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ORIGINALES

Construction and validation of a tool for evaluation of knowledge about incontinence-associated dermatitis

Construção e validação de um instrumento para avaliação do conhecimento sobre dermatite associada à incontinência

Construcción y validación de una herramienta para evaluación del conocimiento sobre la dermatitis asociada a la incontinencia

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ABSTRACT:

Objective: Building and validating a tool to evaluate knowledge about incontinence-associated dermatitis among nursing professionals.

Method: Methodological research, for the elaboration and content validation of a tool to assess knowledge about incontinence-associated dermatitis, carried out in three stages: the elaboration of the instrument between June and October 2020, content validation by seven judges and six professionals, and pre-test, between March and May 2021. Its construction was based on consensus documents and systematic reviews of the topic. During validation, the Delphi method was adopted. Content Validity Index was calculated to analyze the agreement between examiners.

Results: The agreement among the evaluators was higher than 83% in the test items and domains. Through analysis of variance, it was identified that there was no statistically significant difference among the evaluators' responses. The final version of the tool has 57 items.
Conclusions: The test developed was considered adequate by the evaluators, regarding the criteria of relevance, clarity and simplicity, and can be applied to the target population for guiding permanent health education actions.

Keywords: Diaper Rash; Nursing care; Patient safety; Validation Study; Enterostomal therapy.

RESUMO:
Objetivo: Construir e validar um instrumento para avaliar o conhecimento sobre dermatite associada à incontinência entre profissionais de enfermagem.
Método: Pesquisa metodológica, para a elaboração e validação de conteúdo de um instrumento para avaliação do conhecimento sobre dermatite associada a incontinência, realizada em três etapas sendo, a elaboração do instrumento entre junho e outubro de 2020, validação de conteúdo por sete juízes e seis profissionais e pré-teste, entre março e maio de 2021. A construção do mesmo, fundamentou-se em documentos de consenso e revisões sistemáticas do tema. Durante a validação adotou-se a Técnica Delphi. Para análise da concordância entre examinadores, calculou-se o Índice de Validade de Conteúdo.
Resultados: A concordância entre os avaliadores foi superior a 83%, nos itens e domínios do teste. Através de análise da variância, identificou-se que não houve diferença estatística significativa entre as respostas dos avaliadores. A versão final do instrumento apresenta 57 itens.
Conclusões: O teste elaborado foi considerado adequado pelos avaliadores, quanto aos critérios de relevância, clareza e simplicidade, podendo ser aplicado na população fim, para nortear ações de educação permanente em saúde.

Palavras Chave: Dermatite das fraldas; Cuidados de Enfermagem; Segurança do Paciente; Estudos de validação; Estomaterapia.

RESUMEN:
Objetivo: Construir y validar una herramienta para evaluar el conocimiento sobre la dermatitis por incontinencia entre profesionales de enfermería.
Método: Investigación metodológica para la elaboración y la validación de contenido de una herramienta para evaluación del conocimiento sobre la dermatitis por incontinencia, efectuada en tres etapas, la elaboración de la herramienta se hizo entre junio y octubre de 2020 y la validación de contenido – por siete jueces y seis profesionales – y el pretest, se realizaron entre marzo y mayo de 2021. La construcción de la herramienta se ha fundamentado en documentos de consenso y revisiones sistemáticas del tema. Durante la validación, fue adoptado el Método Delphi. Para el análisis de la concordancia entre examinadores se ha calculado el Índice de Validez de Contenido.
Resultados: La concordancia entre los evaluadores fue superior al 83% en los elementos y en el dominio del test. Por medio del análisis de la varianza, se identificó que no hubo diferencia estadística significativa entre las respuestas de los evaluadores. La versión final de la herramienta presenta 57 ítems.
Conclusiones: El test elaborado fue considerado adecuado por los evaluadores en cuanto a los criterios de relevancia, claridad y simplicidad, por lo que puede aplicarse en la población objetivo, para orientar acciones de educación permanente en salud.

