

● Original article

## CROSS-CULTURAL ADAPTATION OF A WOUND ASSESSMENT INSTRUMENT

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**Objective:** To translate and culturally adapt a chronic wound healing assessment instrument into Brazilian Portuguese.

**Method:** A methodological quantitative study was carried out based on the following stages: translation, translation synthesis, back-translation, revision by an expert committee, and pre-test. The research was carried out in the healthcare units of the cities of Itajubá and Três Corações, in the state of Minas Gerais, with a sample made up of 30 stomal therapy nurses and nurses with clinical practice in wound care. Content validity was evaluated by means of calculation of the content validity index and the instrument's feasibility. **Result:** The instrument was considered of easy application and understandability, indicating that it can be used in the Brazilian culture. Regarding feasibility, the instrument's average filling time was three minutes. The final instrument, with alterations suggested by the experts, was sent to the author and approved. **Conclusion:** An instrument applicable to the Brazilian reality was created.

**DESCRIPTORS:** Wounds and Injuries; Reproducibility of Results; Translation; Nursing Methodology Research; Leg Ulcers.

### ADAPTAÇÃO TRANSCULTURAL DE UM INSTRUMENTO DE AVALIAÇÃO DE FERIDAS

**Objetivo:** traduzir e adaptar culturalmente o instrumento de Avaliação da Cicatrização de Feridas Crônicas para a língua portuguesa do Brasil. **Método:** estudo quantitativo, tipo metodológico, seguindo as etapas tradução, síntese das traduções, retrotradução, revisão por um comitê de especialistas e pré-teste. A pesquisa foi realizada nas Unidades de Saúde de Itajubá e Três Corações - Minas Gerais com amostra de 30 enfermeiros estomaterapeutas e/ou com prática clínica no tratamento de feridas. Foi avaliada a validade de conteúdo por meio do cálculo do Índice de Validade de Conteúdo e praticabilidade do instrumento. **Resultado:** o instrumento apresentou-se como de fácil aplicação e compreensibilidade demonstrando ser aplicável na cultura brasileira. Quanto à praticabilidade, o tempo médio de preenchimento do instrumento foi de três minutos. O instrumento final, com alterações sugeridas pelos juízes, foi encaminhado e aprovado pelo autor. **Conclusão:** originou-se um instrumento aplicável à realidade brasileira.

**DESCRIPTORES:** Ferimentos e lesões; Validade dos testes; Tradução; Pesquisa metodológica em Enfermagem; Úlcera de perna.

### ADAPTACIÓN TRANSCULTURAL DE UN INSTRUMENTO DE EVALUACIÓN DE HERIDAS

**Objetivo:** Traducir y adaptar culturalmente el instrumento de Evaluación de la Cicatrización de Heridas Crónicas al portugués brasileño. **Método:** Estudio cuantitativo, tipo metodológico, siguiéndose las etapas de traducción, síntesis de traducciones, retrotraducción, revisión por comité de expertos y prueba piloto. Investigación realizada en las Unidades de Salud de Itajubá y Três Corações - Minas Gerais. Muestra de 30 enfermeros estomaterapeutas y/o con práctica clínica en el tratamiento de heridas. Fue evaluada la validez de contenido mediante el cálculo del Índice de Validez de Contenido y viabilidad del instrumento. Resultado: El instrumento se presentó como de fácil aplicación y comprensibilidad, demostrándose aplicable a la cultura brasileña. Respecto a la viabilidad, el tiempo promedio de completado del instrumento fue de tres minutos. La versión final, con cambios sugeridos por los expertos, fue remitida y aprobada por el autor. **Conclusión:** Se dio origen a un instrumento aplicable a la realidad brasileña.

**DESCRIPTORES:** Heridas y Lesiones; Reproductibilidad de los Resultados; Traducción; Investigación Metodológica en Enfermería; Úlcera de la Pierna.

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**Received:** 30/08/2017

**Finalized:** 03/04/2018

## ● INTRODUCTION

Considered as a global epidemic<sup>(1)</sup>, chronic wounds (CWs) mostly affect the elderly population and represent high costs for the healthcare area. They strike about 1% to 2% of the overall population, with 0.76% and 1.42% incidence in men and women, respectively<sup>(2-3)</sup>.

Chronic wounds are defined as skin surface ruptures including one or more layers with a slow healing process<sup>(4)</sup>. Therefore, to minimize healing time and consequently reduce costs for patients and families, the treatment of chronic wounds depends on an objective diagnosis, especially based on wound assessment and choice of an appropriate therapy treatment<sup>(5-6)</sup>.

