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RESEARCH

PERFORMANCE OF THE EXPERT COMMITTEE IN THE CULTURAL ADAPTATION OF THE DIABETES EMPOWERMENT SCALE-SHORT FORM (DES-SF)

ATUAÇÃO DO COMITÊ DE JUÍZES NA ADAPTAÇÃO CULTURAL DO DIABETES EMPOWERMENT SCALE-SHORT FORM *(DES-SF)*

ACTUACIÓN DEL COMITÉ DE JUECES EN LA ADAPTACIÓN CULTURAL DE LA ESCALA DE EMPODERAMIENTO DE LA DIABETES, FORMA ABREVIADA DIABETES (DES-SF)

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ABSTRACT

Objective: The objective of this study is to describe a methodological proposal for the role performed by an expert committee's via an electronic questionnaire implemented and tested in the cross-cultural adaptation of the Diabetes Empowerment Scale-Short Form instrument. **Method:** A methodological study was carried out with 38 specialists from the fields of linguistics and health sciences who evaluated the instrument translated version of DES-SF by means of an electronic questionnaire, developed and administered through the web tool eSurv. The level of acceptance of the answers by the experts was evaluated by absolute and relative frequencies and the level of agreement among the experts was evaluated by calculating the Cohen-Fleisss Kappa coefficient. The analyses were carried out in the statistical software and environment R. **Results:** Interdisciplinary collaboration, together with a web data collection methodology yielded a larger diversity of opinions and consequently low agreement among the experts on the items of the translated instrument. However, it is believed that this diversity of opinions generated suggestions that have enriched the translation process. **Conclusion:** A web tool to collect expert committee's assessment proved to be reliable, safe and effective to evaluate the translation of a healthcare instrument.

Keywords: Diabetes Mellitus; Surveys and Questionnaires; Translating; Education Nursing; Public Health Nursing.

RESUMO

Objetivo: *descrever proposta metodológica para a dinâmica de atuação do comitê de juízes por questionário eletrônico implementada e testada na adaptação cultural do instrumento Diabetes Empowerment Scale-Short Form.* ***Método:*** *estudo metodológico realizado com 38 especialistas das áreas de Letras e Ciências da Saúde que avaliaram o instrumento traduzido via questionário eletrônico, desenvolvido e aplicado por meio da ferramenta web e-Surv. Utilizando as respostas ao questionário, o nível de aceitação dos juízes foi avaliado por meio de frequências absolutas e relativas e o nível de concordância entre os juízes foi avaliado por meio do cálculo do coeficiente de Kappa de Cohen-Fleisss. As análises foram realizadas no ambiente de programação estatística R.* ***Resultados:*** *a colaboração interdisciplinar aliada a uma metodologia de coleta de dados online resultou em uma heterogeneidade de opiniões, o que gerou baixa concordância entre os juízes na adaptação do instrumento traduzido. No entanto, acredita-se que essa diversidade de opiniões tenha gerado sugestões que enriqueceram o processo tradutório.* ***Conclusão:*** *a ferramenta online se mostrou confiável, segura e efetiva na dinâmica do comitê de juízes para avaliar instrumentos em saúde.*

Palavras-chave: *Diabetes Mellitus; Inquéritos e Questionários; Tradução; Educação em Enfermagem; Enfermagem em Saúde Pública.*

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RESUMEN

Objetivo: *describir una propuesta metodológica para la dinámica de actuación del comité de jueces por cuestionario electrónico implementada y probada en la adaptación cultural de la Escala de empoderamiento de la diabetes, forma abreviada (DES-SF).* ***Método:*** *Estudio metodológico realizado con 38 especialistas de las áreas de letras y ciencias de la salud que evaluaron el instrumento traducido vía cuestionario electrónico, desarrollado y aplicado por la herramienta web e-Surv. El nivel de aceptación de los jueces fue evaluado por frecuencias absolutas y relativas y el nivel de concordancia por el cálculo del coeficiente de Kappa de Cohen-Fleisss. Los análisis se realizaron en el ambiente de programación estadística R.* ***Resultados:*** *La colaboración interdisciplinaria aliada a una metodología de recogida de datos on-line resultó en la heterogeneidad de opiniones, lo cual generó baja concordancia entre los jueces en la adaptación del instrumento traducido. Sin embargo, esta diversidad de opiniones ha generado sugerencias que han enriquecieron el proceso traductor.* ***Conclusión:*** *La herramienta on-line se mostró confiable, segura y efectiva en la dinámica del comité de jueces para evaluar instrumentos en salud.*

