Cogitare Enfermagem

ORIGINAL ARTICLE

STANDARD PRECAUTIONS QUESTIONNAIRE: CULTURAL ADAPTATION AND SEMANTIC VALIDATION FOR HEALTH PROFESSIONALS IN BRAZIL

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ABSTRACT

Objective: to accomplish the cultural adaptation and semantic validation of the Standard Precautions Questionnaire for Brazilian health professionals.

Method: study developed between 2017 and 2018, in Rio de Janeiro. The cultural adaptation included translation, consensus on the Portuguese version, evaluation by experts, back-translation, consensus and comparison with the original version, semantic evaluation and semantic validation. All ethical aspects were respected.

Results: for the content validation, the scores ranged from 0.60 to 1.00 and the score was 0.96, indicating that the items are very representative. In the semantic evaluation, 22 (80%) of the items were considered relevant and 24 (100%) of the items were considered clear and understandable by all professionals.

Conclusion: the items of the Brazilian version of the instrument were representative, relevant for the clinical practice of health professionals in assessing the obstacles to adhere to standard precautions. Studies are needed to evaluate the psychometric properties of the instrument.

DESCRIPTORS: Health; Health Personnel; Personal Protective Equipment; Validation Studies; Occupational Risks.

HOW TO REFERENCE THIS ARTICLE:

Pereira-Ávila FMV, Estelle Michinov E, Luna TD da C, Conde P dos S, Pereira-Caldeira NMV, Góes FGB. Standard precautions questionnaire: cultural adaptation and semantic validation for health professionals in Brazil. Cogitare enferm. [Internet]. 2019 [access "insert day, monh and year"]; 24. Available at: http://dx.doi.org/10.5380/ce.v24i0.59014.

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ARTIGO ORIGINAL / ARTÍCULO ORIGINAL

STANDARD PRECAUTIONS QUESTIONNAIRE: ADAPTAÇÃO CULTURAL E VALIDAÇÃO SEMÂNTICA PARA PROFISSIONAIS DE SAÚDE NO BRASIL

RESUMO
Objetivo: realizar a adaptação cultural e a validação semântica do Standard Precautions Questionnaire para profissionais de saúde brasileiros.
Métodos: estudo desenvolvido entre 2017 e 2018 no Rio de Janeiro. A adaptação cultural incluiu a tradução, o consenso sobre a versão em português, a avaliação por especialistas, a retrotradução, o consenso e a comparação com a versão original, a avaliação semântica e a validação semântica. Todos os aspectos éticos foram respeitados.
Resultados: na validação de conteúdo, as pontuações variaram de 0.60 a 1.00 e a pontuação foi igual a 0.96, indicando que os itens são muito representativos. Na avaliação semântica, 22 (80%) itens foram considerados relevantes e 24 (100%) itens foram considerados claros e compreensíveis por todos os profissionais.
Conclusão: os itens da versão brasileira do instrumento foram representativos e relevantes para a prática clínica de profissionais de saúde na avaliação dos obstáculos para aderir a precauções padrão. Estudos são necessários para avaliar as propriedades psicométricas do instrumento.

DESCRITORES: Saúde; Profissionais de saúde; Equipamento de Proteção Individual; Estudos de Validação; Riscos Ocupacionais.

STANDARD PRECAUTIONS QUESTIONNAIRE: ADAPTACIÓN CULTURAL Y VALIDACIÓN SEMÁNTICA PARA PROFESIONALES DE SALUD DE BRASIL

RESUMEN:
Objetivo: Efectuar la adaptación cultural y la validación semántica del Standard Precautions Questionnaire para profesionales de salud brasileños.
Método: Estudio desarrollado entre 2017 y 2018, en Río de Janeiro. La adaptación cultural comprendió: traducción, consenso sobre la versión en portugués, evaluación de expertos, retrotraducción, consenso y comparación con la versión original, evaluación semántica y validación semántica. Se respetaron todos los aspectos éticos.
Resultados: Para la validación de contenido, las puntuaciones oscilaron entre 0,60 y 1,00 y el puntaje fue de 0,96, indicando que los ítems son muy representativos. En la evaluación semántica, 22 (80%) ítems fueron considerados relevantes y 24 (100%) ítems fueron considerados claros y comprensibles por todos los profesionales.
Conclusión: Los ítems de la versión brasileña del instrumento fueron representativos, relevantes en la práctica clínica del profesional de salud para evaluar los obstáculos de adhesión a las precauciones estándar. Serán necesarios estudios evaluando las propiedades psicométricas del instrumento.

