português brasileiro por duas fonoaudiólogas fluentes em inglês, que combinaram suas traduções e realizaram ajustes linguísticos para compor uma versão única final. Essa versão foi retrotraduzida para o inglês por uma terceira fonoaudióloga com experiência em estudos de validação e sem conhecimento do instrumento original. A tradução e a retrotradução foram comparadas entre si e ao instrumento original em inglês por cinco fonoaudiólogas que chegaram a um consenso para mudanças adicionais. Dessa forma, produziu-se a versão final, chamada Questionário Reduzido de Autorregulação (QRAR), que foi aplicado em 45 indivíduos com e sem disfonia, escolhidos de forma aleatória em uma clínica escola. **Resultados:** Nenhum item teve de ser eliminado, já que os respondentes não encontraram dificuldades em marcar suas respostas. **Conclusão:** O Questionário Reduzido de Autorregulação (QRAR) foi traduzido e adaptado cultural e linguisticamente para o português brasileiro e pode ser aplicado, com êxito, em indivíduos com problemas de voz.

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INTRODUCTION

Abusive behavior is linked to many health problems, such as cigarette smoking⁽¹⁾, consumption of psychoactive substances like alcohol⁽²⁾, obesity, non-adherence to physical exercise⁽³⁾, sexual risk behaviors⁽⁴⁾, among others. In the human voice area, behavior may also have greater or lesser participation in the genesis and/or maintenance of most speech disorders. It is understood that the use of voice has a more relevant role in behavioral dysphonia, in which patients present vocal difficulties related to abusive behaviors and/or inadequate vocal tract adjustments.

Thus, it is important to increase the knowledge about cognitive responses and behavioral characteristics of patients, such as associative learning, motivation and regulation of emotion, which may be linked to the genesis and maintenance of dysphonia, especially of the behavioral nature.

With respect to this, it is notable that self-regulation is an essential executive function managed by the prefrontal cortex of the frontal lobe of the brain to keep individuals active in the process of achieving goals. It is believed to be a control responsible for features that distinguish them from other animals, such as self-awareness, complex planning ability, and problem solving. It is a complex phenomenon that involves behavior (activation, monitoring, inhibition, preservation and adaptation), emotions and cognitive strategies to achieve desired goals⁽⁵⁾.

One of the ways to evaluate self-regulation is through tasks/tests that evaluate executive functions⁽⁶⁾ or through self-assessment tools, in order to verify the respondent's own perception about the ability of self-regulation. There are some proposals for evaluating the effect of self-regulation on treatment outcomes, particularly focusing on self-determination⁽⁷⁾.

The *Self-Regulation Questionnaire* (SRQ)⁽⁸⁾, in its original English version, was constructed from the seven-step model of self-regulation that involves (1) receiving relevant information; (2) evaluating the information and comparing it with the standards; (3) provoking change; (4) looking for options; (5) formulating a plan; (6) executing the plan; and (7) evaluating the effectiveness of the plan, generally encompassing all principles of self-regulation. Subsequently, studies verifying the structure and internal consistency of the SRQ have been carried out based on factorial analysis and resulting in its reduced version, the so-called *Short Self-Regulation Questionnaire* (SSRQ) with 31 items strongly correlated with the SRQ^(9,10).

This instrument has been used to verify the relationship between self-regulation and various cognitive and behavioral issues, such as drug use and other psychoactive substances^(11,12), learning disorders⁽¹³⁾; treatment adherence⁽¹⁴⁾, among others.

Particularly regarding vocal behavior, the acquisition and generalization of new vocal behaviors directly require self-regulation, which may be related to the gains/modifications resulting from voice therapy⁽⁶⁾.

It is important to verify the role of self-regulation in voice therapy and how much it may interfere with its results⁽¹⁵⁾. The impact of cognitive factors and how much they are involved in the intended changes should be investigated. Self-regulation has implications for the learning and generalization of new skills and is also important for the maintenance of behaviors

acquired over time. This reinforces the need to use strategies to improve self-regulation in voice therapy⁽¹⁵⁾.

Mapping self-regulation in the therapeutic process may be important for a better characterization of the clinical picture and planning of the therapy and selection of strategies for practical guidance of patients, which will favor positive gains. Thus, the objective of this study was to present the translated and linguistically and culturally adapted Brazilian Portuguese version of the *Short Self-Regulation Questionnaire* (SSRQ), as well as verify its applicability to patients with and without dysphonia.

