

CULTURAL ADAPTATION OF THE "QUESTIONNAIRES FOR KNOWLEDGE AND COMPLIANCE WITH STANDARD PRECAUTION" TO BRAZILIAN PORTUGUESE

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ABSTRACT

The aim of this study was to adapt the "Questionnaires for Knowledge and Compliance with Standard Precaution" to Brazilian Portuguese. This was a methodological study with the following steps: 1) initial translations; 2) synthesis of translations; 3) analysis by a committee of experts; 4) back translation; 5) semantic validation; and 6) pretest. The sample was composed of 42 nurses, 12 of which participated in the semantic validation, and 30 of which participated in the pretest. The study was conducted in a teaching hospital in the state of São Paulo, Brazil. The semantic validation showed that the questionnaires are understandable, easy to complete, and appropriate in regard to knowledge and compliance with standard precautions. The pretest confirmed the final version. Therefore, the process of cultural adaptation was shown to be satisfactory, and the questionnaires are adapted to Brazilian Portuguese, and their process of validation should be continued to test the psychometric characteristics. After that, the instruments will be ready for use in Brazil.

Descriptors: Universal precautions, nursing, health knowledge, attitudes, practice.

RESUMO

O objetivo foi adaptar para o Brasil o "Questionnaires for Knowledge and Compliance with Standard Precaution". Estudo metodológico, cujas etapas foram: 1) traduções iniciais; 2) síntese das traduções; 3) comitê de especialistas; 4) retrotradução; 5) validação semântica e 6) pré-teste. A amostra foi de 42 enfermeiros, sendo que 12 participaram da validação semântica e 30 do pré-teste. O estudo foi realizado em um hospital universitário do interior de São Paulo, Brasil. A validação semântica evidenciou que os questionários estão compreensíveis, fáceis de responder e adequados quanto ao conhecimento e adesão às precauções-padrão. O pré-teste confirmou a versão obtida. O processo de adaptação cultural mostrou-se satisfatório e os questionários encontram-se adaptados ao português brasileiro, e deve-se prosseguir com o processo de validação dos mesmos, para que as características psicométricas sejam testadas. Só assim, os instrumentos estarão prontos para utilização.

Descritores: Precauções universais. Enfermagem. Conhecimentos, atitudes e prática em saúde.

Título: Adaptação cultural do "Questionnaires for Knowledge and Compliance with Standard Precaution" para o português brasileiro.

RESUMEN

El objetivo fue adaptar los cuestionarios acerca del conocimiento y adherencia a las precauciones estándar para la cultura brasileña. Estudio metodológico, cuyos pasos fueron: traducción, síntesis de las traducciones, formación del comité de expertos, retrotraducción, validación semántica y pretest. La muestra fue compuesta por 42 enfermeros: 12 participaron de la validación semántica y 30 del pretest. Los enfermeros eran actuantes de un hospital universitario de São Paulo, Brasil. El proceso de adaptación fue satisfactorio y la validación semántica demostró que los cuestionarios son comprensibles, fáciles de rellenar y tratan de adecuado contenido acerca del conocimiento y adherencia a las precauciones estándar. El pretest confirmó la versión final. Los cuestionarios están adaptados y se debe realizar la validación de los mismos para que sus propiedades psicométricas puedan ser evaluadas. Solamente así podrán ser utilizados en Brasil.

Descriptores: Precauciones universales. Enfermería. Conocimientos, actitudes y práctica en salud.

Título: Adaptación cultural del "Questionnaires for Knowledge and Compliance with Standard Precaution" para el portugués de Brasil.

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INTRODUCTION

In the 1990s, the Centers for Disease Control and Prevention (CDC), in the United States, established the concept of standard precautions (SP),⁽¹⁾ which have the dual purpose to reduce healthcare-associated infections (HCAI), and to protect workers from exposure to potentially contaminated biological material (PCBM).

Instruments have been used to collect information on adherence to SP,⁽²⁻³⁾ showing that compliance is below that recommended.⁽⁴⁻⁵⁾ These instruments must be valid, consistent and reliable to guarantee the validity of results, and serve as support for both the planning of interventions and comparisons between cultures.⁽⁶⁾

A literature review⁽⁷⁾ on instruments that evaluate adherence by healthcare professionals to SP found that the majority do not address all of the topics recommended by the CDC.⁽¹⁾ It is noted that only a few studies explain the process of construction and validation of the items of an instrument.⁽³⁾

Of the studies conducted in Brazil, some instruments were designed to measure adherence to^(2,5) and knowledge of⁽⁵⁾ the SP; however, none presented their psychometric properties, a fact that interferes with the validity of the results.

