

Validation of interventions for risk of impaired skin integrity in adult and aged patients

Validação de intervenções para risco de integridade da pele prejudicada em adultos e idosos

Validación de las intervenciones para los riesgos de integridad de la piel perjudicada en adultos y personas mayores

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ABSTRACT

Objectives: to validate nursing interventions for the diagnosis Risk for Impaired Skin Integrity in adult and aged hospitalized patients. **Methods:** descriptive, quantitative study, using the content validity of interventions done by 14 specialist nurses. **Results:** the specialist nurses had worked in the area for more than five years. Four (28.5%) used NANDA-I and CIPE®, three (21.4%) used NANDA-I, NIC and CIPE®, three (21.4%) used NANDA-I, NIC, NOC and CIPE® and four (28.5%) were currently working only with CIPE®. The validation analyzed 32 NIC interventions, of which 11 were priority and 21 were suggested. Of the priority interventions, five belonged to the Physiological/Complex domain, five to the Physiological/Basic domain and one to the Safety Domain. **Final Considerations:** nursing interventions are essential for planning and support good practices in teaching, research and care. **Descriptors:** Nursing; Nursing Theory; Nursing Care; Validation Studies; Nursing Process.

RESUMO

Objetivos: validar as intervenções de enfermagem para diagnóstico Risco de integridade da pele prejudicada de pacientes adultos e idosos hospitalizados. **Métodos:** estudo descritivo, quantitativo, utilizando a validade de conteúdo de intervenção, por 14 enfermeiras especialistas. **Resultados:** evidenciou-se que os enfermeiros especialistas trabalhavam na área há mais de cinco anos. Observou-se que quatro (28,5%) utilizavam NANDA-I e CIPE®, três (21,4%) NANDA-I, NIC e CIPE®, três (21,4%) NANDA-I, NIC, NOC e CIPE® e quatro (28,5%) atualmente estavam trabalhando apenas com a CIPE®. A validação analisou 32 intervenções da NIC, sendo 11 prioritárias e 21 sugeridas. Das intervenções prioritárias, cinco pertenciam ao domínio Fisiológico/Complexo, cinco ao Fisiológico/Básico e uma ao de Segurança. **Considerações Finais:** as intervenções de enfermagem são essenciais para o planejamento, favorecendo subsídios para boas práticas no ensino, pesquisa e assistência.

Descritores: Enfermagem; Teorias de Enfermagem; Cuidado de Enfermagem; Estudos de Validação; Processo de Enfermagem.

RESUMEN

Objetivos: validar las intervenciones de enfermería para el diagnóstico riesgos de integridad de la piel perjudicada de pacientes adultos y personas mayores hospitalizadas. **Métodos** se trata de un estudio descriptivo, cuantitativo, realizado por 14 enfermeras especialistas que utilizaron la validez de contenido de intervención. **Resultados:** quedó en evidencia que las enfermeras especialistas trabajaban en el área hace más de cinco años. Se observó que cuatro (28.5%) utilizaban NANDA-I y CIPE®, tres (21.4%) NANDA-I, NIC y CIPE®, tres (21.4%) NANDA-I, NIC, NOC y CIPE® y cuatro (28.5%) trabajaban, por el momento, sólo con CIPE®. La validación analizó 32 intervenciones de NIC, siendo 11 prioritarias y 21 sugeridas. De las intervenciones prioritarias, cinco pertenecían al ámbito Fisiológico/Complejo, cinco al Fisiológico/Básico y una al de Seguridad. **Consideraciones Finales:** las intervenciones de enfermería son esenciales para planificar y conseguir subsidios que promuevan las buenas prácticas en la enseñanza, la investigación y la atención.

Descritores: Enfermería; Teorías de Enfermería; Cuidados de Enfermería; Estudios de Validación; Proceso de Enfermería.

INTRODUCTION

The multiple dimensions of the human being require nursing professionals to be equipped with broad science-based knowledge. However, in care practice, the provision of care is the essence of the profession. Given the need to guide nursing actions and implement interventions based on scientific methodologies, nursing science has been developing new theories and models to support the improvement of nursing care⁽¹⁾.

In Brazil, Wanda de Aguiar Horta is an example of a researcher/nurse who encouraged the use of the Nursing Process (NP), influenced the transition from empirical to scientific nursing, and transformed nursing into an applied and authentic science, considering the way she describes the systematic process of care. By 1979, she had already mentioned that the Nursing Process is a dynamic of systematized and interrelated actions, characterized by the interrelationship and dynamism of its phases: data collection, diagnosis, planning, implementation and evaluation⁽²⁻⁴⁾.

