Original Article

Translation and cross-cultural adaptation of the "Nursing Work Index – Revised" into brazilian portuguese*

Tradução e adaptação para a cultura brasileira do "Nursing Work Index - Revised"

Traducción y adaptación a la cultura brasileña del "Nursing Work Index - Revised"

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ABSTRACT

Objective: To translate and establish the cross-cultural validation of the "Nursing Work Index - Revised" into Brazilian Portuguese. **Methods:** Internationally recommended methodological procedures were followed strictly: Translation, back-translation, cross-cultural validation by an expert panel, and pre-test of the instrument. **Results:** The translation and back-translation steps were satisfactory. The cross-cultural validation of the instrument by the expert panel resulted in changes in most of the items of Portuguese version of the instrument. These changes were necessary to establish the cross-cultural equivalency between the English and the Portuguese versions of the instrument. Pre-test of the Portuguese version of the instrument also suggested the need to revise some items to make them clearer. **Conclusion:** Despite the complexity of the process of the translation and cross-cultural adaptation of an instrument, the Brazilian Portuguese version of the "Nursing Work Index – Revised" was found to have cross-cultural equivalency with the original English version of the instrument.

Keywords*:* Translating; Health facility environment; Professional practice; Physician-nurse relations

RESUMO

Objetivo: Traduzir e adaptar o "Nursing Work Index - Revised", para a cultura brasileira. **Métodos:** Para o procedimento metodológico seguiram-se as etapas recomendadas internacionalmente: tradução; retro-tradução; avaliação por um grupo de juízes e pré-teste. **Resultados:** As etapas de tradução e retro-tradução foram realizadas satisfatoriamente e a avaliação da versão síntese pelo comitê de juízes resultou em alteração na maioria dos itens assegurando as equivalências entre as versões original e traduzida. Durante o pré-teste, verificou-se a necessidade de reformulações de alguns itens tornando-os mais claros e de fácil compreensão. **Conclusão:** Destaca-se que apesar da complexidade do instrumento, o processo de tradução e adaptação cultural do Nursing Work Index - Revised, para a cultura brasileira, foi concluído com sucesso.

Descritores: Tradução; Ambiente de instituições de saúde; Prática profissional; Relações médico-enfermeiro

RESUMEN

Objetivo: Traducir y adaptar el "Nursing Work Index - Revised", a la cultura brasileña. **Métodos:** Para el procedimiento metodológico se siguieron las etapas recomendadas internacionalmente: traducción; retrotraducción; evaluación por un grupo de jueces y pre-test. **Resultados:** Las etapas de traducción y retrotraducción fueron realizadas satisfactoriamente, la evaluación de la versión síntesis por el comité de jueces resultó en alteración en la mayoría de los ítems, garantizando las equivalencias entre las versiones original y traducida. Durante el pre-test, se verificó la necesidad de reformulaciones de algunos ítems, tornándolos más claros y de fácil comprensión. **Conclusion:** Se destaca que, a pesar de la complejidad del instrumento, el proceso de traducción y adaptación cultural del Nursing Work Index – Revised, a la cultura brasileña fue concluido con éxito

Descriptores: Traducción; Ambiente de instituciones de salud; Práctica profesional; Relaciones médico-enfermera

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INTRODUCTION

Nursing professional practice is defined as a system formed by structure, processes and values that support the control of care provided to patients and of the environment in which this care is offered. The main characteristics of the environment favoring this practice are autonomy, control of the working environment and relationship between physicians and nurses[1].

The presence of these characteristics, in the nursing working environment, contributes to more satisfactory outcomes for professionals such as low burnout levels, and greater job satisfaction; for patients there are lower mortality rate and greater level of satisfaction with care received[2] and for the institutions it may result in decreased absenteeism and turnover[3].

Among the instruments available in the international literature to assess certain characteristics in the nursing work environment, there is the "Nursing Work Index - Revised" (NWI – R) which has been used by several different cultures and in different environment for nursing professional practice[1, 4-5].

NWI - R is an instrument made of 57 items, and the objective is to measure the presence of certain characteristics in the work environment which favors nursing professional practice. Among the total of items, 15 were distributed and three subscales were conceptually derived: autonomy, control over work environment and relationship with physicians. Among these 15 items, ten were grouped and a fourth subscale was derived: organizational support[1].