In this setting, nurses stand out, because they are healthcare professionals responsible for providing care to patients with injuries. Their role is to establish strategies for prevention, assessment, and treatment of wounds, aiming at tissue repair in a short time to minimize complications and impairments<sup>(7)</sup>.

Wound treatment requires, in addition to professional ethics, knowledge basis to evaluate patients' skin discontinuity and their health status, identifying factors that may impair healing and intervening in every phase of the tissue repair process. A good assessment allows nurses to make safe decisions for an effective treatment<sup>(8)</sup>.

However, care provided to patients with wounds is effective when all assessment's observations and interventions' results are written and recorded<sup>(9)</sup>.

The availability of an instrument in Portuguese will provide a tool for the practice of healthcare professionals, especially nurses, both for investigative research and intervention design, in addition to guiding professionals in the care context provided to patients with CWs.

The RESVECH 2.0 (Results Expected from Chronic Wound Healing Assessment) instrument was developed to assess the CW healing process (lower limb ulcers and pressure injury). In its original version, the RESVECH 2.0 instrument consists of six dimensions that characterize wound tissue repair: dimension, depth, edges, types of tissue, exudate, and infection/inflammation<sup>(10)</sup>.

Each item has descriptions on the wound presentation at the time of evaluation, with one score for each item. Only the infection/inflammation item has sub-items in which they are individually scored. The scores attributed to each dimension must be added, and the total value, which may range from zero (healed wound) to 35 (worse wound healing status), will be the instrument's final score<sup>(10)</sup>.

Cronbach's alpha of 0.72 was obtained in the first evaluation. In other evaluations, it ranged from 0.73 to 0.84, ensuring reliability of the questionnaire. In addition, it was observed that this value increases as far as the wound positively progresses. The questionnaire presented a correlation between its variables and proved sensitive to internal changes of the study sample.

The present study is justified due to its importance in the social and professional context, because it will provide a questionnaire for healthcare professionals to evaluate chronic wounds in a systematic and objective way. In this context, the objective of the present study was to translate and adapt a questionnaire entitled RESVECH 2.0, for being an instrument that enables high-quality health care, significantly reducing the tissue repair process, and, consequently providing patients with a better quality of life.

## ● METHOD

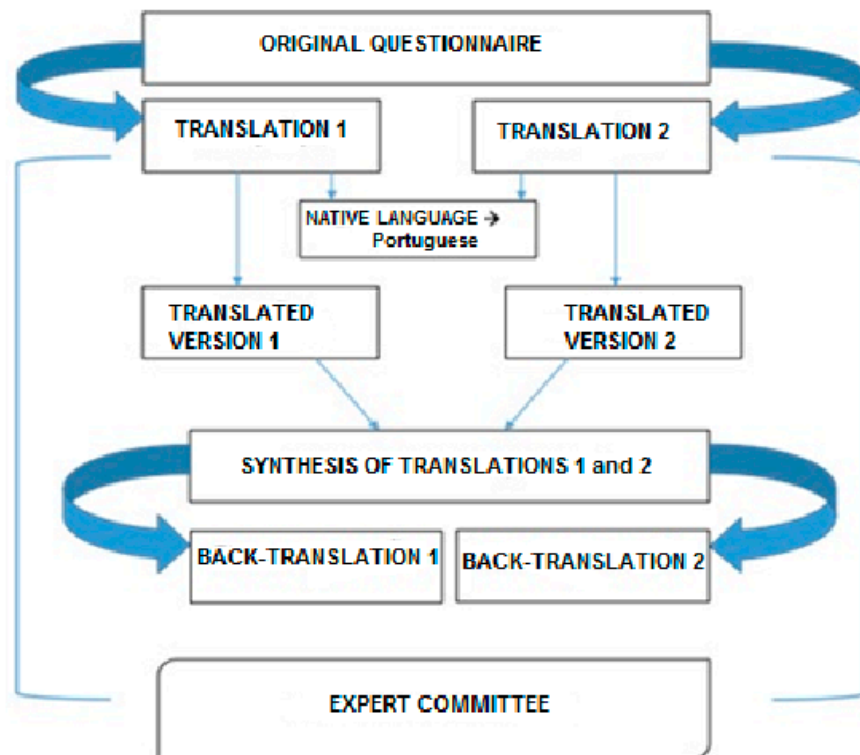
This was a methodological study in which the translation and cultural adaptation of the RESVECH 2.0 instrument into Brazilian Portuguese was carried out. The authors obtained approval of the research ethics committee of the Vale do Rio Verde University-UninCor, under protocol no. 2.082.722 and author's informed consent form for translation procedure.