Palabras clave*: Diabetes Mellitus; Encuestas y Cuestionarios; Traducción; Educación en Enfermería; Enfermería en Salud Pública.*

INTRODUCTION

Instruments developed in foreign languages require translation and cross-cultural adaptation to be used in a new cultural context, as is the case of instruments written in English to be used in Brazil. Cross-cultural adaptation needs to take into account not only content, but also its expression in order to allow for a successful interaction between the instrument administrator and those interviewed in face-to-face interaction or computer mediated communication. In other words, the translated text must be adequate to the original source text in terms of content and acceptable to the target community in the target-culture.[1]

The standard methodology for cross-cultural adaptation of instruments requires and expert committee to evaluate the version of the translated text obtained after the stage of back-translation. This step allows correcting possible inadequacies resulting from the translation, made by professional translators, little familiar with the context in which the questionnaires will be used.[1]

However, this widely used methodology has proved unsatisfactory in producing culturally appropriate texts. Back-translation has been identified as a phase that does not necessarily guarantee contextual equivalence of the original and translated texts, and the role of expert committees in evaluating a translated version has been pointed out as being more effective when they are made up by specialists from different fields of expertise and members of the target community where the instrument will be administered.[1]

An expert committee that allows for the participation of an interdisciplinary pool of specialists in geographically distant places demands the use of a web tool to facilitate the evaluation process.[2,3]

Recently, there have been advances in the way scientific research is conducted in the form of surveys and web questionnaires are nowadays recognized as effective and appropriate tools in public health intervention practices.[2,3]

The purpose of this study is to describe a methodological proposal for the role performed by an expert committee in the process of cross-cultural adaptation by means of a web questionnaire implemented and tested in the cross-adaptation of the instrument *Diabetes Empowerment Scale-Short Form*.

METHOD

Design, sample and environment

This was a methodological study; 92 experts were pre-selected, out of which 38 professionals accepted to be members of the expert committee (19 applied linguists and 19 healthcare professionals with research activities related to cultural adaptation of instruments and/or expertise in diabetes care). The committee evaluated the translated version of the DES-SF instrument via a web tool following the internationally recommended procedures for translations and cultural adaptations.

Instrument

The *Diabetes Empowerment Scale-Short Form* (DES-SF) is an eight-item instrument that measures the psychosocial self-efficacy of people with diabetes and allows to quickly and systematically guide the process of planning, education, and promotion of autonomous behavior.[4-8]

The DES-SF was originally elaborated in English and encompasses eight conceptual dimensions: a) assessing the need for change; b) developing a plan; c) overcoming obstacles; d) asking for support; e) self-support; f) dealing with emotions; g) motivating oneself; h) making appropriate choices for diabetes care, according to priorities and circumstances. Each item can be answered through a five-level Likert-type scale, ranging from "strongly disagree" to "strongly agree". The numeric values for the set of responses are summed and divided by eight. Scores from 1 to 2.3 are considered low; from 2.4 to 3.7, intermediate; and from 3.8 to 5, high.[9,10]

Procedures for translation, adaptation and expert committee evaluation

Prior to the study, authorization was sought from the authors of the Diabetes Empowerment Scale-Short Form instrument to use, translate and cross-culturally adapt the instrument. The steps within the conventional methodology for translation and cross-cultural adaptation – forward translation, synthesis of translated versions, and back-translation –were carried out by a group of specialists in translation, which yieded the translated version of the instrument. A web questionnaire to evaluate the translated version was developed and sent to the expert committee. This questionnaire was implemented on the web platform e-Surv.[11]

A sample of professionals was selected to make up the expert committee. The sample was intentional and the experts were affiliated to the fields of applied Linguistics and Health Sciences, having a record of previous participation in translation and cross-cultural adaption of instruments.