Palabras Clave: Dermatitis del Pañal; Atención de Enfermería; Seguridad del Paciente; Estudio de validación; Estomaterapia.

INTRODUCTION

The integumentary system plays an extremely important role in the human body. Among its functions, it acts as a physical and chemical barrier, in which its integrity, hydration and maintenance of an acid pH are important. Changes in this system lead to skin infections and/or wounds[1].

Incontinence-associated dermatitis (IAD) is a skin inflammation, common in urinary or faecal incontinent patients. In its pathophysiology, we can highlight the moisture resulting from eliminations, associated with the action of skin and faecal bacteria and digestive enzymes, with a consequent alteration in the skin pH of the affected region[1-3].

The cutaneous areas affected by IAD and pressure injury (PI) can be similar and, thus, patients at risk of IAD without proper care, may develop PI. PI is a wound caused by unrelieved pressure on the skin and/or adjacent tissues, associated with friction and/or shear, common in areas of bony prominences and medical device exit sites. PI is generally considered preventable and in advanced stages, it is understood as a serious adverse event[1-5].

The best practice documents on these diseases emphasize the importance of instructing care professionals and students of Nursing courses on the differentiation of these wounds, since an IAD can be confused with PI and be treated inappropriately, as the treatments of these injuries are not similar[4].

Educational actions in health institutions must be implemented in a dialogic manner, in line with the reality identified in patients. Therefore, the themes must emerge from practice, with the objective of improving the interventions carried out[6].

For that matter, tools that identify the knowledge of professionals on a given subject can be important to guide educational activities[7]. However, the questionnaires used must be validated[8,9].

Evaluative tools, in the field of health, work by helping educational processes, aiming to identify the weaknesses and potentialities of care. These should not be used to make actions rigid or act as a control mechanism for participants[7,10].

The present instrument was elaborated with this purpose, to facilitate the implementation of educational activities on the injury in question, due to its relevance and specificities. Another study, carried out in Brazil, aimed to develop an instrument to assess knowledge about IAD, but in conjunction with the assessment of knowledge about PI. In this sense, this research was conducted considering recent advances in scientific research on skin lesions associated with moisture as well as recognizing IAD as distinct from others[11]. Based on the above, the objective of this study was to build and validate an instrument to assess knowledge about incontinence-associated dermatitis among nursing professionals.

MATERIAL AND METHODS

Methodological study for building and content validation of an instrument to assess knowledge about IAD. Content validity is defined as the degree to which a test actually measures the construct it aims to assess[12].

The study was conducted in three stages, which were developed in two periods, in which firstly there was the elaboration of the instrument between July and October 2020 and then the content validation and pre-test between March and May 2021 [9].

The study sample was non-probabilistic for convenience, composed of experts, professional nurses selected through a search in the Lattes Curriculum Platform, characterized according to adapted criteria and were chosen those who obtained a minimum score of 5 points. As selection criteria, the following were adopted: master's or doctorate in Nursing or related areas, with publications on IAD or wounds; specialization in Dermatological Nursing or Stomatherapy with a one-year minimum experience in the area, associated with publications on IAD[13].

During content validation, it is recommended that the instrument be analyzed by evaluators similar to the test's target audience. In this way, professionals from the institution linked to direct patient care were also part of the sample. Thus, the selection criteria were: nursing professionals working in the Surgical Clinic, Pediatrics and Adult ICU, present during the data collection period[9].

Due to the possibility of losses, fourteen experts and six employees of the institution were invited to participate. Of this total, seven expert judges and six service professionals participated in the validation, totaling a sample composed of 13 evaluators of the instrument.

The elaboration of the instrument was based on guiding documents on IAD and on systematic reviews of the subject, as well as on the PI clinical practice guide, which presents guidelines on the management of IAD, due to the correlation between these lesions[2-5,14].

For content validation, it was based on the assumptions of the Delphi method, in which two or more rounds of analysis of the instrument by the committee of examiners are necessary. The purpose of adopting this technique is to obtain the maximum consensus in the evaluation of the items among the evaluators[15].

