Validation of an instrument to assess patients with skin conditions

Validação de um instrumento para avaliação do cliente com afecções cutâneas

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Abstract

Objective: To validate the content and applicability of the assessment protocol for patients with skin conditions, considering clinical, mental and spiritual dimensions.

Methods: The Delphi method was used for validation, with seven nurse specialists as judges. The following qualitative evaluation and quantitative measures were used: mean content validity indices, agreement rate and Spearman's rank correlation coefficient.

Results: In regard to the agreement rate in phase one, two parts of the protocol attained the quality cut-off point of 0.9, and in phase two, three parts needed revision. The mean content validity rate reached 0.6 in phase one and 0.9 in phase two, with variability of 30% falling to 10%. The value of the agreement rate in phase one was identical to that of content validity, with variability of 40%. In phase two, it reached 0.8 with a variation of 20%.

Conclusion: The instrument was validated and its applicability is feasible.

Resumo

Objetivo: Validar conteúdo e aplicabilidade do protocolo de avaliação do cliente com afecções cutâneas, considerando dimensões clínicas, mentais e espirituais.

Métodos: Para validação foi utilizada a Técnica Delphi, sendo juízes sete enfermeiros especialistas. Utilizou-se avaliação qualitativa e medidas quantitativas: índices médios de validade do conteúdo, e de taxa de concordância, além do coeficiente de correlação ordinal de Spearman.

Resultados: Sobre a taxa de concordância na fase um, duas partes do protocolo alcançaram o corte de qualidade - 0,9 e na fase dois, três partes necessitaram revisão. O índice médio de validação dos conteúdos atingiu 0,6 nas fases um e 0,9 na dois, tendo variabilidade de 30% com queda para 10%. Na taxa de concordância, na fase um, o valor foi idêntico ao de validação do conteúdo com variabilidade de 40%. Na fase dois, alcançou 0,8 com variação de 20%.

Conclusão: O instrumento foi validado e a sua aplicabilidade é factível.

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Introduction

The care of patients with skin conditions provides knowledge of their needs and desires, and of the physical, emotional, social and spiritual influences of the illness, aiming to prepare them for self-care. The verified precariousness of assessment tools for dermatology patients encouraged the creation of a protocol to obtain the necessary information for planning comprehensive nursing care.

The exposure of skin lesions and the consequent impossibility of keeping them a secret favors the association with infection, and modifies work and social relationships, as well as intimate relationships with partners and family. To relieve the pain caused by lesions, a supportive approach through sensitive listening is necessary. Speech translates aspects related to the representation of the illness and hospitalization, which may retard or prevent recovery if neglected.[1]

The Assessment Protocol for Dermatology Patients (APDP) with skin conditions was developed to understand the clinical history expressed by individuals, considering speech and behavioral manifestations, favoring liberating semiotics. This enables the expansion of dialogue and the understanding of the aspects involving a creative and reflective approach.[2]

By focusing on the approach centered on the individual, and demystifying the exclusive importance of the disease, this technology is suited to the adoption of sensitive listening, since it is based on empathy, promoting dialogue, sensitivity and solidarity between health care professionals and patients.[3,4]

The protocol is a tool for nurses, the health care professionals responsible for patient assessment. Its application will guide the phases of the nursing process in hospitalization units, and may become a source of data for nursing research in dermatology.[5]

The use of validated instruments provides a common language among health care professionals, facilitates the production of data, and promotes the evaluation of techniques and approaches used.[5]

The objective of this study is to validate the content and applicability of the assessment protocol for patients with skin conditions.

Methods

This is a descriptive study using the Delphi method to obtain the opinions of judges with recognized knowledge in a particular field, in this case, nurse specialists in dermatology.[6,7] These individuals, whose judgments and opinions are relevant and anonymous, had no face-to-face meetings with each other or with the researchers.[8]

The Delphi method uses questionnaires redeveloped from the analysis of the judges responses, aiming to obtain consensus. Two groups are needed for its implementation: the executing group, composed of researchers with the roles to contact respondents, develop the initial questionnaire, analyze the data and develop the remaining questionnaires; and the respondent group, made up of the selected judges. The number of respondents depends on the phenomenon to be studied, ranging from seven to twelve.[7] Seven judges participated in this validation.