The subscale autonomy, made out of five items (4, 6, 17, 24 and 35) and the subscale control, formed by seven items (1, 11, 12, 13, 16, 46 and 48) represent the freedom nurses have in problem solving that affect quality of nursing care provided[1].

The subscale relationship with physicians, formed by three items (2, 27 and 39) involves professional respect to build effective communication to reach a common goal regarding patients' care[1].

Subscale organizational support was made out of ten items (1, 2, 6, 11, 12, 13, 17, 24, 27 and 48) derived from the three subscales previously mentioned and it is related with situations in which organization supplies support for nurses to develop their professional practice[1].

The measure scale used is Likert type varying from one to four, and the lower the score, the greater the presence of attributes favoring nurse professional practice. Scores for the subscales are obtained by the mean scores of respondent answers and they can range from one to four[1].

NWI – R has a highly reliability result with satisfactory internal consistency values for the total items and for the subscales. Validity was demonstrated by the significant differences between the presence of favorable characteristics to nurses' professional practice and burnout levels, measured by Maslach's Burnout Inventory[1].

As there are no instruments in the Brazilian culture that assess the presence of certain environment characteristics of nurses' professional practice, an instrument from another culture could only be used after its previous submission to methodology procedures of translation and cultural adaptation. The present study aimed to make a cultural adaptation to the Brazilian culture of the Nursing Work Index – Revised.

METHODS

The methodology for cultural adaptation had the following stages: translating the instrument to Portuguese; translating the instrument back to the source language; assessment of the translated version by a group of judges and a pre-test[6-7].

Before the study was conducted, the main author was authorized to use the instrument by the Ethical Research Committee in Medical Sciences at Unicamp (Process # 796/2006).

Translation of the instrument into Portuguese

The first stage for cultural adaptation is the translation of the instrument into the target-language which must be performed by at least two translators fluent in the source language and that are natives of the target language. One of the translators has to be aware of the objective and concepts of the instrument, whereas the other should not be aware. This stage results in two translations and the objective is to compare ambiguities or differences in the translated words. These ambiguities should be solved leading to a synthesis version from both versions[7].

NWI - R was translated by a Brazilian linguist, fluent in English who was not informed on the objective of the instrument and also by a Brazilian nurse, currently living in the United States that was informed on the goals. After translations, versions were assessed, compared by researchers, and the questions were settled together with the translators. Thus, a synthesis from both versions was obtained.

Translation of the instrument into the source language

This was the version of the synthesis translation, in Portuguese, and back to English by, at least, another two translators fluent in the target language and whose first language was the source language. This translator should not receive information on the concepts and purposes

of the instrument. This procedure is necessary to check the validity of the translation and to see if there are discrepancies in meaning and content between the original document and the translated one[7].

The synthesis of the two translations was translated into English by two American professors who currently live in Brazil and who were not aware of the purpose of the instrument, therefore two versions were obtained.

Assessment by a committee of judges

The judge committee should consolidate all versions produced into one single Portuguese version assessing the items regarding semantic, idiomatic, cultural and conceptual equivalence[7].

Semantic equivalence refers to the meaning of words whereas the idiomatic one refers to the colloquial expressions that are equivalent to the source language. Cultural equivalence refers to the terms and routine situations that are different between the cultures, and the conceptual equivalence refers to the words that present different cultural meanings[7].

The group of judges should be formed by methodologists, health professionals, language professors, translators involved in the process, and experts in the field of knowledge, they should review all translations to ensure the translated version is understandable and suitable to undergo pretest[6, 7-8].

Members of the committee received the following versions previously to the scheduled meeting: original, translated, synthesis version of the translations, back-translation, and specific instructions to assess semantic, idiomatic, cultural and conceptual equivalence. At the end of the meeting, the version of the instrument for pre-test was obtained.

Pre-test

Pre-test is the application of the instrument in a group of 30 to 40 subjects from the target-population, to ensure the adjusted version maintains equivalence to the original version[7], it also detects errors and confirms if the questions are understandable, assessing not only the quality of the translation but also practical aspects of its application[8].

This stage although it provides information on how people interpret the instrument, does not ensure validity and reliability of the instrument according to standards that guarantee success of the cultural adaptation process. Therefore, additional tests are recommended in the adapted version to check for these properties[7].