The evaluators were contacted virtually, through email individually, with clarification of the research objectives and sending of the informed consent form. Subsequently, the link for analysis of the constructed test, prepared in the Google Forms tool, was sent. The domains and items of the instrument were analyzed globally regarding clarity, simplicity and relevance to the construct[8]. The belonging of the items to the domains was also evaluated. The evaluation return deadline was 15 days[9].

In the content validation instrument, there was room for suggestions in each item. The components and domains were analyzed using a 5-point Likert type scale, with 1 = very bad item, 2 = bad item, 3 = regular item, 4 = good item and 5 = excellent item[16]. Regarding the analysis of agreement, the Content Validity Index (CVI) was calculated. This index measures the agreement between evaluators regarding the representativeness of the items and/or domains to the construct, being calculated by dividing the number of evaluators who judged the item as adequate by the total number of judges in each category. On the other hand, for calculation of the general CVI of the instrument, the CVI values of the items were added separately, dividing by the number of items present in the instrument[17]. The item or domain that obtained an agreement equal to or greater than 83% in each round of analysis was considered valid[18].

The pre-test was carried out, including twenty nursing professionals from the institution's Pediatrics Section. The recommended number of evaluators varies in the

literature, however, due to the characteristics of the institution and in order to avoid further losses in the application of the test, this sample number was obtained[19]. The pre-test aimed to make final adjustments to the instrument.

Data were organized and tabulated in statistical software, analyzed using descriptive statistics, with statistical tests and analysis of variance (ANOVA) of the responses. After the first evaluation round, the results were analyzed quantitatively and qualitatively, the CVI of the items and domains was calculated and the evaluators' suggestions were identified. Therefore, the instrument was reformulated and sent back for assessment. After the evaluations of the second round were returned, the CVIs were recalculated, reaching a consensus among the examiners and, therefore, a new stage of analysis was not conducted.

Concomitantly with the quantitative analysis of the judges' and target audience's suggestions, at the end of the first evaluation round, a qualitative analysis of the recommendations was carried out.

The Mann-Whitney U test was used to compare the findings for independent samples. Tests were carried out with the following hypotheses: H_0 = there is no statistically significant difference in the experts' assessment, as well as between the target audience regarding the instrument; H_1 = there is a statistically significant difference in the assessment of experts and between the target audience regarding the instrument.
The study complied with ethical precepts and was approved by the Research Ethics Committee of the Federal University of Mato Grosso do Sul, with Opinion nº 4405128 and Certificate of Presentation for Ethical Consideration (CAAE) 36636620.4.0000.0021.

RESULTS

This study aimed to build and validate an instrument to assess knowledge about incontinence-associated dermatitis among nursing professionals. The study participants were the experts (specialists) and professional nurses of assistance at the University Hospital of the Federal University of Grande Dourados (target audience), totaling 13 evaluators. The experts were from several locations in Brazil, as they were contacted via email, three from the Midwest region, two from the South region of Brazil, one from the Northeast and one more expert from the Southeast region, all with publications or works master's and/or doctorate related to the topic. Among specialists, three of them were PhDs (42.9%), the highest academic title, other three were masters (42.9%) and one was a specialist (14.2%). In addition, in this group, there were six (85.8%) Stomatherapists or Dermatologist Nurses. As for professional practice, five (71.4%) worked as professors and specialists, one (14.3%) was an assistant nurse and another (14.3%) was in the teaching profession exclusively.

Regarding the target audience, three of them worked as nursing technicians and the other three as nurses. Among the technicians, two (66.6%) had a degree and specialization course and one (33.3%) had a Nursing Technician course. Out of the nurses, two had a Master's degree and one had a Specialization course.

As mentioned, the instrument was analyzed in two rounds by the examiners. The content validity indexes of the items and the instrument, in each evaluation round, are described in table 1.