DESCRIPTORES: Salud; Personal de Salud; Equipo de Protección Personal; Estudios de Validación; Riesgos Laborales.

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INTRODUCTION

Biological risks represent a topic of worldwide interest, especially in matters of professional and patient safety in the health scenario. Standard Precautions (SP) are measures that must be followed by all health professionals that act in patient care, regardless of their infectious state, with the purpose of reducing occupational risk and ensure patient safety and their own safety. Furthermore, the application of SP can minimize morbimortality due to crossed transmission of infectious contagious diseases and reduce treatment costs of unexpected damage[1,2].

SP involve the use of Personal Protective Equipment – PPE (gloves, mask, protection goggles, gown) when there is the possibility of contact with blood, body fluids, secretions and excretions of the patient except for sweat. Besides that, SP includes hand hygiene, correct handling and disposal of sharp instruments, and care with the environment and devices in contact with the patient[1].

In Brazil, the governmental regulatory standard 32 established the mandatory nature of the application of SP by health professionals, as well as the training of these workers, and the fundamental material supply for their protection at the moment of admission of patients and during their daily work activities[3]. However, studies have reported that adherence to SP among health professionals has not always happened[4-9].

Factors like availability and access to SP favor their implementation[10]. On the other hand, the lack of materials and personal beliefs can be obstacles to adherence[11]. Work overload, the physical structure of the workplace, organizational aspects and communication represent barriers to the adherence of professionals to these measures[12]. Exposure to risks resulting from low adherence to SP can have negative consequences such contamination of patients and of the environment; in this sense, studies to correct possible irregularities are sorely needed[13].

Deficient professional qualification stands out as one of the motives for low adherence to SP, considering that the personal perception of risks is linked to the extent of protection adopted. The behavior of assumed risk, lack of sensitivity towards this theme, and poor knowledge combined with lack of frequent and specific training, personal beliefs such as overconfidence, little knowledge about recent content published in the literature, overwhelming work hours, small staff size, and intense work rhythm are some of the factors that interfere with adherence to SP[14-16].

Many researchers have investigated the adherence to SP, but few have analyzed the behavior of professionals toward factors that influence in the adherence[17]. Therefore, it is necessary to understand the reasons and obstacles involved in the non-compliance with these measures in order to determine strategies and programs to promote safety culture among professionals[13,15].

It is, therefore, important to evaluate the obstacles that interfere with adherence to SP among health professionals. The Standard Precautions Questionnaire (SPQ) is an instrument developed and validated in France and has the objective of evaluating the sociocognitive determinants in the adherence to SP, including attitudes, behaviors, limitations and personal and organizational restrictions[18].

The cultural adaptation of an existing instrument is necessary when there are no instruments created specifically to a language and culture to measure the proposed objective. The process of adaptation of an existing instrument has been widely used due to benefits such as saving time and resources and the potential comparisons[19].

The objective of this study was to accomplish the cultural adaptation and semantic validation of the SPQ for Brazilian health professionals.

METHOD

This is a methodical study developed between 2017 and 2018, in a medium-sized hospital in the coastal lowlands of Rio de Janeiro. This hospital provides care in many specialties including Pediatrics, Gynecology and Obstetrics, General Clinic, Surgery Clinic and Adult Intensive Therapy. The institution performs emergency procedures, elective and emergency surgeries and laboratory and imaging tests.

The Standard Precautions Questionnaire (SPQ) is a questionnaire composed of 24 items distributed in 7 dimensions, 1- Interpersonal behavior; 2- Organizational constraints; 3- Intention to perform SP; 4- Social influence facilitating organization; 5- Attitude toward SP, 6- Organization; 7- Individual constraints. The response options vary in a scale from 1 to 5. The psychometric properties of the SPQ were tested (reliability analysis and structural validity) and were considered satisfactory in a French study. Construct and discriminate validity showed also that the questionnaire was capable of discriminating between professional categories[18].

Cultural adaptation and validation was carried out following the steps: translation, consensus on the Portuguese version, evaluation by a panel of experts (face and content validity), back-translation, consensus on the Portuguese version and comparison with the original version, and semantic evaluation[20].

The instrument was translated by two independent translators, native French speakers.

A consensus version of the two translations was obtained, and the consensual Portuguese version 1 of the instrument was consolidated.