Seeking to increase the contributions of the results obtained,^(3,7) the authors of this study conducted a systematic search of publications published between 1996-2010 in the databases Medline, Lilacs, ISI - Web of Knowledge, Scopus and CINAHL, and found an instrument about knowledge and adherence to SP that was constructed and validated in China.⁽⁴⁾

This instrument, entitled "Questionnaires for Knowledge and Compliance with Standard Precaution," was published in an indexed American journal.⁽⁴⁾ The questionnaires were validated as for their face and content. Using Cronbach's alpha, the adherence questionnaire obtained internal consistency of 0.93, and reliability by test-retest of 0.87. Yet the knowledge questionnaire showed internal consistency of 0.92 by Cronbach's alpha, and reliability of 0.86 by test-retest. The instrument was administered to 1444 nurses, and results showed low adherence to SP.⁽⁴⁾

The development of an instrument for the measurement of constructs is characterized by a costly process and requires an extended period of

time. Whenever possible, it is recommended that instruments be adapted cross-culturally so that they are used by different populations, a fact that warrants further evidence of their reliability and validity.^(6,8)

The use of a tool to assess a construct from one country to another requires attention with respect to the cultural relevance of the object of measurement for the population in which it will be used.^(6,8,9) This process is only possible when the construct reflects culturally relevant theoretical propositions in the two populations concerned. Moreover, the population on which the instrument will be applied should be similar to that for which the instrument was originally developed, as well as the type of measurement, place and conditions for its application.^(6,9,10)

Because the "Questionnaires for Knowledge and Compliance with Standard Precaution" have good psychometric properties, the aim of this study was to adapt it to Brazil.

METHOD

This was a methodological study of cultural adaptation to Brazilian Portuguese of an instrument that assesses nurses' knowledge of, and adherence to SP.

The research proposal was approved by the Research Ethics Committee under protocol number 1306/2011.⁽¹¹⁾ Authorization for adaptation, validation and use in Brazil was granted by the authors of the instrument.

The process of cultural adaptation followed national and international recommendations:^(10,12-13) 1) translation into Portuguese; 2) synthesis of the translations; 3) assessment of conceptual, cultural, semantic and idiomatic equivalences by the committee of experts; 4) back-translation; 5) obtainment of the Portuguese version and comparison with the original version of the instrument; 6) semantic validation; and 7) pretest with the final version of the instrument in Portuguese.

The methodological framework adopted consists on gathering the committee of experts after the translation and on the synthesis of the translations, with this order being followed by other national and international studies.^(12,13) The authors explain that the work of the committee before the back-translation can help identify

potential problems or failures of understanding related to the instrument items, which might not be noticed if the committee worked after the back-translation.

The questionnaires were originally constructed and validated in Chinese. Their construction was based on international guidelines on SP. The questionnaire on knowledge regarding the SP has 20 questions, with possible answers being "yes," "no" or "I don't know." One point is added for each "yes", whereas no point is added for the answers "no" and "I don't know." The highest possible score is 20 points, and the higher the score, the greater the knowledge.

The questionnaire on adherence to SP has 20 questions. This questionnaire was developed on a Likert scale ranging from 0 to 4 points. Four points were awarded for each "always" answer; 3 points for each "often" answer; 2 points for the "sometimes" answer; 1 point for "rarely;" and 0 for "never," with a possible total score ranging from 0 to 80 points. The higher the score, the greater the adherence by the individual to the SP.

In the step of translation into Brazilian Portuguese, two translations were performed by two independent translators whose native language was Brazilian Portuguese.⁽⁹⁻¹⁰⁾

As recommended,⁽¹⁰⁾ one of the translators was aware of the study objectives and concepts of the instruments, and had academic training in the medical field, which can generate a translation with more reliable equivalences when compared to the original version. The second translator was not informed regarding the investigation nor its concepts, and had no clinical knowledge, which results in a translation that more accurately reflects the language used by the general population.

Each translator produced a written report of the translations, and proceeded to the synthesis of the translations, for which a third translator had the task of mediating the discussions, trying to ensure that possible discrepancies were resolved. The third translator had knowledge of both Brazilian Portuguese and Chinese, and was a student in the penultimate year of an undergraduate nursing program. Thus, consensual versions of the questionnaire on knowledge regarding SP (QKSP) and the questionnaire on adherence to SP (QASP) were obtained.