The Nursing Federal Board (COFEN), under Resolution COFEN 358/2009, recommends the implementation of the NP in all health institutions (public or private), aiming at the Systematization of Nursing Care (SNC)⁽⁴⁾.

Through the SNC, it is possible to develop a method of care delivery based on technical and scientific knowledge, following ethical and moral principles and using standardized language in order to qualify nursing action and optimize time and service. The use of a systematic method of care is useful for choosing priorities when making decisions, as it can promote planned and individualized care and thus increase autonomy in the nursing profession.

Therefore, classification systems establishing a universal language were developed in order to standardize care, facilitate communication between professionals and highlight the elements of nursing practice (diagnosis, interventions, outcomes). In 1970, the North American Nursing Diagnosis Association (NANDA), the Nursing Interventions Classifications (NIC) and the Nursing Outcomes Classifications (NOC) taxonomies began to be used. Currently, they are used together to standardize records of diagnosis, interventions, and outcomes⁽⁵⁾.

Nursing interventions are defined as "any treatment, based on clinical judgment and knowledge, performed by a nurse to improve patient outcomes"; while Nursing Activities are the specific behaviors or actions that nurses do to implement an intervention and which assist patients to move toward a desired outcome⁽⁵⁾.

The choice of a nursing intervention must consider the individuality of each patient and should be based on an effective data collection and a well-defined nursing diagnosis, according to the expected outcomes from the NANDA-I/NIC linkage⁽⁶⁾. To implement the intervention, it is necessary to assess its feasibility, the acceptance and understanding of the patient, and the nurse's ability in the situation.

The NANDA-I/NIC linkage is defined as "a relationship or association between a nursing diagnosis and a nursing intervention that causes them to occur together in order to obtain an outcome or the resolution of a patient's problem". Concerning the diagnosis of Risk for Impaired Skin Integrity, the priority interventions in the NANDA-I/NIC linkage are: Pressure Ulcer Prevention, Pressure Management and Skin Surveillance⁽⁷⁾. Therefore, when assessing the Risk for Impaired Skin Integrity, the nurse must plan and execute interventions needed for prevention.

Validations of interventions, as well as validations of diagnosis and outcomes, occur through the analysis of experts and are aimed at listing appropriate actions for systematic nursing care. These studies aim to make the results obtained valid, efficient and more directed to the problems encountered by nurses when caring for the individual, family and community⁽⁸⁻⁹⁾.

Validation requires an expert or specialist to validate each element of the nursing process. This professional must have broad theoretical knowledge and practical skills on the subject. All the criteria used to select the specialist nurse should be described in detail, as this description may be used by other researchers in future studies⁽⁹⁾.

This study is part of a larger work that originated a doctoral thesis in the Nursing Graduate Program of the Federal University of Paraíba. This thesis addressed the potential risk for pressure injuries and the nursing interventions for adult and aged hospitalized patients, from the perspective of the nursing student, considering the clinical point of view of nursing training and a nursing focus that transforms the health and functionality of the patient and encourages reflection on the quality of the care provided by the nursing team.

Therefore, after mapping and constructing terms and definitions, the validation of interventions for clinical practice turns the focus to technical-scientific actions based on nursing theory and practice and on increasingly solid and measurable evidence.

It is worth noting that the records of nursing interventions directly influence the quality of the care offered to the user. Therefore, perfecting these records is a challenge faced by the health team, and a validation study might elucidate possible actions, based on uniformity of terminology, that may be incorporated into individualized and human care plans. Therefore, conducting a study on interventions might guide care planning and be an important contribution for the fields of teaching, research and care⁽⁴⁾.

Given the above, the present study seeks to answer the following research question: what are the nursing interventions for the diagnosis Risk for Impaired Skin Integrity in adult and aged hospitalized patients? Within this context, the present study was conducted.

OBJECTIVES

To validate nursing interventions for the diagnosis Risk for Impaired Skin Integrity in adult and aged hospitalized patients.

METHODS

Ethical aspects

This research was approved by the Research Ethics Committee of the Federal University of Paraíba and followed the formal requirements of national and international regulations on research involving human beings⁽¹⁰⁾.

Type of study

This is a descriptive study with a quantitative approach, using the model proposed by Fehring⁽¹¹⁾. This model is also used by other researchers in studies on validation of nursing interventions

to determine the Content Validity Index (CVI) of Interventions, according to specialist nurses.