Face and content validity were performed by an expert committee composed by 5 specialists (4 nurses and 1 psychologist). The experts received a translated questionnaire version in a meeting, receiving explanations about the script and an informed consent term. Conceptual, cultural and idiomatic equivalences were evaluated among the experts and this resulted in the consensual version 2 of the instrument.

The Content Validity Index for individual items (CVI-I) and the Content Validity Index for scales (CVI-S/Ave) were adopted for the analysis of agreement rate among experts during the content validity process. The CVI-I was calculated based on the number of experts who attributed scores 3 or 4 (representative or very representative) to the items, subtracted from the total number of experts. Items with scores "1" or "2" had to be reviewed or eliminated. The CVI-S/Ave was based on the average to the CVI-I results in relation to the total number of items in the instrument[21].

The average percentage of agreement on the analysis of permanence of items is called Average Congruency Percentage (ACP) and values of 90 percent or higher are considered acceptable[22].

The consensual version 2 obtained in the last step was back translated to the original language, French. The objective was to verify the quality of the original versions and of the translated ones. These were forwarded to the author of the questionnaire, obtaining her approval.

The versions were compared and a Brazilian Preliminary Version of the SPQ was obtained.

The sample was formed by 21 health professionals, considering the saturation to responses to the itens. All professionals approached accepted to participate in this stage of the study. There were no refusals. The participants were selected through a random and simple draw using the list of health professionals of the institution who met the inclusion criterion: being a physician or a nurse and act in the direct provision of care for patients. The exclusion criterion was acting exclusively in administrative activities.

Semantic evaluation was made by physicians and nurses in their work environment. Data was collected by the researcher who explained the items and their evaluation regarding relevance, clarity and comprehension. The researcher delivered an envelope containing the consensual version 2 of the SPQ, a demographic questionnaire and the informed consent term, and waited for the participants to complete them. After completing the documents, the envelope was sealed and delivered to the researcher.

The data were typed, organized and analyzed in the Microsoft Excel® 2016 software. The IBM® SPSS software, version 20.0, was used to perform the statistics analyses. Data were analyzed through descriptive statistics with measures of central tendency (mean, median) and of dispersion (standard deviation).

This study was approved by the Research Ethics Committee in Brazil (CAAE: 61213916.4.0000.5243; Legal Opinion n° 2.623.232). Authorization for the cultural adaptation was granted by the author of the original instrument. The participants of the research had identity secrecy and confidentiality of the information assured, according to the recommendations of Resolution 466/12 of the National Health Counsel.

RESULTS

In the face and content validation by the panel of experts with five participants, some modifications in the instrument items were suggested. The evaluation took into consideration the clarity/comprehension and/or representativeness of each item (Table 1).

Table 1 – Modifications in the Standard Precautions Questionnaire (SPQ) items proposed by the experts. Rio das Ostras, RJ, Brazil, 2017 (continues)

Item	Suggested modification
1. SP are always efficient in reducing hospital infections.	Describe the abbreviation "SP" as "Standard Precautions" and add the word "measures". Remove the word "always"
2. If I follow SP protocols, I'll protect my patients from infections.	Add the pronoun "I", describe the abbreviation "SP" as "Standard Precautions", and add the word "measures"
3. Follow SP protocols, will protect myself from an infection.	Use the word "measures" instead of "protocols"; describe the abbreviation "SP" as "Standard Precautions"
4. The majority of my colleagues thinks that it is important to follow SP.	Use the expression "coworkers", describe the abbreviation "SP" as "Standard Precautions" and add the word "measures"
5. I am exposed to the risk of receiving a notification from Public Health leaders if I don't follow SP.	Use the word "warnings" instead of "observations". In relation to the "leaders" was used "superiors"
6. I am exposed to the risk of receiving a notification from nurses and assistants responsible for the hygiene if I don't follow SP.	Use the word "warnings" instead of "observations"
7. I am exposed to the risk of receiving a notification from the doctors, if I don't follow SP.	Use the word "warnings" instead of "observations"
8. Presence of material (quality, availability, and access) in all treatment places.	Use the expression "in my work environment" instead of "in all treatment places"
9. Having received training in SP.	Use the word "qualification" instead of "training"