A letter of invitation was sent to the experts by *e-mail*, exposing the aims and methodology of the study, a justification for the translation and adaptation of the instrument and a request for the addressee to participate as an expert evaluator through the web platform e-Surv. A deadline of seven days was established for experts to compare the excerpts in English and their corresponding translations, as well as make any considerations and suggestions that they deemed pertinent. Reminders were sent via *e-mail* requesting the completion of the questionnaire in the case of experts who did not respond within the the set deadline in order to speed up response rates.

It is important to note that, the experts answered the *online* questionnaire on an individual basis and did not have access to the opinions of the other participating experts.

The consultation covered both the statement with instructions on the instrument and the DES-SF response options, and was formulated from the following questions: a) "Do you think the Portuguese rendition is adequate to the English text?" and b) "Do you think the proposed translation is clear and easy to understand for prospective interviewees?" The alternatives to be chosen by the experts were: "yes", "no" and "partially". In case they answered "no" or "partially", they were requested to account for inadequacies and propose suggestions to improve the translated text. Experts were also requested to answer questions that would contribute to the characterization of the committee, such as gender, academic background, field of expertise, previous participation in committees of evaluation of instruments, proficiency and frequency of reading in English. Data were collected from September to October 2014.

Table 1 presents the original version and synthesis of the Diabetes Empowerment Scale-Short Form instrument, which were evaluated by the expert committee.

Table 1 - Original version and synthesis-version of the Diabetes Empowerment Scale-Short Form for the Brazilian population. Belo Horizonte, MG, Brazil 2014

Item	Question	Original version	Synthesis-version
Instructions	a	*Diabetes Empowerment Scale-Short Form (DES-SF)* *The 8 items below constitute the DES-SF. The scale is scored by averaging the scores of all completed items (Strongly Disagree =1, Strongly Agree = 5)*	Versão curta da Escala de Empoderamento em Saúde (DES-SF) Os oito itens a seguir fazem parte da versão curta da Escala de Empoderamento em Saúde. Para cada item há cinco opções de resposta, que serão pontuadas de 1 (não estou de acordo de jeito algum) a 5 (estou muito de acordo). A avaliação final é feita pela média da pontuação das respostas.
Response options	a	*Check the box that gives the best answer for you:* *1. Strongly Disagree* *2. Somewhat Disagree* *3. Neutral* *4. Somewhat Agree* *5. Strongly Agree*	Diga com qual dessas opções você responderia: 1. Não estou de acordo de jeito algum 2. Não estou de acordo 3. Não tenho opinião 4. Estou de acordo 5. Estou muito de acordo
1	a b	*In general, I believe that I:* *[...] know what part(s) of taking care of my diabetes that I am dissatisfied with*	Em geral, eu acredito que: [...] sei muito bem quais coisas não me agradam entre todas que tenho de fazer para controlar o diabetes.
2	a b	*[...] Am able to turn my diabetes goals into a workable plan.*	[...] consigo montar um plano de cuidados baseado nas metas que estabeleci para controlar o diabetes.
3	a b	*[...] can try out different ways of overcoming barriers to my diabetes goals.*	[...] posso tentar diferentes maneiras para vencer as minhas dificuldades e alcançar as metas que eu estabeleci para controlar o diabetes.

Continue...

... continued

Table 1 - Original version and synthesis-version of the Diabetes Empowerment Scale-Short Form for the Brazilian population. Belo Horizonte, MG, Brazil 2014

Item	Question	Original version	Synthesis-version
4	a b	*[...] can find ways to feel better about having diabetes.*	[...] vou encontrar um jeito de me sentir melhor mesmo sendo diabético(a).
5	a b	*[...] know the positive ways I cope with diabetes-related stress.*	[...] sei como encarar de forma positiva o estresse que sinto por ter diabetes.
6	a b	*[...] can ask for support for having and caring for my diabetes when I need it.*	[...] posso pedir ajuda para tratar e controlar o diabetes.
7	a b	*[...] know what helps me stay motivated to care for my diabetes.*	[...] sei o que me faz ficar motivado para cuidar do diabetes.
8	a b	*[...] know enough about myself as a person to make diabetes care choices that are right for me.*	[...] me conheço bem para fazer as escolhas que vão dar certo para mim.