In addition to the qualitative assessment of the content proposed by the aforementioned technique, quantitative measures were used to complement the content validity: Content Validity Index and Agreement Rate.[9] An assessment of the coherence among the judges in the evaluation is emphasized, by obtaining Spearman's rank correlation coefficient, used in the two validation phases.

Two data production instruments were applied. One involved the identification of the profile of the judges, and included sociodemographic and professional variables: gender, age, years of professional experience and in the field of dermatology, type of service and sector, titles and scientific works in the field of dermatology.

The second instrument referred to the evaluation of the instrument being evaluated. Its first part contained patient identification and sociodemographic data, including: name, registration number, date of admission, date of birth, age, gender, skin color, marital status, education, profession, family income, nationality, place of birth, religion, address and origin.

The second part of the second instrument considers patient history and contains clinical variables: medical diagnosis, comorbidities, allergies, medications, alcohol, smoking, previous hospitalizations,

blood transfusions, previous and family diseases, and preventive exams.

In the third part, knowledge regarding the skin disease, degree of discomfort and emotional and spiritual repercussions of the illness are addressed. The fourth part highlights physiological aspects related to motor, hearing and vision capacity, as well as fluid intake, nutrients and elimination. The patient's views and feelings regarding their disease are considered in the fifth part.

Concerns regarding hospitalization and expectations towards nursing are addressed in the sixth part. The seventh consists of questions regarding physical examination, and the eighth, a survey on nursing diagnoses.[10] The record of the interventions is obtained in the ninth, and the last part presents the record of revaluations of the patient.

Interaction between patient and health care professional, and the use of accessible language respecting customs, values, beliefs and spirituality, facilitate individual expression. The detection of keywords allows registering the meaning of the responses concisely.

The validation of the instrument was carried out in five phases, as recommended by the Delphi method.[6,7] The first phase entailed the selection of specialist judges through the establishment of contact with the Brazilian Society of Dermatology Nursing, which provided a list of names and emails of nurses specialized in the field. Sixteen nurses were invited to participate as judges via email, ten of which agreed to participate.

The second phase entailed preparation and delivery of the protocol to the judges, and each of them received an email with three files: the free and informed consent form; the questionnaire for insertion of the respondents' sociodemographic and professional variables; and the Data Production Instrument for analysis.

If there were doubts, the judges would receive further information regarding the study and the chosen methodology. Suggestions for each aspect were recorded by the judges in specific spaces, including on the maintenance or not of each aspect.

The judges were requested to return the files within 30 days, with a 30-day extension permitted. Three specialists did not send their documents by the established deadlines and were excluded from the study, resulting in seven judges.

The third phase entailed analysis of the judges's responses after the questionnaires were returned to the researchers. The suggestions were analyzed and the content modified when deemed prudent. The suggestions of each judge were observed in the first and second phase, being organized considering all parts of the instrument, including decision-making in regard to acceptance or rejection by the researchers.

The development of the study complied with the national and international ethical guidelines for studies involving human beings.

Results

The judges were women aged 43-51 years, three of which held masters degrees and two of which had Ph.Ds and worked in public universities. One of them worked in teaching and health care, and the others only in health care. Specialists with over ten years of experience in the field of dermatology predominated, with one in the range of four to six years of experience. In regard to scientific activity, five stated they were directing scientific studies, as well as publishing articles and book chapters.

In phase one, four judges suggested modifications to the sociodemographic variables: replace skin color for self-declared ethnicity, combine occupation with profession, replace religion with religious belief, and include 'referred by' in the item related to origin. In phase two, one judge suggested the removal of a disagreeing item from the sociodemographic variable. All of the suggestions were accepted.