10. Having recycling activities on SP.	Use the word "updating" instead of "recycling"
11. When the physician in charge has an exemplary attitude towards SP.	Use the word "medical professional" instead of "physician in charge"
12. When my colleagues have an exemplary attitude towards SP.	Use the expression "coworkers"
13. Unexpected events that come to muddle my work performance (urgency, requests from colleagues, new tasks to accomplish).	Use the word "situations" instead of "events", and the word "disturb" instead of "muddle"
14. Lack of time.	No suggestions.
15. Work load higher than normal.	Replace "normal" by "usual"
16.The complexity of SP protocols.	Describe the abbreviation "SP" as "Standard Precautions" and add the word "measures"
17. Lack of knowledge regarding SP.	Replace the expression "regarding" by "about"
18. Routine, habits and treatment staff.	Replace the word "treatment" by "work"
19. Personal beliefs regarding SP.	Replace the expression "regarding" by "about"
20. Problems related with material (quality, availability and access).	Replace the expression "with" by "to"

At least one expert attributed the score "2" (little representative) to four items of the SPQ (8, 9, 18 and 19) and 20 items were unanimously scored "3 or 4" (representative or very representative).

The CVI-I scores ranged from 0.60 to 1.00 (Table 2). The CVI-S/Ave, calculated as the average of the CVI-I scores in relation to the total number of items of the instrument (24/23), was 0.96.

Table 2 – Content Validity Index for individual items (CVI-I) for content and face validation by experts. Rio das Ostras, RJ, Brazil, 2017

Item	CVI-I	Item	CVI-I	Item	CVI-I	Item	CVI-I
Item01	1.0	Item07	1.0	Item13	1.0	Item19	0.8
Item02	1.0	Item08	0.8	Item14	1.0	Item20	1.0
Item03	1.0	Item09	0.6	Item15	1.0	Item21	1.0
Item04	1.0	Item10	1.0	Item16	1.0	Item22	1.0
Item05	1.0	Item11	1.0	Item17	1.0	Item23	1.0
Item06	1.0	Item12	1.0	Item18	0.8	Item24	1.0

The instrument was analyzed for semantic validation by 21 professionals among seven (33.3%) nurses, seven (33.3%) physicians and seven (33.3%) nursing technicians. Among them, the majority 11 (52.4%) was female. The average age of the professionals was 40.9 years (SD =7.19), the minimum age was 27 and the maximum age, 59. The most part of the professionals 13 (61.9%) reported not having received training on SP in the hospital (Table 3). More than half of the professionals 12 (57.1%) felt reasonably trained on SP.

Table 3 – Distribution of health professionals (n = 21) according to individual and professional variables in the semantic validation phase. Rio das Ostras, RJ, Brazil, 2017-2018

Variables	N	%
Sex		
Female	11	52.4
Male	10	47.6
Age		
25|–35 years	3	14.3
35|–45 years	12	57.1
45 or more	6	28.6
Occupational area		
Nurse	7	33.3
Nursing technician	7	33.3
Physician	7	33.3
Time in the position*		
< 05 years	2	9.5
05|–15 years	10	47.6
15|–20 years	4	19
< 20 years	4	19
Number of job bonds		
One	4	19
Two	12	57.1
Three or more	5	23.8
Hours worked per week		
40 hours	8	38.1
< 40hours	13	61.9
Work sector*		
General Clinic	7	33.3
Surgery Clinic	4	19
Pediatrics	4	19
Gynecology/Obstetrics	1	4.8
Other	5	23.8
Knowledge on SP*		
School or university	13	61.9
Lecture at the hospital	1	4.8
The two previous options	5	23.8
Hospital training on SP*		
Yes	7	33.3
No	13	61.9

*The item presented missing values.

As for time of experience in the position, the average was 13.9 years (SD = 6.85), with a minimum of 3 years and maximum of 33 years. Regarding to the weekly workload, the average was 47.7 (SD =11.8) hours. Among the professionals, 13 (61.9%) reported having a postgraduate degree. In relation to the number of job bonds of each professional, and the physicians worked in two or more institutions. The average number of job bonds was 2.1 (SD =0.76); most of the physicians had 2 to 4 employments.

In the semantic validation, 24 (100%) of the items were considered clear and understandable by all professionals, and 22 (80%) items were considered relevant.