With regard to the assessment, the committee of experts was composed of five judges: a nurse, an expert on cultural validation methodol-

ogy of instruments; two nurse specialists in occupational health; one nurse specialist in workers' health with extensive practical experience; and one bilingual translator (Portuguese-Chinese) who participated as the third translator in the process of synthesis of the translations of the questionnaires, and was considered key for the equivalences to be attained.

The role of the expert committee was to consolidate the translated version of the instrument and develop what would be considered its pre-final version. The decisions made by the experts intended to obtain equivalence in four areas:⁽⁹⁻¹⁰⁾

- a) semantic: evaluate the meaning of the words in an attempt to preserve the meaning and wording of the original items;
- b) idiomatic: some expressions and colloquialisms should be replaced with equivalent expressions in the target culture;
- c) conceptual: refers to the validity of the concept explored and events experienced by individuals in the target culture; the items can be equivalent as to the meaning, but not as to the concept;
- d) cultural: evaluates items that refer to experiences of a particular culture, in an attempt to compensate an insignificant item in the target culture for one that is significant.

All of the questions were presented to the experts. The suggestions were accepted when the percentage of agreement among the judges was at least 80%, i.e., at least four judges agreed with the answer.

The step of back-translation entails the translation of the questionnaire back to the original language, a process that aims to ensure that the translated version truthfully reflects the items of the content from the original version, highlighting conceptual inconsistencies in the translation process.⁽¹⁰⁾

Two independent translators whose native language is the source language of the instrument, in this case, Chinese, are recommended to this process. Neither of the translators had knowledge on the topic or were informed as for the objectives of the study.⁽¹⁰⁾

The translations were compared by the researchers so that consensus was reached, and the pre-final version of the instrument was obtained.

Semantic validation of the instrument was performed, with the purpose to verify whether the target population could understand all items of the instrument. This phase should always be performed before the pretest with a small sample of the target population.⁽¹³⁾

Semantic validation is one of the main steps of the adaptation process, because it is capable of identifying possible needs for changes to increase understandability without altering the conceptual, cultural, semantic and idiomatic equivalences.⁽¹⁴⁾

The pretest was performed after the semantic validation. This step is essential as it allows the researcher to assess the appropriateness of the type of data collection, identify the need for revisions, estimate the reliability and validity of the instrument, and detect problems related to content and scoring. In general, the instrument should be tested in a sample of 30 to 40 subjects for which it was designed, under conditions as close as possible to those expected when it will be used.⁽⁶⁾

The semantic validation was performed with 12 nurses, and the pretest with 30 nurses, all of which work in a university hospital in the interior of the state of São Paulo, Brazil. Data were collected between May and June of 2012.

The nurses were selected using the software Statistical Package for Social Sciences (SPSS), version 19.0. The forms for semantic validation followed the model proposed for cultural adaptation of the DISABKIDS instrument to the Brazilian culture,⁽¹⁴⁾ which consist of two forms for overall and specific evaluation. Other national researchers used these forms to perform semantic validation during processes of cultural adaptation.⁽¹⁵⁾

The overall evaluation form is composed of seven questions: what the respondent thought of the instrument; if the questions are understandable; if the content addressed is relevant to the respondent; if the respondent would like to change or add a reformulation to the items; or if there was any question that the respondent did not want to answer.

The specific form is targeted so that each question can be evaluated separately, and questions whether the professional considers each item to be important, if they had any difficulty understanding it, and if there is any need for reformulation.

In regard to the procedures of data collection, a sample of six nurses responded to the QASP, and the other six to the QKSP in order for the semantic validation to be less exhaustive for the professional by dealing with objective and discursive questions.

All of the professionals responded to the overall evaluation form. The questions from the specific evaluation form, composed of 20 discursive questions, were divided as follows: the first nurse from the sample answered questions 1-10, whereas the next answered 11-20, and so on.

Regarding the pretest, the nurses were contacted at their workplace and informed regarding the purpose of the study. Because these were self-administered questionnaires, the participants were instructed to leave their completed questionnaires in a sealed box positioned in the head nursing room of each sector, for later collection by the researcher responsible. This method of data collection was essential to ensure the anonymity of the participants, which provides greater reliability to the results.

RESULTS AND DISCUSSION

The main changes made by the committee of experts were: the term "handwashing" was replaced with "hand hygiene," because according to the CDC,⁽¹⁾ hand hygiene includes both handwashing with antiseptic soap and water, and use of alcohol-based products, which negates the use of water. The term "chicken pox" was substituted for "varicella;" the term "urine and fecal elimination" with "feces and urine," and "recapping of needles" with "active capping."