Table 1 - Content Validity Indexes of the items of the instrument regarding clarity, simplicity and relevance. Dourados, MS, Brazil, 2021

Items of the Characteristics of IAD and causes of injury Domain	CVI[1]	CVI[2]	CVI[3]	CVI[4]
1 - IAD is a skin inflammation that occurs as a result of contact os the skin for a considerable amount of time with urine, faeces, or both (T)	1.0	1.0	1.0	1.0
2 - The skin infection associated with IAD is usually caused by bacteria (F)	1.0	1.0	0.67	1.0
3 - Moist skin, whether with water, feces, or urine, is at greater risk for IAD (T)	1.0	1.0	1.0	1.0
4 - IAD can occur together with local infection (T)	1.0	1.0	1.0	1.0
5 - Skin infection associated to IAD usually caused by fungi (T)	1.0	1.0	1.0	1.0
6 - IAD results from unrelieved pressure on the skin or tissue, whether or not associated with the presence of shear and friction (F)	0.72	1.0	0.84	0.84
7 - Liquid feces are less irritating to the skin than solid feces (F)	1.0	1.0	0.84	0.84
8 - Urine is more irritating to the skin than feces (F)	1.0	1.0	0.84	0.84
9 - Among the risk factors for IAD, there are tissue tolerance and the patient's inability to go to the bathroom to eliminate feces and urine (T)	0.86	1.0	1.0	1.0
10 - The microorganisms present on the patient's skin are responsible for causing IAD (F)	1.0	0.86	0.84	0.84
11 - Both extremes of the age range are risk factors for IAD (T)	1.0	1.0	0.84	0.84
12 - These lesions can be deep, reaching the subcutaneous and muscular tissue (F)	1.0	1.0	0.84	1.0
13 - Every patient who has incontinence can be classified as at risk for developing IAD (T)	0.86	0.86	1.0	1.0
Items of the Skin assessment and IAD classification Domain	**CVI[1]**	**CVI[2]**	**CVI[3]**	**CVI[4]**
14 - IAD can be confused with early stage pressure injuries (T)	0.86	1.0	1.0	1.0
15 - Category 1 IAD is characterized by skin tear (F)	0.86	1.0	1.0	1.0
16 - IAD affects only the perigenital or perianal region (F)	1.0	1.0	1.0	1.0
17 - IAD may present with coagulative necrosis (F)	1.0	1.0	0.84	0.84
18 - IAD presenting only erythema (redness) should be classified as category 2 (F)	0.86	1.0	0.84	1.0
19 - In the physical examination of the patient, it is possible to notice that the margins of this lesion are well defined and regular (F)	0.86	1.0	0.84	0.84
20 - In people with dark skin, IAD may present itself as a change in skin color, with a darker than normal or	1.0	1.0	1.0	1.0

purplish appearance (T)				
21 - Changes in skin color around the lesion are important in the evaluation and differentiation of IAD and PI (T)	1.0	1.0	1.0	1.0
22 - The patient's skin should be evaluated daily, looking for areas of skin with blanchable erythema (hyperemia that changes color after palpation at the site for three seconds) and macerated appearance, recording this evaluation in the medical record. (T)	1.0	1.0	1.0	1.0
23 - Erythema in IAD is not uniform; areas of skin with a pinker or lighter color may be visualized (T)	1.0	1.0	0.84	0.84
24 - When evaluating the patient's skin, it is important to perform palpation, looking for areas of skin that are tense, swollen, or with an increase in temperature compared to the adjacent skin (T)	NI	1.0	NI	1.0
25 - IAD associated with the presence of infection is classified as 1B and 2B according to GLOBIAD (T)	NI	1.0	NI	1.0