It is important to mention that the SSRQ has been translated, adapted and validated to other languages, but similar procedures are unknown in the Brazilian Portuguese language. The process carried out in this article can be used both for application in dysphonic individuals and for the application of the instrument in territories that use Brazilian Portuguese in order to verify self-regulation linked to other types of behavior, whether additive or not.

METHODS

This is a multicentric research developed by the Federal University of São Paulo (UNIFESP) and the Federal University of Paraíba (UFPB). It followed the ethical rigor, in accordance with the precepts of resolution 466/12 of the National Commission of Ethics in Research (CONEP) and was approved by the Research Ethics Committee of both institutions of higher education under Opinions n° 811.219/14 UNIFESP and n° 906.676/14 UFPB.

The *Short Self-Regulation Questionnaire* (SSRQ)⁽⁹⁾ was translated and culturally adapted to Brazilian Portuguese by two fluent English-speaking speech therapists who were aware of the purpose of the research. Subsequently, consensual adjustments were made for the final version to have a more accessible language. This Portuguese version was back-translated by a third fluent English-speaker speech therapist with experience in validation studies. This version was back-translated by a third experienced speech therapist who did not participate in the previous stage and was not aware of the instrument in question. Translation and back-translation were compared with each other and with the original instrument. Subsequently, five speech therapists analyzed and reached consensus about necessary changes. Thus, the final version of the Short Self-Regulation Questionnaire (SSRQ) was obtained. The theoretical approach adopted for this translation and linguistic and cultural equivalence was in accordance with the *Scientific Advisory Committee of Medical Outcome Trust*.

Cultural equivalence was carried out by applying this version of the Short Self-Regulation Questionnaire (SSRQ) to 45 individuals, 25 of which were dysphonic and 20 were healthy. The participants were 40.3 (\pm 5.7) years old on average. Dysphonic participants were randomly selected in the Integrated Laboratory of Voice Studies (ILVS) of the UFPB and those without dysphonia were companions of patients who attended the Speech Therapy teaching clinic of the institution. Eligibility criteria included: being adult, any gender, without the neurological, cognitive and/or psychiatric disorders, and literate, in order to avoid interference in the application of the

instrument. Dysphonic participants had their voices deviated based on the auditory-perceptive assessment performed by a speech therapist in voice, and on the otorhinolaryngological evaluation compatible with behavioral dysphonia (lesion in the membranous portion of the vocal fold, glottic opening with no neurological/organic origin or absence of laryngeal lesion).

Volunteers were informed about the research objectives and, if they did not agree, they could withdraw from participating. When they accepted to continue in the research, they would sign the Informed Consent Form (ICF) and answer the Short Self-Regulation Questionnaire (SSRQ). The instrument was orally applied by a researcher, who would not interfere in the choice of answers or interpretation of the items. The option “not applicable” was not selected in any of the items of the questionnaire. Thus, all questions in the protocol were kept.

This application occurred to identify unintelligible or inappropriate questions for the population. Each item contained the option “Not applicable”, which could be indicate an invalid aspect for this culture. All items were answered by all participants. Thus, the instrument was considered applicable, since no respondent of the target-public had difficulty to respond neither considered the SSRQ items strange or difficult to understand.

RESULTS

The Questionário Reduzido de Autorregulação (QRAR) is a translated and culturally adapted Brazilian Portuguese version of the *Short Self-Regulation Questionnaire* (SSRQ)⁽⁹⁾. This questionnaire has 31 items aiming to provide a total index of individual self-regulation capacity, i.e. the ability to plan, guide and monitor a flexible behavior before changing circumstances (Annex A).