In regard to clinical variables, in phase one, three judges suggested changes, two of which were related to the wording, and four of which involved the inclusion of items not originally addressed. The amendments were accepted, yet two suggested inclusions were rejected because they had already been included in other items. In the second phase, two judges agreed on the use of questions regarding smoking and alcohol use,

emphasizing record of present and past use, and the suggestion was accepted.

In regard to skin diseases, in phase one, two judges did not request changes. The others suggested to include items related to pain, intensity of discomfort, use of topical products, and cause and symptoms of the disease. The first two suggestions were accepted and the last two rejected. In this part, in the second phase, two judges recommended the inclusion of assessment scales, one on pain intensity and the other on quality of life. These suggestions were accepted.

In phase one, in regard to physiological aspects, four judges recommended changes: two to specify dietary nutritional components, and the third to include skin products, both of which were accepted. The suggestion to modify the colloquial language used was rejected, since one of the proposals of the instrument under analysis is to facilitate patient's understanding. In the second phase, one of the judges requested specifying types of changes in speech, which was not accepted because it would be an unnecessary detail. The same judge requested modifying the question suggested by another judge in phase one in regard to dietary nutritional components, to asking what the patient's diet is like, and also suggested including the body mass index in the item regarding weight change, which were rejected in this part of the protocol.

In phase one, two judges requested changes regarding emotional aspects: one regarding the inclusion of previously validated scales, a suggestion that was ratified in phase two, and accepted. Also in phase one, another judge suggested adding a question regarding self-care, which was rejected as it was considered in other questions.

In regard to hospitalization, in the first phase, three judges suggested changes. Two agreed on excluding the question regarding the representation of the hospitalization, which was rejected. Two judges suggested rewriting the question to: how do you feel in the hospital? How do you perceive yourself in the hospital? The first suggestion was accepted.

In regard to the physical examination, in phase one, one judge suggested changing the formatting, which was accepted to consider better distribution between the items. The inclusion of previously-validated international standards such as pressure ulcers scale healing (PUSH), used specifically for assessment of pressure ulcers;[10] and another that assesses unviable tissue, infection, moisture and edge (TIME),[11] was suggested by one of the judges and not accepted, as they were considered unsuitable for a protocol for patients with skin conditions specific to dermatology, which show lesions with different characteristics.

Another specialist requested the inclusion of other types of exudate, which was accepted. The suggestion to include the body mass index was accepted in this part of the protocol, using the standard terminology of the Brazilian Ministry of Health. At this phase, there was a recommendation to include an item in the general appearance of the skin, which was accepted. In the second phase, one judge contributed with three suggested inclusions related to partial or total absence of teeth, and partial or full use of dentures, which were accepted. This judge also requested the inclusion of type, color and quantity of exudate, which was accepted. Another judge recommended including pain as the fifth vital sign, which was accepted.

The other parts of the protocol did not receive suggestions of modifications in phase two, but in phase one, an update of the diagnoses was suggested. Thus, the diagnoses were selected according to NANDA International 2012-2014, including defining characteristics and related factors from the coherence with the specificity of dermatology patients. In the part related to nursing interventions, an item related to continuity of care was added.

After completion of the evaluations by the judges and incorporation of the suggested changes that were accepted, the validated instrument was returned to the specialist judges for their information.

The judges' suggestions were analyzed by assigning scores ranging from 1 to 4, with 1 = irrelevant or not representative, and the others based on the expression of meanings, with 2 = item needs major overhaul to be representative; 3 = item needs minor review to be representative; and 4 = item relevant or representative. Due to the technical evaluation of each judge, this scoring was assigned for each part of the protocol, in the two evaluation phases, as shown in table 1.