After this step, the version was back-translated and compared with the original version of the instrument by the researcher in Brazil and by the author of the instrument in China, who gave a favorable opinion. Thus, the pre-final version of the instrument was concluded, which was submitted to semantic validation to obtain the final version.

Semantic validation of the QKSP and QASP

Table 1 represents the results of the semantic validation by the overall evaluation form.

One nurse considered question 7 of the QASP to be unnecessary, which addresses the use of

Table 1 – Evaluation of the nurses according to the overall form used in the semantic validation. Teaching Hospital of Ribeirão Preto, São Paulo, 2013.

Variables	QASP*		QKSP [†]	
	(n=6)	%	(n=6)	%
What did you think of our instrument overall?				
Very good	4	66.7	3	50
Good	2	33.3	3	50
Average	–	–	–	–
Poor	–	–	–	–
Are the questions understandable?				
Easy	5	83.4	5	83.4
Average	1	16.6	1	16.6
Difficult	–	–	–	–
Are the questions related to nurses' adherence to, and knowledge of standard precautions?				
Yes	5	83.4	4	66.7
More or less	1	16.6	2	33.3
No	–	–	–	–

*QASP - Questionnaire on adherence to standard precautions

†QKSP - Questionnaire on knowledge of standard precautions

gloves in "procedures involving the possibility of contact with mucous membranes of the patient." Two nurses also considered question 17 unnecessary, which refers to "the use of disposable caps and shoe covers when there is the possibility of contact with blood spatter or body fluid, secretions or excreta."

One suggested a change with respect to the type of dichotomous response of the QKSP, which was applied with "yes," "no" and "I don't know" as possible responses. The possible answers "true," "false" and "I don't know" were suggested, because the participant claimed that because some questions were formulated in a negative way, the options "yes" and "no" caused confusion at the time of response. This fact can be verified in questions 6 and 8 in Table 4 below. After analysis, the suggestion was accepted.

Pretest: After completing the instrument, the workers were questioned regarding its understanding and clarity, as well as the meaning of the questions. Problems regarding understanding or difficulty filling out the questionnaires were not identified. The characterization of the sample

for semantic validation and pretest is shown in Table 2.

The completion of the pretest confirmed the final version of the instrument. The items from the QKSP and QASP are described in Tables 3 and 4, respectively, and the time to fill them in ranged from 15 to 25 minutes.

The semantic validation process for the QASP was satisfactory, although it was suggested that two items be excluded from the questionnaire. It was decided that these two items are important, and should not be removed.

With respect to item 7, which refers to use of gloves when contact with the patient's mucous membranes is possible, it is known that exposure of mucous membranes to PCBMs is also a gateway for contamination of the professional and HAIs.⁽¹⁶⁾ National researchers show that work injury from exposure to mucous membranes remains a common occurrence.⁽¹⁷⁾ Moreover, the mucous membranes themselves can contain secretions with the possibility of transmitting disease-causing microorganisms,⁽¹⁸⁾ and because hands are associated with HAIs, the use of gloves is essential.

Table 2 – Nurses according to variables: sex, age range, level of education, time of professional practice and work sector. Teaching Hospital of Ribeirão Preto, São Paulo, 2013.

Variables	(n=42)	%
Sex		
Female	40	95.2
Male	2	4.8
Age range (years)		
20 to 30	12	28.6
31 to 40	14	33.3
41 to 50	7	16.7
≥ 51	8	19
Omitted data	1	2.4
Level of education		
Undergraduate	10	23.9
Incomplete specialization	4	9.6
Specialization	16	38.0
Incomplete master's	3	7.1
Master's	6	14.3
Incomplete Ph.D.	2	4.7
Ph.D.	1	2.4
Time of professional practice (years)		
0 to 5	8	19
6 to 10	12	28.6
11 to 15	8	19
16 to 20	8	19
≥ 21	6	14.3
Professional practice department		
Clinical medicine	4	9.5
Clinical surgery	4	9.5
Neonatal ICU	3	7.1
Gynecology and obstetrics center	5	12.0
Dermatology/Immunology	2	4.8
Orthopedics	3	7.1
Psychiatry	3	7.1
First aid	8	19
Clinical stabilization room	4	9.6
Others (infectious diseases, outpatient, hematology, liver transplant, etc.)	6	14.3

With regard to question 17, which deals with adherence to the use of disposable caps and shoe covers, the CDC⁽²⁾ does not cite these as PPE in its most recent guidelines. Nevertheless, the World

Health Organization⁽¹⁶⁾ considers caps and shoe covers to be necessary PPEs, thus the importance of this item and decision to maintain it in the questionnaire.