Data analysis

Agreement by the committee on the evaluated items was a criterion to ensure semantic, idiomatic, cultural and conceptual equivalence of the instrument, as well as of its instructions layout and clarity. Cohen-Fleiss (k) Kappa coefficient analysis was used to verify the level of agreement between experts in relation to the two questions evaluated in each item of the instrument (questions a and b).[12] Analysis of absolute and relative frequencies of responses to questions a and b was used to verify the degree of acceptance of experts regarding the translated version.

All data were fed into and anonymously stored in a database created for this purpose and the quantitative analyses were performed within the statistical software and environment R.[13] Results of this step provided the first version of the scale in Brazilian Portuguese language, called the *Escala de Autoeficácia em Diabetes – Versão Curta (EAD-VC)*.

The development of this study met the national and international standards for ethics in research involving human subjects.

Results

Among the 38 experts who answered the *web* questionnaire, the majority were female (28; 73.7%), had a PhD degree and/or post-doctoral residence (18; 52.6%), predominantly working in teaching and research (19; 50%). Most of the experts (21; 55.3%) stated that they had the habit of reading texts in English on a daily basis. Regarding previous participation in an committees, 13 (34.2%) answered that they had already participated in an evaluation of translation of instruments, questionnaires and/or other types of text. This percentage was somehow expected since expert committee evaluation is an emergent practice, particularly for experts in fields outside the Health Sciences.

Table 2 shows the frequencies obtained from the answers regarding assessment of each item in the questionnaire. Frequencies allowed us to decide on which items would require changes, in the questions a or b (higher frequency of "partially" and "no" answers).

Table 2 shows that the items that presented the highest frequency of assessments with answers "partially", according to the two groups of experts, were the instructions for the administration of the instrument and the response options regarding the translation from English into Portuguese. In the first item, 47.4% of the experts in the Linguistics area and 36.8% of the experts in Health Sciences area "partially" agreed on the translation, while in the second item, the relative frequency of "partial" agreement was 57.9% in both groups.

In the other items, it was possible to verify a higher frequency of evaluations with answers "partially" and "no" in the health science. In item 1, for example, it was observed that there was a low acceptance of both the translation and the understanding by this group of experts (31.6 and 21%, respectively, for the "no" answer). In item 2, 47.2% of the participants in this group answered that they "partially" agreed with the interpretation of the translation for the interviewee, while in the item 6, 57.9% of them "partially" agreed on the correspondence of the translated to the original text.

Table 3 presents the Cohen-Fleiss Kappa coefficient (Kappa) considering all experts and the questions a and b (overall Kappa). Kappa coefficient values are also presented for questions a and b, and for the two groups of experts separately.

With regard to the equivalence of the original and translated texts (question a) and the clarity and level of understanding of the translated text (question b), considering the two questions together and all the experts (Health and Linguistics), concordance between experts was low (Kappa = 0.26, where perfect agreement would be indicated by Kappa = 1).

Table 2 - Absolute and relative frequencies of the responses of the expert committee to the evaluation of the items of the instrument according to questions a and b. Belo Horizonte, MG, Brazil 2014. (n = 38)