Methodological procedure

As this is part of a PhD thesis developed in the Nursing Graduate Program of UFPB, before the validation of interventions by expert nurses, there was a survey of nursing interventions and activities developed with adult and aged hospitalized patients with the diagnosis of Risk for Impaired Skin Integrity, which were described by undergraduate students of the Bachelor and *Licentiate* Nursing courses of the Federal University of Paraíba. This study was developed at the Federal University of Paraíba, from February to December 2015.

After the survey, the interventions described were selected for validation by the specialist nurses. The criteria proposed by Fehring⁽¹¹⁾ were used, after being adapted by the researcher.

The specialist nurses were selected as potential study participants according to an evaluation of their curriculum on the *Lattes* Platform on the website of the National Council for Scientific and Technological Development. The initial search was for nurses with a doctoral degree who had experience with the subject. Later, the filter related to "Other Researchers" was used. The minimum education criterium was a master's degree. The descriptor used in the search was Nursing Interventions. The ideal sample size was between 25 and 50 participants, according to Fehring's inclusion criteria⁽¹¹⁾.

A total of 44 specialist nurses were found. After contact made in person, by email or by phone, 32 participants remained. Of these, only 14 answered the instruments and signed the Informed Consent Form. The criteria adopted for the selection of specialist nurses include their education and clinical practice, in addition to activities related to the theme of the study. Participants obtained a score between 05 and 15 points, and all the criteria of the scoring system for selecting specialist nurses were followed⁽¹¹⁾.

The inclusion criteria were: specialist nurses with a degree and clinical practice in the subject; development of technical-scientific activities related to the theme of the study; scoring between 5 and 15 points according to the criteria for validation experts⁽⁹⁾.

The exclusion criteria were: not submitting the material sent for validation in the time established to complete data collection.

The final sample was composed by 14 nurses who were specialists in nursing diagnosis and interventions. For the analysis, the collection instruments were presented by alphanumeric codes (EE1, ..., EE14).

Data were collected through two instruments: i) social and demographic data and selection criteria for the experts; ii) and the structured instrument for the validation of interventions. The structured instrument for the validation of interventions was divided in two parts: the first referred to the concepts of diagnosis, intervention, nursing activity and external and internal risk factors; the second was a Likert-type scale with nine columns, variables and weights – strongly disagree (0.0), disagree (0.25), neutral (0.50), agree (0.75) and strongly agree (1.0) –, which followed Fehring's orientations⁽¹¹⁾, adapted by the researcher.

The first column contained the description of the Nursing Interventions listed by the students and grouped by similarity. The next two columns contained the interventions and activities mapped, corresponding to those described in the NIC (2010). In the fourth, fifth, sixth, seventh, and eighth columns were the

variables. Finally, the ninth column was a space for the specialist nurse to write suggestions and considerations⁽¹¹⁾.

Analysis of data

Data were analyzed and processed in the Statistical Package for the Social Sciences (SPSS) version 20.0. The arithmetic means of each activity were calculated based on the sum of the scores attributed by the specialists.

The results were categorized according to Fehring's validation model⁽¹¹⁾. Interventions were classified as priority (those with arithmetic mean greater than or equal to 0.80), suggested (those with arithmetic mean between 0.79 and 0.51) and indicated for further analysis in future studies (those with means below 0.50). In this study, there was no intervention with a mean below 0.5, as all of them were validated as priority and suggested interventions. In the end, the total Content Validity Index (CVI) was calculated for each intervention, summing up the scores of each activity and calculating the mean of the Fehring's results⁽¹¹⁾.

RESULTS

Characterization of specialist nurses

All the 14 specialist nurses were female. Regarding age group, 10 (71.4%) were between 30 and 50 years old and four (28.6%) between 51 and 60 years old. The time of professional experience was between 05 and 35 years.

Regarding their work, 100% had worked for more than five years with the theme. Five (35.7%) were professors and were involved in the nursing process, in teaching and in research, and four (28%) were involved in teaching, research and care. In addition, two (14.2%) who worked in lecturing and two (14.2%) who developed research in the theme reported they had worked in the area when they were in clinical practice.

Regarding their use of the classification systems, four (28.5%) participants used NANDA and CIPE®, three (21.4%) used NANDA-I, NIC and CIPE®, three (21.4%) worked with NANDA-I, NIC, NOC and CIPE® and four (28.5%) were currently working only with CIPE®.

Regarding education, 13 (92.8%) had a doctoral degree and only 1 (8.2%) had only a master's degree. Regarding their scientific production, 21% did their master's dissertation on the theme, 28.5% developed work or activities on nursing process, six (48.8%) did their monographs, dissertations and thesis on the theme, four (28.5%) had published work in national and/or international journals and four (28.5%) had other kinds of work, such as papers on the nursing process and use of classification systems exposed in scientific events in the area of nursing and health.