Items of the IAD Prevention and Treatment Domain	CVI[1]	CVI[2]	CVI[3]	CVI[4]
26 - For skin hygiene, common soap should be used (F)	1.0	1.0	0.84	1.0
27 - For skin hygiene, liquid soap with acidified pH should be used (V)	1.0	1.0	0.84	0.84
28 - During hygiene, clean the skin by rubbing it (F)	1.0	1.0	0.84	1.0
29 - For drying the skin, one should use soft towels (T)	1.0	1.0	1.0	1.0
30 - Zinc oxide ointments are easily removed from the skin (F)	0.86	1.0	0.67	1.0
31 - Ready-to-use cleaning wipes with acidic or neutral pH can be used to prevent IAD (T)	1.0	1.0	0.84	0.84
32 - For the hygiene of the perineal region, bed bath towels soaked with 3% dimethicone can be used (T)	0.86	1.0	0.84	1.0
33 - Dimethicone-based barrier creams are effective in preventing IAD (T)	1.0	1.0	1.0	1.0
34 - Acrylate-based products or silicones (protective films) can be used to treat IAD with skin tear (T)	1.0	1.0	0.84	0.84
35 - Disposable diapers with good absorbency should be used to keep the skin away from moisture (T)	1.0	1.0	0.84	0.84
36 - Patients should be encouraged to use bed urinal bottles, toilet and/or bedpan whenever possible (T)	1.0	1.0	1.0	1.0
37 - Diapers when saturated (full of eliminations) should be changed as soon as possible (T)	1.0	1.0	1.0	1.0
38 - Skin hydration helps prevent IAD (T)	1.0	1.0	1.0	1.0
39 - Diarrheal disease requires immediate skin protection, being one of the most important risk factors for the development of IAD (T)	1.0	1.0	1.0	1.0
40 - The drugs used by the patient can contribute to the development of diarrhea and consequently of IAD (T)	1.0	1.0	1.0	1.0
41 - For clients with faecal incontinence and diarrhea, temporary faecal containment devices should be used when available (T)	0.86	0.86	1.0	1.0

42 - In order to treat IAD, it is necessary to manage its causes (T)	1.0	1.0	1.0	1.0
43 - Among the characteristics of an ideal product to prevent or treat IAD is the color of the product, which must be colorless and allow the skin to be seen after application (T)	1.0	0.86	1.0	1.0
44 - In the absence of suitable products for intimate hygiene, it is preferable to clean the skin with water only (T)	1.0	1.0	1.0	1.0
45 - If other resources have failed, indwelling urinary catheterization can be used for the management of urinary incontinence (T)	1.0	1.0	0.84	1.0
46 - In these lesions, the occurrence of associated fungal infection is more common, and the use of topical antifungals is indicated (T)	1.0	1.0	0.84	1.0
47 - Several products can be used together for the treatment of IAD, such as barrier creams with several components and ointments with zinc oxide (F)	1.0	1.0	0.84	0.84
48 - A product indicated for the treatment of IAD should not interfere with the fixation of medical adhesives (microporous tapes) on the patient's skin (T)	0.86	0.86	1.0	1.0
49 - In order to assist in the treatment of IAD, it is recommended whenever possible to leave the patient's skin exposed to the air, without direct contact with the diaper and preserving the patient's privacy (T)	0.86	0.86	1.0	1.0
50 - Cloth diapers are indicated to prevent or treat IAD (F)	1.0	1.0	1.0	1.0
51 - Corn starch is indicated to treat IAD (F)	1.0	1.0	1.0	1.0
52 - Egg whites and other natural or homemade products are suitable for treating this lesion (F)	1.0	1.0	0.84	1.0
53 - Wound covers, such as polyurethane foam dressing can be used to treat this lesion, when faeces and urine are diverted (T)	NI	1.0	NI	1.0
54 - Products such as barrier creams or ointments should not be applied in large amounts to the skin, as they risk impairing the absorbent function of disposable diapers and increasing local moisture (T)	NI	1.0	NI	1.0
55 - Ointments with zinc oxide and petrolatum can be used to prevent or treat IAD (T)	NI	1.0	NI	1.0
56 - Patients with urination or evacuation in a diaper should be evaluated and have their diaper changed every 8 hours (F)	NI	1.0	NI	1.0
57 - Topical corticosteroids can be used to treat IAD with caution (T)	NI	1.0	NI	1.0
Instrument global CVI	0.96	0.98	0.91	0.96

CVI[1]: Content Validity Indexes in the 1st evaluation round;
CVI[2]: Content Validity Indexes in the 2nd evaluation round;
CVI[3]: Content Validity Indexes for the target audience in the 1st evaluation round;
CVI[4]: Content Validity Indexes for the target audience in the 2nd evaluation round;
NI: New item added by examiners suggestion.