Item	Question	n(%)					
		Yes		Partially		No	
		Linguistics	Health	Linguistics	Health	Linguistics	Health
Instructions	a	9(47.4)	11(57.9)	9(47.4)	7(36.8)	1(5.2)	1(5.3)
Response options	a	8(42.1)	6(31.6)	11(57.9)	11(57.9)	0	2(10.5)
1	a	13(68.1)	8(42.1)	5(26.3)	5(26.3)	1(5.2)	6(31.6)
	b	11(60.0)	7(36.8)	7(36.8)	8(42.1)	1(5.2)	4(21.0)
2	a	15(79.0)	10(52.7)	3(15.8)	7(36.8)	1(5.2)	2(10.5)
	b	14(73.7)	9(47.4)	3(15.8)	9(47.4)	2(10.5)	1(5.2)
3	a	15(79.0)	15(79.0)	4(21.0)	4(21.0)	0	0
	b	13(68.5)	14(73.7)	5(26.3)	5(26.3)	1(5.2)	0
4	a	12(63.2)	10(52.7)	6(31.6)	8(42.1)	1(5.2)	1(5.2)
	b	12(63.2)	13(68.4)	6(31.6)	6(31.6)	1(5.2)	0
5	a	16(84.3)	12(63.2)	2(10.5)	7(36.8)	1(5.2)	0
	b	14(73.7)	14(73.7)	4(21.1)	5(26.3)	1(5.2)	0
6	a	12(63.2)	8(42.1)	6(31.6)	11(57.9)	1(5.2)	0
	b	13(68.4)	14(73.7)	6(31.6)	5(26.3)	0	0
7	a	16(84.2)	16(84.2)	3(15.8)	3(15.8)	0	0
	b	17(89.5)	16(84.2)	2(10.5)	3(15.8)	0	0
8	a	12(63.2)	10(52.7)	7(36.8)	8(42.1)	0	1(5.2)
	b	12(63.2)	13(68.4)	6(31.6)	6(31.6)	1(5.2)	0

(n (%) - Absolute and relative frequencies; Relative frequencies add up to 100% within the lines of each group (linguistics and health); Question a: do you think the Portuguese rendition is adequate to the English text? Question b: Do you think the proposed translation is clear and easy to understand for prospective interviewees?

Table 3 - Cohen-Fleiss kappa coefficient considering questions a and b (together and separately) for the Health and Linguistic expert groups (together and separately)

Group	Question		Questions a and b
	a - "Do you think the Portuguese text is in accordance with English text?"	b - "Do you think the proposed translation is clear and easy to understand for the interviewees?"	
Health	0.19	0.28	0.24
Linguistics	0.28	0.28	0.28
Boths groups	0.24	0.28	0.26

Considering the groups separately, health experts tended to agree somewhat less (Kappa equal to 0.24) than those of linguistics (Kappa equal to 0.28). When analyzing the question a alone ("do you think the Portuguese text is in accordance with English text?"), the experts tended to agree less among themselves (Kappa equal to 0.24) than to question b ("Do you think the proposed translation is clear and easy to understand for the interviewees?"), for which Kappa was equal to 0.28. When the expert groups are analyzed separately, it is noted that those of the health area agreed less with each other on the question a (Kappa equal to 0.19) than the Linguistic experts (Kappa equal to 0.28). Concerning the question b, the two groups had similar agreement levels (Kappa = 0.28 for both groups).

In order to compare the items of the original version of the DES-SF with their respective translations, it is important to emphasize that this was based on the analysis of the semantic, idiomatic, conceptual and cultural equivalence of the instrument, according to the suggestions of the expert committee.

Experts' suggestions for the final version of the instrument, as well as alterations made, can be seen in Table 4.

DISCUSSION

The present study, describes a methodological proposal for the role performed by an expert committee in the process of cross-cultural adaptation of instruments into Brazilian Portuguese. This proposal was tested in the translation and adaptation of the *Diabetes Empowerment Scale-Short Form* (DES-SF), an instrument used to assess the self-efficacy of people with diabetes *mellitus*, following recommendations suggested in the literature on this topic.[1]

Table 4 - Final version of the Diabetes Empowerment Scale-Short Form for the Brazilian population