In the cultural adaptation of the RESVECH 2.0 questionnaire into Portuguese, methodological stages internationally recommended were followed, with the aim of achieving the instrument's complete adaptation, maximizing semantic aspects (keeping the same meaning of each item after translation into another language), idiomatic aspects (search for corresponding expressions or explanations in the target language, since idiomatic expressions cannot be translated), experiential aspects (evaluating whether the terms used in the instrument are suitable for clinical practice in the language's culture where the scale is being validated), and conceptual aspects between the original instrument and the instrument adapted<sup>(11-15)</sup>.

The cross-cultural adaptation comprises five stages: initial translation, translation synthesis, back-translation, evaluation by an expert committee, and pre-final version test<sup>(12)</sup>.

In the first stage (initial translation), the RESVECH 2.0 instrument was sent to two independent bilingual translators whose native language is Portuguese. The second stage (translation synthesis) sought content, cultural, semantic, and conceptual equivalence regarding the original instrument, with translations carried out by the researchers. In the third stage, back-translation was carried out by two native Spanish translators with proficiency in Portuguese.

In the fourth stage, the translated and the back-translated versions, as shown in Figure 1, were compared by an expert committee with the purpose of establishing semantic, idiomatic, cultural, and conceptual equivalences between the original questionnaire and the Portuguese version. In this stage, the expert committee produced the instrument's final version for pre-test in Portuguese.



**Figure 1** – Guidelines for the process of cross-cultural adaptation of self-report measures, Spine, 2000

Content validity was evaluated by means of calculation of the content validity index (CVI), which evaluates the level of agreement among experts on specific aspects of the adapted questionnaire and its items<sup>(16)</sup>.

The experts scored the items with values from one to four, namely: 1 – non-equivalent; 2 – impossible to evaluate equivalence without revising the item; 3 – equivalent, but requires minor alterations; and 4 – totally equivalent<sup>(16-17)</sup>.

The score was recorded by means of the sum of the items highlighted with “3” and “4”, dividing the value by the number of experts. The items that obtained scores “1” and “2” were revised. Level of agreement equal to or higher than 0.8 was agreed for the research<sup>(16-17)</sup>.

After suggestions of the committee members, the instrument’s pre-final version used for pre-test was obtained. This version was applied to a convenience sample made up of 30 stomal therapy nurses and nurses with clinical practice in wound care for at least 12 months. The instruments were self-administered and the data were individually collected in February 2017.

In addition, nurses were asked to fill in a form with individual characteristics (age, gender, and graduation and specialization year) and a questionnaire for feasibility evaluation of the RESVECH 2.0 instrument.

The feasibility assessment questionnaire was developed and validated in Brazil<sup>(16)</sup>, and has the purpose of checking how easy individuals respond to the questionnaire and finding out the time spent to fill in measuring instruments<sup>(18)</sup>.

## ● RESULTS

The cultural adaptation process was systematically carried out following the stages: translation, translation synthesis, back-translations, and expert committee. The results were successfully achieved.

The initial translation was independently carried out by a nurse with knowledge in wounds and a language teacher, resulting in two versions: translated version one (TV1) and translated version two (TV2).

An analysis of divergences of both versions was carried out by the two translators together with the researcher. The results were summarized, resulting in a translated version based on consensus called translated version one and two – TV1V2.

In the back-translation stage, both translators were not informed of the research’s concepts and objectives, finishing with two independent translations. The translators did not report any difficulties with the translations in any of the stages.

Regarding the CVI, two items present values lower than 0.8 (exudate with 0.78 and edges with 0.67), indicating the need for revisions so they could meet the equivalences, as shown in Table 1.

**Table 1** – Content Validity Index (CVI) among members of the expert committee. Itajubá, Minas Gerais, Brazil, 2017

Semantic/idiomatic, conceptual, and cultural equivalence	Members									T3/4*	CVI**
Experts	1	2	3	4	5	6	7	8	9		
Wound dimensions	4	4	3	4	4	4	4	4	4	9	1
Depth/tissues affected	3	3	4	3	3	3	4	3	4	9	1
Edge	3	3	3	3	3	2	1	3	1	6	0.67
Type of tissue in the wound bed	3	3	4	3	3	4	4	3	2	8	0.89
Exudate	3	3	4	3	4	2	1	3	3	7	0.78
Infection/inflammation	4	4	4	4	4	3	4	4	4	9	1
Comprehensiveness	3	4	4	3	3	3	3	3	3	9	1
Relevance	4	4	4	3	3	4	3	4	3	9	1

\*T3/4= Total responses 3 and 4. \*\*CVI = Content Validity Index

Therefore, changes were carried out according to experts' suggestions. A face-to-face meeting with the expert committee was not required, because the suggestions for alterations were similar among the expert committee and promptly described.