Table 1. Score measuring the suggestions of the judges

Parts of the protocol	Judge 1	Judge 2	Judge 3	Judge 4	Judge 5	Judge 6	Judge 7	CVI	AR
Phase 1									
Identification	3	3	4	2	3	4	4	0.9	0.4
Clinical variables	4	4	4	2	2	4	2	0.6	0.6
Skin disease	4	4	3	2	2	2	2	0.4	0.3
Physiological aspects	4	4	2	2	2	4	2	0.4	0.4
Emotional aspects	4	4	4	2	4	2	4	0.7	0.7
Hospitalization	2	4	4	2	4	2	4	0.6	0.6
Physical exam	4	4	2	2	2	2	2	0.3	0.3
Diagnoses	4	4	4	2	4	4	4	0.9	0.9
Interventions	4	4	2	3	4	4	4	0.9	0.7
Posterior assessments	4	4	4	4	1	4	4	0.9	0.9
Mean Index								0.6	0.6
VC								0.3	0.4
Phase 2									
Identification	4	3	4	4	4	4	4	1.0	0.9
Clinical variables	4	3	4	3	4	4	4	1.0	0.7
Skin disease	4	3	4	2	4	4	4	0.9	0.7
Physiological aspects	4	2	4	4	4	4	4	0.9	0.9
Emotional aspects	4	4	4	2	4	4	4	0.9	0.9
Hospitalization	4	3	4	4	4	4	4	1.0	0.9
Physical exam	4	2	3	3	4	4	4	0.9	0.6
Diagnoses	4	4	4	4	4	4	4	1.0	1.0
Interventions	4	4	4	4	4	4	4	1.0	1.0
Posterior assessments	4	4	4	4	4	4	4	1.0	1.0
Mean Rate								0.9	0.8
VC								0.1	0.2

Legend: CVI - Content Validity Index - number of judges with attribution of score of 3 or 4/total judges; AR - Agreement Rate - number of judges with attribution of score 4/of judges; VC – Variance coefficient

The content validity index was obtained by the relative frequency of the score attributed to the judgment of the judges. The acceptance of each aspect of the protocol should attain a minimum index of 0.9.[9] In phase one, only four aspects were accepted, whereas in phase two, all received a level of acceptance, since prior qualitative analysis had already been performed. It is noteworthy that the changes in the protocol contributed to adapt the tool.

According to the agreement rate used in phase one,[9] the diagnoses and subsequent evaluations attained the quality cut-off point of 0.9, whereas in phase two, the parts relating to clinical variables, skin disease and physical examination required a single revision to be considered representative.

All aspects evaluated in the instrument attained a mean content validity index (MCVI) of 0.6 in the first phase and 0.9 in the second phase, with variability of 30% dropping to 10%, showing that two assessments are required. In phase one, the value of the mean index of agreement rate was identical to the MCVI, with variability of 40%, whereas in phase two, it reached 0.8 with a variation of 20%.

Table 2. Matrix of Spearman's rank correlation coefficient of the evaluation

	Judge 1	Judge 2	Judge 3	Judge 4	Judge 5	Judge 6	Judge 7
Phase 1, Ho) r=0							
Judge 1	1.00	0.93	0.68	0.54	0.48	0.77	0.63
Judge 2		1.00	0.75	0.46	0.55	0.70	0.70
Judge 3			1.00	0.61	0.66	0.70	0.84
Judge 4				1.00	0.59	0.70	0.70
Judge 5					1.00	0.54	0.82
Judge 6						1.00	0.98
Judge 7							1.00
Phase 2, Ho) r=0							
Judge 1	1.00	0.79	0.98	0.82	1.00	1.00	1.00
Judge 2		1.00	0.84	0.79	0.79	0.79	0.79
Judge 3			1.00	1.00	0.84	0.98	0.98
Judge 4				1.00	0.82	0.82	0.82
Judge 5					1.00	1.00	1.00
Judge 6						1.00	1.00
Judge 7							1.00

This fact showed that the greater requirement of the indices, measured in the obtainment of only including the score 4 for the AR and not 3 and 4 for the CVI did not differ significantly.

Spearman's rank correlation coefficient was another strategy used to evaluate the judgments, aiming to measure the coherence of the judge's evaluations in phases one and two, as shown in table 2.

In the evaluation of the significance of the ordinal correlations, the null hypothesis was adopted that the correlation between the judgement values of two judges would be zero at the significance level of 5%, that is, there would be only five chances in 100 of the judges not converging in their evaluations, characterizing the type 1 error.