Item	Final version
Instructions	Escala de Autoeficácia em Diabetes -Versão Curta (EAD-VC). Os oito itens a seguir fazem parte da versão curta da Escala de Empoderamento em Diabetes. Para cada item há cinco opções de resposta, que serão pontuadas de 1 (discordo totalmente) a 5 (concordo totalmente). A pontuação da escala é feita pela média das pontuações de todos os itens respondidos.
Response options	Diga com qual dessas opções você responderia. 1. Discordo totalmente 2. Discordo em parte 3. Não concordo nem discordo 4. Concordo em parte 5. Concordo totalmente
Em geral, eu acredito que:	
1	[...] sei muito bem quais coisas que tenho que fazer para controlar o diabetes que não me agradam.
2	[...] consigo montar um plano de cuidados baseado nas metas que eu estabeleci para controlar o diabetes.
3	[...] posso tentar diferentes formas para vencer as minhas dificuldades e alcançar as metas que eu estabeleci para controlar o diabetes.
4	[...] posso encontrar formas de me sentir bem tendo diabetes.
5	[...] sei como lidar de forma positiva com o estresse que sinto por ter diabetes.
6	[...] quando eu precisar, posso pedir ajuda para cuidar do diabetes.
7	[...] sei o que me deixa motivado para cuidar do diabetes.
8	[...] me conheço bem para fazer as escolhas certas para mim.

Because we are aware of the limitations reported in the literature for this type of adaptation, we introduced methodological changes in line with recent findings, giving greater weight to the work of the expert committee in the process and favoring their interdisciplinary configuration and their participation through electronic media.[1,14-18]

Is is important to highlight that there is no consensus as to the best method to be used to make-up an expert committee. Individual studies present a particular make-up according to inclusion criteria regarded as adequate, as observed in studies that discuss the methodology of translation and adaptation, and those that report on translated and adapted instruments. Thus, the make-up of a committee can be adjusted and varied according to the adopted model.[15,19-21] This study, opted for recruiting the largest possible number of experts to reach a balanced committee, having the same number of specialists from each field of expertise, these being familiar with translation and adaptation of instruments.

An interdisciplinary committee made up of experts from the fields of Linguistics and Health Sciences and the implementation of the evaluation process through a *web* platform is a methodology unexplored in the field of Nursing.[3,18] This study shows that it can be an effective and productive procedure, fostered by the integration of Linguistics, Nursing and Statistics in the adaptation of instruments.[2,22] The process of cultural adaptation of the translated version of the DES-SF was enhanced through an interdisciplinary committee, performing evaluation of items through a web platform, thus maximizing the participation of the experts in the assessment of the items.[23]

This methodological innovation allowed for new possibilities not covered by the conventional methodology, such as the possibility given to experts to make suggestions on an individual basis, preserving their individuality, and also allowing for their participation regardless of their geographical location. These advantages promoted the feeling of anonymity and allowed the participants to express certain opinions that they would not have expressed in face-to-face interaction.[11]

By accessing a web platform, the experts were able to respond to the questionnaire in a convenient way, at their preferred time and place; the responses were controlled and ensured more systematicity and reliability to the process, since the interview information sheet was generated automatically.[11] The data registry systematization and the consequent enhancement of its adequate statistical treatment for evaluation purposes confirm the potential of the *web tool*.[11,24] Only a few adjustments were necessary for proper import and data analysis within the statistical environment R.[13]

We selected 92 (100%) specialists to participate in the study. Of these, 38 (41.3%) agreed to answer the web questionnaire. This is a relatively high proportion compared to studies that have used web questionnaire which obtained rates of return between 25 and 20.4%.[25,26]

During the process of analysis, it was possible to observe that the suggestions individually offered by the members showed wide variety of opinions, which implicated in a low agreement among the experts. Experts from the field of healthcare tended to disagree with each other more frequently than linguists; they also tended to agree more frequently with each other when focus of evaluation was the clarity of the items. It is believed that this diversity of opinions has generated in suggestions that greatly enhanced the translation process.

Despite the advantages and facilities of using this type of technology, with low cost and agility throughout the process, obtaining better quality of answers and tabulation of results, the study shows that there is still a possibility of obtaining low return rates. This is due, to the anonymous character of electronic interaction, which is one of the difficulties encountered in this work. This was minimized by setting deadlines for return and reminders via *e-mails* in the case of the experts who did

not reply within the set deadline of seven days. This strategy was a way to increase response rates.

CONCLUSION

We have described a methodological proposal for the use of a *web* tool for the role performed by expert committees in the process of cross-cultural adaptation of instruments, which proved to be reliable, safe and effective in the training and monitoring of expert committees to evaluate health instruments.

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