Each item has a gradation by means of a *Likert*-type scale that ranges from 1 to 5, wherein 1 indicates totally disagree, 2 indicates disagree, 3 indicates unsure, 4 indicates agree and 5 indicates totally agree. The score ranges from 29 to the maximum score of 145 points. The protocol provides a total score and two dimensions: goal setting and impulse control. The total score and/or the two dimensions can be calculated. The items 1, 5, 8, 12, 14, 15, 16, 17, 18, 19, 20, 21, 25, 26 belong to the goal setting dimension, and the items 2, 3, 4, 6, 7, 9, 10, 11, 13, 22, 23, 24, 27, 28, 29 to the “impulse control” dimension. A simple sum of all items is performed. It should be noted that the items 2, 3, 4, 6, 7, 9, 10, 11, 16, 19, 22, 23 and 27 must be calculated in reverse order. Items 30 and 31 are not included in the sum or calculation of the isolated dimensions, neither in the total score, because they only serve for internal reliability of the instrument.

DISCUSSION

The *Self-Regulation Questionnaire* (SRQ) is a 63-item instrument with the specific objective of measuring the generalized ability to regulate behavior in order to achieve desired future results⁽⁸⁾. Studies on the structure and internal consistency of the SRQ have provided sufficient scientific evidence for this instrument to have its convergent and discriminant validity confirmed^(9,10).

From this, a factorial analysis was carried out leading to the reduced version named *Short Self-Regulation Questionnaire* (SSRQ), with 31 items strongly correlated with the SRQ^(9,10).

Validation and factorial analysis studies of this instrument in other languages, such as Portuguese from Portugal and Spanish from Spain, had been conducted with the aim of checking the sensitivity and specificity of this questionnaire to discriminate other phenomena such as addictive behavior⁽¹¹⁾ and learning disorders⁽¹⁴⁾. Thus, it is believed that the translated and linguistically and culturally adapted Brazilian Portuguese version can be used not only for dysphonic patients, but also to investigate the self-regulation of other population groups with different characteristics.

Besides the association between cognitive, behavioral and self-regulation phenomena, it has been also verified that the variation in the levels of psychological well-being influences the self-regulation capacity; there is a very strong relation between self-regulation capacity and the dimensions of purpose in life and in the environmental domain⁽¹⁴⁾. The SSRQ has also proved to be sensitive to indicate the effectiveness of treatment after self-regulation training.

Human behavior is a widely studied theme in Neuroscience. Much is due to the alarming data of modern society, where approximately 40% of mortality in the United States is related to social and behavioral factors such as diet, lifestyle and smoking. The literature reports that ceasing such behaviors is linked to self-control⁽⁷⁾ and self-regulation^(8,9).

Voice behavior is fundamental to the genesis and/or maintenance of most speech disorders, particularly in cases of behavioral dysphonia. Behavioral dysphonia, which in some studies may be synonymous with functional dysphonia, corresponds to the voice disorder that takes place in the absence or presence of a laryngeal lesion, resulting from improper use of voice, such as abusive behavior and inappropriate adjustments. In this approach, voice therapy requires interest, effort and attention from patients in order to make decisions in the various communicative situations and to put into practice the new vocal behaviors learned in a conscious way. Having said that, it is logical to propose that speech therapists insert elements to favor the process of self-regulation in therapy⁽¹⁵⁾.

Knowing the patient’s self-regulation factors with dysphonia or vocal symptoms during the evaluation may be important to benefit the planning of the therapy, practical guidance on the patient’s daily life, and the generalization and maintenance of gains in voice therapy tasks/techniques⁽¹⁵⁾. Thus, it is very important to use sensitive instruments to evaluate self-regulation during the evaluation process, in order to be able to set targeted goals and establish the therapeutic goals of the patient. The SSRQ proved to be a very interesting alternative for this purpose. The Brazilian Portuguese version proved to be of easy application and interpretation of results.

CONCLUSION

The translated and linguistically and culturally adapted Brazilian Portuguese version of the *Short Self-Regulation Questionnaire* (SSRQ), named the Questionário Reduzido de

Autorregulação (QRAR) in Portuguese, was presented. It was observed that individuals with and without dysphonia were able to respond to the questionnaire successfully.

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Author contributions

AAA and MB helped to build and develop the work. AAA was particularly involved in collecting, tabulating, interpreting data and writing the article; and MB participated in the study design, supervision and final writing of the article.