1) I perform hand hygiene during intervals between caring for different patients;
2) I perform hand hygiene after removing gloves;
3) I wash my hands immediately after contact with PCBM;
Report frequency of use of gloves in procedures in which there is a possibility of contact with PCBM, listed below:
4) Blood collection;
5) Procedures involving the possibility of contact with urine or feces;
6) Procedures involving the possibility of contact with broken skin of the patient;
7) Procedures involving the possibility of contact with patient's mucous membranes;
8) Procedures that involve the possibility of contact with secretions from the patient's respiratory tract;
9) Intramuscular or subcutaneous injection;
10) Application of dressings;
11) Cleaning for blood removal;
12) Venipuncture;
13) Contact with blood samples;
14) I use a protective mask when there is a possibility of contact with blood spatter, body fluids, secretions or excreta;
15) I use protective goggles when there is a possibility of contact with blood spatter, body fluids, secretions or excreta;
16) I use a protective apron when there is a possibility of contact with blood spatter, body fluids, secretions or excreta;
17) I use disposable caps and shoe covers when there is a possibility of contact with blood spatter, body fluids, secretions or excreta;
18) I do not perform active capping of used needles, or, I perform the passive capping of needles with one hand:
19) I discard needles, razors and other sharp objects in specific disposal containers;
20) After work-related injuries with contaminated sharp objects, I immediately squeeze the area, then I wash it, apply antiseptic and put on a bandage;

Table 3 – Items in the QASP. Ribeirão Preto, São Paulo, 2013.

The semantics validation process of the QKSP was also considered satisfactory and contextual changes were not suggested. The pretest does not include an analysis of the psychometric characteristics of the questionnaires, and it is known that the validation process is critical to achieving success in the process of cultural adaptation of instruments.^(6,9) Therefore, the questionnaires are adapted to the Brazilian culture, but are in the validation process, so that they can be made available for use in Brazil.

CONCLUSION

This study was successful as for the cultural adaptation, and the questionnaires are adapted to Brazilian Portuguese, an important fact given the lack of valid instruments on the subject. Currently, the authors of the study are proceeding with the validation process of the questionnaires, so that the psychometric properties can be tested and disseminated. The data resulting from the application of this instrument may help develop preventive measures

1) Do you know what the SP measures are?
2) The SP should only be applied in cases of patients with a diagnosis of infection or patients who are in the incubation period for a particular infection;
3) Adherence to SP measures has the objective to protect the health care team;
4) Upon entering into contact with blood or any other potentially contaminated materials, one should immediately wash hands;
5) Hand hygiene should be performed during the care of different patients;
6) Since the use of gloves can prevent contamination of the hands, it is not necessary to practice hand hygiene after removing gloves;
7) Contact with objects, materials, equipment, clothing and individuals with contaminated personal protective equipment (PPE) should be avoided;
8) PPE should not be shared;
9) When performing oral care procedures or other procedures that may involve contact with the patient's mucous membranes, the use of gloves is not mandatory;
10) The use of gloves is necessary in blood collection or venipuncture procedures;
11) The use of gloves is necessary in procedures in which there is a possibility of hand contact with secretions or excreta from patients;
12) Gloves should be changed when caring for different patients;
13) In procedures for which there is a possibility of blood spatter, body fluid, secretions or excreta, a protective mask or face shield should be used;
14) In procedures for which there is the possibility of blood spatter, body fluid, secretions or excreta, individual protective goggles or face shields must be used;
15) In procedures for which there is the possibility of blood spatter, body fluid, secretions or excreta, an impermeable protective apron must be used;
16) In procedures for which there is the possibility of blood spatter, body fluid, secretions or excreta, disposable shoe covers and caps must be worn;
17) It is forbidden to fold, bend, or actively cap needles. When necessary, perform passive capping with only one hand. The containers for disposal must be near the work area;
18) When providing nursing care to patients with hepatitis C or syphilis, it is necessary to adopt only the standard precautions;
19) When providing nursing care to patients with active tuberculosis or varicella, it is necessary to adopt standard precautions, in addition to precautionary measures for droplets;
20) When providing nursing care to patients with intestinal or skin infections, it is necessary to adopt standard precautions, in addition to contact precautions;

Table 4 – QKSP items. Ribeirão Preto, São Paulo, 2013.

directed at workers exposed to risks arising from PCBM, and may support the development of education programs targeted to workers' health, as well as the development of protocols for patient safety.

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