Regarding the relevance of the items, only two items did not reach a satisfying result. The item 6 "I am exposed to the risk of receiving a notification from nurses and assistants responsible for the hygiene if I don't follow SP" showed a low relevance in the view of 10 (47.6%) professionals, mostly nurses (six, 60%). Most professionals (four, 80%) also evaluated as non-relevant the item "having received training formed in regard to the SP". As for the item 19, "personal beliefs regarding to SP", 10 (47.6%) of the professionals did not consider it relevant, mostly physicians (five, 50%). Half of the professionals who evaluated the item as not relevant (five, 50%) had not received training on SP. However, the participants considered the items clear and had no difficulty to understand them.

DISCUSSION

The process of adaptation and semantic validation of the SPQ Portuguese version was composed of the steps of translation, consensus on the Portuguese version, evaluation by a panel of experts (content and face validation), back-translation, consensus on the Portuguese version and comparison with the original version, and semantic evaluation[20].

The cultural adaptation was performed following the rigor described in the literature, including the use to CVI-I and CVI-S/Ave for the analysis of agreement among experts during the content and face validation process[21,22]. Despite of being a complex process, aspects pertaining to the culture and language were emphasized. The steps were strictly followed, aiming the quality of the adapted instrument[23-24].

In general, the SPQ contemplates items which approach possible factors that can become obstacles for health professional to adopt SP. Among the covered components, the sociocognitive determinants stand out, including personal, behavioral and service management-related aspects[18]. Such issues have been approached in many studies in Brazil and in the world and reflect problems of poor adherence to SP by health professionals[2,9,15,17].

In the face and content validation of the SPQ, the items were evaluated based on semantic, idiomatic, conceptual and experimental equivalence. As regards to the content and face validation, the CVI-I of the total number of items of the instrument was 0.96, suggesting that the SPQ is very representative.

However, the item about receiving warnings when SP is not followed and the item about personal beliefs about SP caused doubts among the health professionals.

The term beliefs generated doubts among professionals in view of the meaning of the word, which has a religious character. In fact, beliefs are understood as moral principles that individual acquire throughout their lives, and these values can be influenced.

The attitude of health professionals may be related to their beliefs, especially their perception of risk and in of consequences and seriousness of their actions. Thus, when professionals analyze the effectiveness of the use of SP, they can perceive the obstacles and overcome them. A study carried out to understand the factors related to the practice of hand hygiene reported that the analysis of beliefs and perceptions of nursing professionals about factors that interfere with adherence offers a basis for the planning and implementation of

educational strategies related to these measures[25].

Therefore, the item dealing with personal beliefs is determinant for the identification of possible obstacles for adherence to these measures among health professionals. According to a recent literature review, personal factors are considered the most complex and important for the perception of risk, just as overconfidence and lack of knowledge. However, factors related to the adherence to SP go beyond knowledge; thus personal beliefs are a strong factor with a direct influence on the attitudes of health professionals[17-26].

The results revealed that the most of the professionals who shared in the study had not received training on SP. Such training must be part of the continuing education process, using intervention and simulation studies, and aiming at the improvement of learning and development of critical reasoning[27-28]. A study carried out among emergency center nurses in Sirjan, Iran, showed a positive impact of an educational intervention on the knowledge scores about SP[29].

The absence of training and qualification of health professionals in SP can have negative consequences. An integrative review highlighted the importance of educational programs with innovative teaching strategies to identify the reasons for low adherence to SP[14]. It is also necessary to increase the professionals' perception of risk, so as to reduce the obstacles in the adoption of SP, promoting continuing education for health care staff[7].

As limitation factors, the results obtained here related to possible flaws in the knowledge of professionals about SP can interfere in the trust worthiness of the semantic evaluation of the instrument items.

CONCLUSION

The process of adaptation and semantic validation of the Portuguese version were concluded with success. The participation of physicians and nursing personnel allowed the interdisciplinary visibility on SP and allowed to observe the characteristics of knowledge about the subject. It was verified that the SPQ items were clear and understandable to the respective categories.

The results obtained during the process of cultural adaptation and semantic validation of the SPQ showed the relevance and importance to the clinical practice of physicians and nursing professionals.

It is believed that after the evaluation of the psychometric properties, in progress, the Brazilian version of the SPQ will be valid and reliable to evaluate the obstacles in the adherence to SP among Brazilian medical and nursing professionals. Thus, with the identification of these obstacles, health managers will have subsidies to implement actions to favor adherence, thus enabling better quality indicators in health care.

ACKNOWLEDGEMENTS

To the *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPQ) by the scientific initiation scholarship provided cod. 001.

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Received: 07/11/2018
Finalized: 12/08/2019

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