Participants were informed about the objectives of the instrument and received instructions to assess it regarding the time for filling it out, how clear it was, and if it was easy to understand. They were also asked to point out critiques and suggestions regarding the contents and for filling out the instrument.

RESULTS

Translation, synthesis version and back-translation were performed with no difficulty, because no significant changes were required.

The committee was formed by six judges: two nurse faculty members with experience in the methodology of the adaptation process and validation of instruments, two language professors, a Ph. D nurse with experience in the clinical area and, a Psychology professor who assessed the equivalences between the synthesis version and the other versions. The percentage of agreement between them, regarding each item, was calculated based on their answers before the meeting.

In the assessment of semantic equivalence, a 20% agreement percentage for items 1 and 7 was obtained, a 40% agreement for item 24, and a 60% agreement for seven items (12, 29, 33, 35, 44, 48 and 51). Regarding idiomatic equivalence, a 40% agreement percentage was observed for items 7 and 24, and a 60% agreement for items 35 and 36. The remaining items obtained a percentage equal to or higher than 80% for both equivalences.

As for cultural and conceptual equivalence, agreement percentage was equal to or higher than 80% for most items, except for item 24 "not being placed in a position of having to do things that are against my principles and professional techniques" which had 60% agreement regarding conceptual equivalence.

After a 4 hour discussion among the group of judges, 37 out of the 57 items from the instrument were changed. Thirteen items (1, 2, 3, 9, 10, 12, 17, 20, 27, 29, 31, 32 and 41) were changed regarding semantic equivalence, three items (5, 28 and 42) regarding idiomatic equivalence, and eight items (7, 13, 15, 16, 35, 36, 48 and 50) were pointed out because they needed changes in both semantic and idiomatic equivalences.

Items 4, 21 and 22 presented problems in cultural equivalence and item 49 regarding cultural and semantic equivalence. Items 37, 43, 52 and 53 presented problems in idiomatic and cultural equivalence.

Items 38, 44 and 51 were reformulated because they presented problems in semantic, idiomatic, and cultural equivalences and the item 24 in semantic, idiomatic, and conceptual equivalence. Only item 55 "use of a problem-oriented medical record" presented problems in all equivalences.

A consensus reached among judges regarding items 20, 21 and 22 in relation to organization models for nursing care and item 55 regarding medical record model, recommended that if items were not clear or

easy to understand, they should be checked together with the target-population, that is, during pre-test.

Regarding the name of the final version of the instrument, "Nursing Work Index - Revised - Brazilian Version", and the instructions for filling it out, there have been no changes. Answer scales was changed from "strongly agree" to "absolutely agree"; "somewhat agree" to "partially agree"; "somewhat disagree" to "partially disagree" and "strongly disagree" to "very strongly disagree". At the end of the meeting, as two judges had suggested the inclusion of a neutral score on the scale, the others agreed with the suggestion, however, after talking to the instrument author we saw that this change was not possible.

Forty six people took part in pre-test, 16 nurses of public institutions, 22 of private institutions who provide direct care to patients, and eight nursing professors[7].

During this stage, we checked that the average time to fill out the instrument was 13 minutes. Regarding presentation, four nurses (8.7%) reported they found it difficult to select answers and so we increased the space between the lines. Participants also had problems distinguishing answer options "partially agree" and "partially disagree", suggesting that inclusion of a neutral score would make it easier to understand; however, this suggestion could not be accepted.

According to the assessment of these nurses, 18 items had to be changed. Items number 1, 2, 5, 10, 11, 13, 28, 37 and 52 were changed according to semantic equivalence. Items 9, 32, 42 and 50 were changed to ensure suitability of concept equivalence, in which the expression "nursing team" was replaced by the word "nurses".

In five items, some words and expressions were replaced to ensure better semantic and cultural equivalence. Thus, in item 19 the word "(...) *provide* guidelines (...)" was replaced by "(...) *offer* guidelines (...)", in item 23 the word "(...) *departments* (...)" was replaced by "(...) *support services* (...)", in item 36 "(...) workers' *interest* (...)" was replaced by "(...) workers' *concerns* (...)", in item 45 "(...) *appealing* environment (...)" was replaced by "(...) *attractive* environment (...), and in item 48 "(...) takes care *of a patient* in consecutive days (...)" was changed to "(...) takes care *of the same patient* in consecutive days (...)".