Annex A. Short Self-Regulation Questionnaire (SSRQ)

Final Brazilian Portuguese version adapted by Anna Alice ALMEIDA and Mara BEHLAU of the original English version of Neal JD, Carey KB. *A Follow-Up Psychometric Analysis of the Self-Regulation Questionnaire. Psychol Addict Behav. 2005 December; 19(4):414–22.*

Por favor, responda às seguintes perguntas circundando a resposta que melhor descreve como você é. Se você DISCORDA TOTALMENTE, circule o 1. Se você DISCORDAR, circule o 2. Se você estiver INCERTO(A), circule o 3. Se você CONCORDAR, circule o 4, e se você CONCORDAR TOTALMENTE, circule o 5. Não há respostas certas ou erradas. Tente trabalhar rapidamente e não pensar muito sobre suas respostas.

Use: 1= Discordo totalmente 2= Discordo 3= Incerto 4= Concordo 5= Concordo totalmente

1	Geralmente eu controlo meu progresso até atingir meus objetivos.	1	2	3	4	5
2	Tenho dificuldade em tomar decisões.	1	2	3	4	5
3	Distraio-me dos meus planos facilmente.	1	2	3	4	5
4	Só percebo as consequências dos meus atos quando já é tarde demais.	1	2	3	4	5
5	Sou capaz de atingir objetivos que defino para mim.	1	2	3	4	5
6	Eu adio a tomada de decisões.	1	2	3	4	5
7	É difícil perceber quando estou no limite (álcool, comida, doces).	1	2	3	4	5
8	Se eu quiser mudar, certamente eu consigo.	1	2	3	4	5
9	Quando decido mudar alguma coisa, me sinto pressionado(a) com tantas escolhas.	1	2	3	4	5
10	Apesar de uma decisão tomada, tenho dificuldade em seguir as etapas para realizá-la.	1	2	3	4	5
11	Acho que não aprendo com os meus erros.	1	2	3	4	5
12	Consigo continuar com um plano que está funcionando.	1	2	3	4	5
13	Geralmente, preciso errar só uma vez para aprender.	1	2	3	4	5
14	Tenho valores pessoais e procuro respeitá-los.	1	2	3	4	5
15	Quando tenho um problema ou desafio, começo a procurar as possíveis soluções.	1	2	3	4	5
16	Tenho dificuldade para definir meus próprios objetivos.	1	2	3	4	5
17	Tenho muita força de vontade.	1	2	3	4	5
18	Quando quero mudar algo, presto bastante atenção em como eu estou fazendo.	1	2	3	4	5
19	Tenho dificuldade em fazer planos para alcançar meus objetivos.	1	2	3	4	5
20	Sou capaz de resistir às tentações.	1	2	3	4	5
21	Estabeleço objetivos e controlo meu progresso.	1	2	3	4	5
22	Na maioria das vezes não presto atenção no que estou fazendo.	1	2	3	4	5
23	Tendo a repetir a mesma coisa, mesmo que não esteja dando certo.	1	2	3	4	5
24	Geralmente acho diversas soluções quando quero mudar algo.	1	2	3	4	5
25	Quando tenho um objetivo, geralmente planejo como alcançá-lo.	1	2	3	4	5
26	Quando eu decido mudar algo, presto bastante atenção em como estou agindo.	1	2	3	4	5
27	Frequentemente não percebo o que estou fazendo até que alguém chame minha atenção.	1	2	3	4	5
28	Geralmente penso antes de agir.	1	2	3	4	5
29	Aprendo com os meus erros.	1	2	3	4	5
30	Sei como quero ser.	1	2	3	4	5
31	Desisto facilmente.	1	2	3	4	5

Pode-se calcular a pontuação total e/ou duas dimensões.

Estabelecimento de objetivos (itens 1, 5, 8, 12, 14, 15, 16, 17, 18, 19, 20, 21, 25, 26)

Controle de impulsos (itens 2, 3, 4, 6, 7, 9, 10, 11, 13, 22, 23, 24, 27, 28, 29).

Os itens 2, 3, 4, 6, 7, 9, 10, 11, 16, 19, 22, 23 e 27 devem ser calculados de forma invertida.

Não somar os itens 30 e 31. Eles são apenas para confiabilidade do instrumento.

PONTOS DE CORTE

Escore Total \leq 96 pontos (pontuação máxima de 145)

Controle de impulsos: \leq 52 pontos (15 itens, pontuação máxima de 75)

Estabelecimento de objetivos: \leq 40 pontos (14 itens, pontuação máxima de 70).