The item "edge" was replaced with the word "margin", most often used in the Brazilian culture, and its descriptions were maintained. However, a brief and prompt explanation of each characteristic was requested. The item "exudate" was changed according to the Brazilian culture, where healthcare professionals evaluate its amount as small, medium, and large, in accordance with the experts' suggestions.

In spite of presenting appropriate CVI, two experts suggested small changes in the items "depth" and "type of tissue in the wound bed" to help in the wound assessment process, which were accepted. In the item "depth", the word "epithelialization" was added in the first characteristic, and types of necrosis were described "in the wound bed".

The results of assessments of the expert committee showed semantic/idiomatic, cultural, and conceptual equivalence between the original instrument and translations/back-translations. The final instrument, with all alterations suggested by the experts, was sent to the author for approval and they were all accepted.

After the alterations, the instrument's pre-final version was submitted to pre-test for evaluation of individuals' understanding. Thirty nurses participated in this stage, with a mean age of 35.9 years, being 28 (93.3%) women and two (6.7%) men. Twenty-one (70%) nurses were graduated for more than ten years. Regarding professional qualification, 26 (86.7%) had a specialization; three had a master's degree, and one was attending a doctorate program.

**Table 2** – Feasibility of the Brazilian version of the RESVECH 2.0 instrument according to participants in the understanding evaluation pre-test. Itajubá, Minas Gerais, Brazil, 2017

Questions	TD		PD		NO		PA		TA		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
1. It was easy to understand the questionnaire's instructions.							9	30	21	70	30	100
2. It was easy to understand the questionnaire's questions.							8	26.7	22	73.3	30	100
3. It was easy to check the questionnaire's responses.							9	30	21	70	30	100

TD – Totally disagree; PD – Partially disagree; NO – No opinion; PA – Partially agree; TA – Totally agree.

During the pre-test, three individuals (10%) had doubts with the item five regarding "dry or humid exudate". One nurse reported "I do not know what is dry exudate, because exudate has to be humid". Another nurse suggested that the question would be slightly clearer with "yes or not, instead of dry or humid". One nurse questioned: "Dry exudate? For me, it is exudate or not". Therefore, in spite of most individuals not reporting difficulty in understanding the item, it was not altered after the pre-test.

Regarding the understanding of other items of the questionnaire, only one nurse reported not knowing the meaning of "tissue compatible with biofilm" and never having seen a "hypergranulation".

Regarding feasibility, the average filling time of the RESVECH instrument was three minutes. The items' most common response was the option totally agree, as shown in Table 2. Twenty-one (70%) nurses reported that the questions were easily understood and 21 (70%) reported that the instrument's items were easy to fill. Most individuals (22=73.3%) reported that the items were easy to understand.

## ● DISCUSSION

Care provided to patients with wounds must be based on a comprehensive care, and wound assessment is an essential part of this process<sup>(19)</sup>. In order to guide healthcare professionals in this assessment, the use of instruments that will help them in the treatment of wounds and the choice of appropriate therapy treatment is of utmost importance, in addition to enabling the monitoring of the injury's evolution during the entire tissue repair process in each healing stage<sup>(20)</sup>.

In this context, the availability of an instrument for the Brazilian culture will contribute to high-quality of care provided to patients with wounds. Several studies have used the RESVECH 2.0 instrument for wound assessment control<sup>(21)</sup>.

One study carried out in Spain sought to determine the health-related quality of life (HRQOL) of patients who suffer from venous ulcers and correlate the severity status of the wound with the loss of HRQOL, as well as to identify the most negatively affected HRQOL aspects due to the presence of venous ulcers. The data were collected during a period of three to five months. The RESVECH 2.0 scale was used to monitor wounds. The MAID scale was used to measure the severity of the wounds. The Spanish version of the Charing Cross Venous Ulcer questionnaire (CCVUQe) was used to assess quality of life. The data showed that venous ulcers affect the HRQOL of patients, especially their emotional status. Relationship between the severity of the wounds and loss of HRQOL was found. The presence of non-viable tissue, exudate control, and infection determine the loss of HRQOL<sup>(22)</sup>.