Although nurses have reported understanding problems for items 20, 21, 22 and 55, regarding organization models for nursing care and problem-oriented medical record, no changes were suggested.

After suggestions from pre-test were accepted, a new assessment was required by three of the six judges for four items of the instrument. We have chosen to include definitions for items 20, 21, 22 and 55 to make them clearer and easier to understand.

Judges agreed with the changes in these four items, and recommended only the addition of the following expressions "team nursing", "total patient care" and "reference nurse", respectively to items 20, 21 and 22.

When the amount of items that were changed both in the pre-test and in the second assessment by the judges were considered, a new assessment was needed conducted by another professional fluent in English who suggested changes for semantic equivalence in items 3, 7, 17, 20, 21, 22, 27, 38 and 49. These changes did not involve content and contributed to improve understanding and, after that, we obtained the final version of the instrument "Nursing Work Index - Revised" - Brazilian Version (Appendix 1).

DISCUSSION

Translation, synthesis version and back-translation were satisfactorily performed. In the assessment by the group of judges, it was seen that in the individual analysis performed before the meeting there was an equal to or higher than 80% agreement among the members for most items. However, during the meeting suggestions have been indicated and accepted, not only because the agreement level was not 100% among judges, but also because they made understanding easier.

Due to the number of items and the complexity of the instrument, the group meeting was long and at the end consensus was not reached whether items concerning models for nursing care and problem-oriented medical records were clear and easy to understand.

As for the name of the instrument, judges agreed to keep the original name, "Nursing Work Index - Revised" and add "Brazilian Version". This decision was accepted because it made it easier for national and international scientific access by researchers.

Both members from the jury and nurses who took part of the pre-test suggested the inclusion of a neutral score on the measure scale to facilitate the selection of answers. However, this was not accepted because the author of the instrument explained that the absence of a neutral score makes individuals answer and if the scale was changed it would not be possible to make comparisons with international studies.

During pre-test, most suggestions made by nurses were related to semantic, cultural and conceptual equivalences. Changes made contributed because they made the items easier to understand and clearer such as, for example, some items where the expression "nursing team" was replaced by the word "nurse" because in the Brazilian culture the nurse rather than the whole nursing team is the one taking part on the management decisions, on the efforts to control costs and on the active organization of the working scale.

The result of the pre-test confirmed the difficulty in

understanding the items that had to do with nursing care organization and problem-oriented medical record pointed out by judges, one of the possible explanations for that is because these models are not used by most Brazilian hospitals.

Some authors highlighted that the translation process can be repeated until equivalences from the original and translated versions are obtained[7]. That is the why having another professional fluent in English contributing even after pre-test was essential to obtain the final version of the instrument, because items were complex and changes pointed out were significant. This experience showed us that this strategy can be adopted with complex instruments that are difficult to adapt to another culture.

FINAL CONSIDERATIONS

The process of cultural adaptation of the NWI - R, for the Brazilian culture followed the methodological steps internationally recommended and was successfully concluded.

After cultural adaptation, additional test to assess the psychometric properties of the instrument, such as reliability and validity are highly recommended considering that this process only ensures content validity. Therefore, it is important to use this instrument in other studies to assess its psychometric properties.

Considering that there are no instruments in Brazil assessing nursing work environment, the "Nursing Work Index - Revised" - Brazilian Version, contributes to favor the discovery of how the structure affects the results with patients, nurses and institutions and, thus, it can help fostering initiatives that ensure better quality of care, lower rates of absenteeism and turn over, lower level of exhaustion, and greater professional satisfaction.

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APPENDIX 1

Nursing Work Index - Revised –Brazilian Version

For each item in this section, please indicate the extent to which you agree that the following items are present in your current job. Circle the appropriate number.