In phase one, the results of the correlations varied between 0.46 to 0.98. There was significant convergence between judge 1 and judges 3 and 6. Similarly, judge 7 converged with the opinions of judges 3 , 5 and 6. Thus, judges 5 and 6 think similar to judges 3 and 7.

In phase two, all of the correlations were considered significant with variation from 0.79 to 1.00, the latter of which was considered a perfect correlation because judges 1, 5, 6 and 7 fully agreed with the questions in the instrument; judge 3 could also be in this group, as the ordinal correlation reached 0.98. Judges 2 and 4 did not deviate from this behavior, but showed lower rates of association, between 0.79 and 0.82.

Discussion

The results revealed the importance of evaluating the APDP (Assessment Protocol for Dermatology Patients) in two phases, as in phase two there was greater consistency, leading to homogeneity of the judges' evaluations. Given the reluctance of some researchers to accept the purely qualitative results from the Delphi method, one of the limitations of the method,[6] the evaluation of uniformity, reliability, consistency and appropriateness of the structure and content of the protocol were performed according to the qualitative and quantitative methods used.

Given the precariousness of nursing studies in this field, validation of the APSD will contribute significantly to the practice of nurses to apply an

assessment instrument validated by specialists to the patient.[4]

The Delphi method allowed the validation of a tool needed in the dermatology field. This tool, guided by the cooperative lenses of specialist nurses, added essential content to the assessment of patients with skin conditions, considering their physical, mental and spiritual dimensions.

Conclusion

The instrument was validated and its applicability is feasible, being an instrument that can contribute to the quality of nursing care to patients with skin conditions.

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Collaborations

Brandão ES contributed with the project design and analysis, data interpretation, writing of the article and approval of the final version to be published. Santos I collaborated with the project design and analysis, interpretation of data, writing of the article, critical relevant revision of the intellectual content and approval of the final version to be published. Lanzillotti RS participated in the analysis, interpretation of data, writing of the article and approval of the final version to be published.

References

1. Brandão ES, Santos I, Carvalho MR, Pereira SK. [Nursing care evolution to the client with pemphigus: integrative literature review]. Rev Enferm UERJ. 2011;19(3):79-84. Portuguese.

2. Pessalacia JD, Oliveira VC, Rennó HM, Guimarães EA. [Perspectives for the teaching of bioethics in undergraduate nursing]. Rev Bras Enferm. 2011;64(2):393-8.

3.Barbier B. A pesquisa-ação. Brasília: Editora Plano; 2002.

4. Santos I, Brandão ES, Clós AC. [Dermatology nursing: sensitive listening skills and technology for acting in skin care]. Rev Enferm UERJ. 2009;17(1):124-9. Portuguese.

5. Neves RS, Shimizu HE. [Analysis of the implementation of nursing assistance systematization in a rehabilitation unit]. Rev Bras Enferm. 2010 [;63(2):222-9.

6. Cassiani SH, Rodrigues LP. [The Delphi technique and the nominal group as strategies to collect data in nursing research]. Acta Paul Enferm.1996;9(3): 76-83. Portuguese.

7. Cunha AL, Peniche AG. [Content validity of an instrument to document recovery of patients in post anesthesia care unit]. Acta Paul Enferm. 2007;20(2):151-60.

8. Silva RF, Tanaka O. [Delphi technique: identifying the generic competence required for doctors and nurses working in a primary health care]. Rev Esc Enferm USP 1999; 33(3):207-16.

9. Alexandre NM, Coluci MZ. [Content validity in the development and adaptation processes of measurement instruments]. Ciênc Saúde Coletiva. 2011;16(7):3601-8. Portuguese.

10. Silveira LS, Silva GR, Moura EC, Rangel EM, Sousa JE. [Pressure ulcers assessment through the pressure ulcer scale for healing application (PUSH)]. Rev Pesqui Fundam. 2013;5(2):3847-55. Portuguese.

11. Aron S, Gamba MA. [Wound bed preparation and a history of TIME]. Rev Estima. 2009;7(4): 20-4. Portuguese.