Examiners were asked if the domains were correct, if they were relevant and if they represented the construct. In addition, the items were analyzed regarding the belonging and content of that domain. Regarding these questions, all domains and items obtained CVI values equal to 1.0, in both evaluation rounds.
The qualitative analysis performed concomitantly with the quantitative analysis, at the end of the first evaluation round, is shown in chart 1.

Chart 1 -Synthesis of the qualitative analysis of the expert judges' and target audience's suggestions for changes to the instrument. Dourados, MS, Brazil, 2021

Assessed topic and appearance in the preliminary version of the instrument	Evaluated criteria that required changes	Recommendation
IAD characteristics and lesion etiology Domain	Clarity	Modify “etiology” to causes; Modify the domain order in the instrument.
Skin assessment and IAD classification Domain	Relevance	Add new items (items 24 and 25).
IAD Prevention and Treatment Domain	Relevance	Add new items (items 53 and 57).
Item 1 - IAD is a skin inflammation that occurs as a result of skin contact with urine and faeces	Clarity and relevance	Change “skin” to “cutaneous”; Add: “for a considerable time” and “double incontinence” in the item.
Item 6 - For IAD to occur, unrelieved pressure at the site, associated or not with the presence of shear and friction, is necessary.	Clarity	Improve item wording.
Item 12 - IAD can cause deep injuries that can reach subcutaneous tissue and muscle	Clarity	Improve item wording. Change the terms “IAD can cause” to “These injuries can be”.
Item 14 - IAD can be easily confused with early stage pressure injuries	Clarity	Remove the word “easily” from the item.
Item 15 - IAD that presents a tear in the skin can be classified in category 1	Clarity	Improve item wording.
Item 16 - IAD affects the skin only in the perigenital or perianal region	Clarity	Remove the terms “the skin”.
Item 17 - IAD is a lesion that can present necrotic tissue	Clarity	Describe the type of necrosis.
Item 19 - IAD lesions have well-defined and regular borders.	Clarity	Change the term “borders” to “margins”.
Item 21 - Changes in skin color around the lesion are not important in the evaluation and	Simplicity	Remove the word “no”.

differentiation of IAD and PI		
Item 22 - The patient's skin should be evaluated daily, looking for areas of skin with blanchable erythema and moisture appearance, recording this evaluation in the medical record.	Clarity	Describe bleachable hyperemia; Swap “moisture” for “macerated”.
Item 32 - For the hygiene of the perineal region, bed bath towels can be used with or without rinsing.	Simplicity and relevance	Remove the terms “with or without rinsing”; Add: “soaked with 3% dimethicone”.

Item 33 - Barrier creams based on dimethicone, cyclomethicone, petrolatum or zinc oxide are effective in preventing IAD	Simplicity and relevance	Remove the various products from the question; Create a new item with this data;
Item 37 - Diapers when saturated should be changed as soon as possible	Clarity	Add the terms “full of eliminations”.
Item 39 - Diarrheal disease requires immediate prevention for the skin, being one of the most important risk factors for the development of IAD	Clarity	Change the term “prevention” to “protection”.
Item 41 - When available, for clients with faecal incontinence, faeces collection devices should be used	Clarity	Improve item writing; Modify to: “temporary faecal containment”.
Item 46 - In patients with skin infection, the use of topical antifungals is indicated.	Clarity and relevance	Improve item wording.
Item 49 - If possible, it is indicated to leave the patient's skin exposed to air, without direct contact with the diaper and without exposing the patient, for the improvement of IAD.	Clarity	Improve item wording.