	Present in your current job	Absolutely agree	Partially agree	Partially disagree	Very strongly disagree
1	Adequate support services allow me to spend time with my patients	1	2	3	4
2	Physicians and nurses have good working relationship	1	2	3	4
3	A good orientation program for newly employed nurses	1	2	3	4
4	A supervisory staff that is supportive of nurses	1	2	3	4
5	A satisfactory salary	1	2	3	4
6	The nursing controls its own practice	1	2	3	4
7	Efficient continuing education programs in the service for nurses	1	2	3	4
8	Career development opportunity	1	2	3	4
9	Opportunity for nurses to participate in management decisions	1	2	3	4
10	Support for new and innovative ideas about patient care	1	2	3	4
11	Enough time and opportunity to discuss patient care problems with other nurses	1	2	3	4
12	Enough registered nurses on staff to provide quality patient care	1	2	3	4
13	A nurse manager who is a good manager and leader	1	2	3	4
14	A chief nursing officer who is highly visible and accessible to staff	1	2	3	4
15	Flexible or modified work schedules	1	2	3	4
16	Enough staff to get the work done	1	2	3	4
17	Freedom to make important patient care and work decisions	1	2	3	4
18	Praise and recognition for a job well done	1	2		4
19	Nurse specialists who provide patient care consultation	1	2	3	4
20	"Team nursing" as the nursing delivery system ("Team nursing": when a nurse makes nurse assistant/technician responsible for care of a certain number of patients)	1	2	3	4
21	"Total patient care" as the nursing delivery system ("Total patient care": when nurses take total responsibility for their patients' needs during their work hours)	1	2	3	4
22	"Primary nurse" as the nursing delivery system ("Primary nurse": when nurses take up the responsibility for planning patient care from admission to discharge)	1	2	3	4
23	Good relationship with other support services such as general services and nutrition	1	2	3	4
24	Not being placed in the position of having to do things against my professional judgment	1	2	3	4
25	High standards of nursing care are expected by administration	1	2	3	4
26	A chief nursing executive is equal in power and authority to other top level hospital executives	1	2	3	4
27	A lot of teamwork between nurses and physicians	1	2	3	4
28	Physicians give high quality medical care	1	2	3	4

continue...

...continuing

Present in your current job		Totally agree	Partially agree	Partially /somewhat disagree	Totally disagree
29	Opportunity for advancement	1	2	3	4
30	Nursing staff is supported in pursing degrees in nursing	1	2	3	4
31	A clear philosophy of nursing pervades the patient care environment	1	2	3	4
32	Nurses actively participate in efforts to control costs	1	2	3	4
33	Working with nurses who are clinically competent	1	2	3	4
34	The nursing staff participate in selecting new equipment	1	2	3	4
35	A nurse manager backs up the nursing staff in decision-making, even if the conflicts is with a physician	1	2	3	4
36	An administration that listens and responds to employee concerns	1	2	3	4
37	An active quality assurance program	1	2	3	4
38	Staff nurses are involved in the internal governance of the hospital (such as for example policies and clinical practice committees)	1	2	3	4
39	Collaboration (joint practice) between nurse and physicians	1	2	3	4
40	A preceptor program for newly employed nurses	1	2	3	4
41	Nursing care is more based on nursing models than on medical models.	1	2	3	4
42	The nurses have opportunity to serve on hospital and nursing committee	1	2	3	4
43	The contributions that nurses make to patient care are publicly acknowledged	1	2	3	4
44	Nurse managers consult with staff on daily problems and procedures	1	2	3	4
45	The work environment is pleasant, attractive and comfortable		2	3	4
46	Opportunity to work on highly specialized patient care units	1	2	3	4
47	Written, up-to-date nursing care plans for all patients	1	2	3	4
48	Being designed a patient foster continuity of care (that is: the same nurse takes care of the same patients in consecutive days)	1	2	3	4
49	Regular, permanently assigned staff nurses never have to float	1	2	3	4
50	The nurses actively participate in developing their work schedules (that is: what days they work; days off, etc.)	1	2	3	4
51	Standardized policies and procedure	1	2	3	4
52	Use of nursing diagnoses	1	2	3	4
53	Floating, so that staffing is equalized among units	1	2	3	4
54	Each nursing unit determines its own policies and procedures	1	2	3	4
55	Use of problem-oriented medical record (system of organizing medical records, where notes, therapy and diagnoses are related with an specific problem)	1	2	3	4
56	Working with experienced nurses who "know" the hospital	1	2	3	4
57	Nursing care plans verbally transmitted from nurse to nurse	1	2	3	4

Translated from: Aiken LH, Patrician PA. Measuring organizational traits of hospitals: the Revised Nursing Work Index. Nurs Res. 2000;49(3):146-53.