One study carried out in Portugal aimed at evaluating the clinical profile of a sample of individuals with CW in a cancer institution by means of the RESVECH 2.0 scale, in addition to characterizing the sociodemographic profile of a cancer patient with CW, validating the RESVECH 2.0 instrument, and evaluating the quality of life (QOL) of these individuals. The results of the validation present the scale with reliability criteria, showing a good internal consistency, with Cronbach's alpha of 0.735 for the first observer, and 0.741 for the second observer. A significant intraclass correlation coefficient (ICC) of 0.979 was found. For the dichotomous items of the scale, Cohen's kappa coefficient ranging from 0.78 to 0.96 was found. The authors concluded that the RESVECH 2.0 scale is an effective tool that represents an assessment and record instrument for CW control<sup>(23)</sup>.

In the present study, the translation and adaptation of the wound assessment questionnaire followed international recommendations according to the translation process, translation synthesis, back-translation, and evaluation by the expert committee<sup>(10)</sup>. These stages were systematically followed without complications, resulting in a translation reliable to the original instrument.

The use of methodological standards internationally accepted to carry out cultural adaptation facilitates the reproducibility of the results and enables comparison among different populations<sup>(10)</sup>.

The purpose of the cultural adaptation of the RESVECH 2.0 instrument was to find equivalence between the original version and the Brazilian version, since this is a complex process. The term "cultural adaptation" is used to comprise a process that analyzes language/translation during the development of a questionnaire for use in another country<sup>(10)</sup>. Researchers must consider not only the language, but also the region's cultural differences of health perception, and differences of cultural context and lifestyle of the population in question<sup>(24)</sup>. Consequently, it is possible to keep language and cultural equivalence of an instrument's items, maintaining their relevance even if they have to be altered for the culture of a different country<sup>(25)</sup>.

It is worth mentioning that the items do not only have to be linguistically well translated, but also culturally adapted to keep the instrument's content validity in several cultures<sup>(11)</sup>. Therefore, the impact of a disease or its treatment can be more reliably described in a similar way in multicenter or multinational trials.

Regarding content validity, the expert committee is an important stage to obtain intercultural equivalences<sup>(11)</sup>. Therefore, the experts' suggestions were essential to adjust the instrument for its use in the Brazilian setting. All suggestions from the experts were accepted, even when the item evaluated presented satisfactory content validity index, because the suggestions enable to clarify the questions, resulting in an instrument of easy understanding and application.

Content validity is an essential stage because it is related to judgments regarding the instrument. These judgments are carried out by different experts in the subject, whose responsibility is to analyze the representation and relevance of the issues regarding the content to be measured<sup>(25)</sup>. In the adaptation process, the committee of experts also has the role of evaluating if the items correspond to the cultural reality<sup>(26)</sup>.

All adaptations carried out in the final instrument were sent to the author for appreciation and approval, which strengthens the instrument's authenticity in relation to the original.

In the instrument's pre-test carried out with 30 nurses, good acceptance and easy understanding were found. The fact of three participants having presented only one doubt regarding the understanding of the item "exudate" of the instrument shows the methodological rigor of the present study, enabling accurate translation and cultural adaptation within current standards. The adoption of a clear, simple, and easy access language also enabled the fast understanding of the instrument.

Although one nurse did not know the meaning of the terms "biofilm" and "hypergranulation" during the questionnaire's evaluation, the meaning of every term used for wound assessment was explained.

Assessments carried out by the expert committee during pre-test contributed to the easy understanding of the instrument's items and enabled to evaluate the use of the instrument in practice.

## ● CONCLUSION

The RESVECH 2.0 instrument was successfully adapted for the Brazilian culture, following the stages recommended by the international literature.

The authors expect that the cultural adaptation of the RESVECH 2.0 instrument may facilitate the wound assessment process by healthcare professionals, and may be used in other studies for quality of life assessment correlating with an objective measure.

The instrument's validation study must be carried out in order to verify its measuring properties.

**Picture 1** – Characteristics of the expert committee. Itajubá, Minas Gerais, Brazil, 2017

Expert	Profession	Experience
01	Nurse, master of nursing	University professor with experience in the healthcare area in wound treatment.
02	Nurse, doctor of nursing	University professor with experience in research methodology.
03	Professor	Graduated in languages.
04	Nurse, doctor of nursing	Experience in care provided to patients with wounds and studies involving quality of life and elderly people, adaptation and validation of instruments.
05	Nurse, master of nursing	University professor with experience in the healthcare area and studies involving wounds and therapy communication.
06	Stomal therapy nurse	University professor with experience in the healthcare area and studies involving wounds, incontinence, and stomas.
07	Nurse, master of nursing	University professor with experience in research methodology.
08	Nurse, supervisor at wound treatment unit	University professor with experience in the healthcare area in wound treatment.
09	Stomal therapy nurse, responsible for an outpatient unit and wounds	Experience in the healthcare area in wound treatment.

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