In the application of the Mann-Whitney U test for independent samples, to compare the answers, it was identified that there was no statistically significant difference between the different groups and intergroups in the two evaluation rounds (Sig. (p-value) = 1 .000[1], considering a significance level of 0.05%. After these tests it was sought to investigate whether there was a significant difference between the content validity indexes, using the ANOVA test, described in table 2.

Table 2 - Hypothesis Test (ANOVA) to analyze the difference between the examiners' answers. Dourados, MS, Brazil, 2021

Null hypothesis	Test	Sig. (p-value)	Decision
1. The distribution of CVI is the same among the categories of respondents	Anova Test for Independent Samples	0.392	Retain the null hypothesis.

At the end of the validation stage, the pre-test of the instrument was conducted. At this stage, two items were improved in terms of clarity, as recommended. Only after these adjustments was the instrument considered validated.

DISCUSSION

The present instrument was developed with the main objective of assisting actions of Continuing Education in Health, since, when applying a valid instrument to evaluate the professionals' knowledge, it can help in the survey of the educational needs of the team and thus make the processes carried out more efficient for everyone[6,20].

Skin lesions associated with moisture have received greater attention from researchers and specialists, mainly due to their role in worsening the quality of life of patients, the costs involved in care and the possibility of worsening the health condition of those affected[2,3].

Recognizing IAD as a specific and differentiated skin lesion requiring careful care for its management, prevalent in health institutions, as well as perceiving it as a type of skin lesion in which health professionals are still in the learning process in relation to appropriate care practices and, also, the scarcity of studies and national recommendations, were factors considered for the building of this instrument. In the light of recent scientific advances in terms of knowledge about this injury, it is clear that teaching about this condition must be conducted in a way that is not associated with other injuries[21-23].

The analysis of the evaluators' responses showed that the instrument developed represents the proposed construct, having obtained adequate content validity indexes, regarding the evaluated criteria of simplicity, clarity and relevance. The domains present in this instrument were built based on reference documents on the subject, such as best practice guides, guidelines and systematic reviews, and were envisioned taking into account the most relevant concepts for the practice of IAD.

Authors report that this initial stage of surveying the literature on the construct is paramount for the development of a valid instrument. The more detailed the instrument, the better it will be able to cover the construct in question[9,19,24,25].

During the validation, the responses of the judges and target audience were analyzed quantitatively and qualitatively, through the analysis of the examiners' recommendations. At the end of each evaluation round, statistical analysis of the responses was carried out, respecting the accuracy required in the content validation

process, as well as seeking to obtain considerable improvements in the test. It should be noted that only after the pre-test stage was the instrument considered valid[8,24,26].

In the preliminary version, the instrument had 50 items, distributed in three domains. After validation, the questionnaire increased to 57 items, keeping the same number of domains. When applying this instrument, in order to consider the appropriate level of knowledge, the percentage of correct answers for items adopted was equal or higher than 90%, which was based on a similar test validated in Brazil to assess knowledge about PI[27].

Through the analysis of the findings, the criterion with more feedback was item clarity. This criterion is understood as the action of using short and simple sentences for the test items, making them easier for the respondents to understand. The examiners' recommendations were accepted, as well as the pre-test suggestions[8].

It can be highlighted as strengths of this research the fact that the validation was conducted with two groups of examiners - experts and target audience. Therefore, the instrument was validated in terms of content and applicable in care practice[24,28].

Among the limitations of this study, it can be pointed out the fact that it is a validity assessment and, therefore, the psychometric properties of the instrument presented were not verified. However, in view of the results presented, the instrument can be considered valid for measuring the knowledge of nursing professionals regarding the assessment, characteristics, prevention and treatment of IAD.

CONCLUSION

The instrument for assessing knowledge about incontinence-associated dermatitis was built and validated in accordance with its content. The instrument presented excellent clarity, simplicity and relevance in the evaluation before expert judges and target audience, being applicable to the target population. In this way, the developed test can be applied within the institutions to guide the actions of continuing education in health.

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