Validation of interventions for risk of impaired skin integrity in adult and aged hospitalized patients

Among the 49 Nursing Interventions indicated in the NANDA-I/NIC linkage⁽⁹⁾ for the Nursing Diagnosis (ND) Risk of Impaired Skin Integrity, the researcher mapped 34 Nursing Interventions and 85 activities contained in the interventions. After the analysis and refinement made by the specialist nurses, 32 activities remained

and seven were excluded because they did not address risk, but the injury already installed. Among these activities, 24 were in the NANDA-I/NIC linkage and eight were not.

Regarding the domains and classes, the following were mapped: 14 interventions in the Physiological Complex Domain - in classes G (Electrolyte and acid-base management), H (Drug management), J (Perioperative care), L (Skin/wound management), N (Tissue perfusion management); 12 interventions in the Physiological: Basic Domain, in classes A (Activity and exercise management), C (Immobility management), D (Nutrition support), F (Self-care facilitation); one intervention in the Behavioral Domain, in class S (Patient education); and five interventions in the Safety Domain, in class V (Risk management). Ten activities were not mapped by the researcher, as they were not correlated with the NIC proposals, but were analyzed by the specialist nurses (Table 1).

Table 1 – Nursing Interventions for the diagnosis Risk for Impaired Skin Integrity in adult and aged hospitalized patients with means ≥ 0.80 , analyzed and refined by the specialist nurses

NIC NURSING INTERVENTIONS	MEAN	MEDIAN	STANDARD DEVIATION
Vital Signs Monitoring (VS)*	0.88	1.00	0.06
Bathing*	0.84	1.00	0.06
Self-Care Assistance: Bathing/Hygiene***	0.86	1.00	0.08
Swallowing Therapy***	0.86	0.94	0.11
Skin Care: Topical Treatments**	0.83	1.00	0.08
Circulatory Care: Venous Insufficiency***	0.83	1.00	0.08
Positioning: Intraoperative**	0.81	1.00	0.08
Skin Surveillance +	0.81	1.00	0.13
Bed Rest Care*	0.80	1.00	0.08
Nutrition Management*	0.80	0.88	0.10
Fluid/Electrolyte Management*	0.80	0.88	0.24

Note: * Nursing Interventions described in NIC as optional extras, according to the NANDA-I/NIC linkage, 2007 – 2008;
 ** Nursing Interventions described in NIC as suggested, according to the NANDA-I/NIC linkage, 2007 – 2008;
 *** Nursing interventions described in NIC, not included in the NANDA-I/NIC linkage, 2007 – 2008 for the diagnosis in study;
 + Nursing interventions described in NIC as priority, according to the NANDA-I/NIC linkage, 2007 – 2008.

Table 2 – Scores of the Nursing Interventions for the diagnosis Risk for Impaired Skin Integrity in adult and aged hospitalized patients with means between 0.51 and 0.79, analyzed and refined by the specialist nurses

NURSING INTERVENTIONS	MEAN	MEDIAN	STANDARD DEVIATION
Self-Care Assistance	0.79	0.94	0.04
Foot Care	0.79	0.88	0.14
Teaching: Foot Care	0.78	0.88	0.06
Positioning	0.78	1.00	0.07
Pressure Ulcer Prevention	0.78	0.88	0.09
Pressure Management	0.78	0.75	0.39
Supervision +	0.77	0.88	0.09
Infection Protection	0.77	1.00	0.06
Fluid Management	0.76	0.88	0.09
Incision Site Care	0.76	0.88	0.07
Circulatory Precautions	0.76	1.00	0.07
Exercise Therapy: Ambulation	0.75	0.88	0.20
Lower Extremity Monitoring	0.75	0.75	0.34
Medication Administration: Skin	0.73	1.00	0.01
Infection Control	0.72	0.88	0.04
Nutrition Therapy	0.71	0.88	0.10
Electrolyte Management: Hyponatremia	0.69	0.75	0.05
Intravenous (IV) Insertion	0.68	0.75	0.04
Exercise Therapy: Muscle Control	0.63	0.75	0.44
Exercise Therapy: Joint Mobility	0.63	0.75	0.44
Physical Restraint	0.63	0.75	0.04

Note: + Nursing interventions described in NIC as priority, according to the NANDA-I/NIC linkage, 2007 – 2008;
 * Nursing Interventions described in NIC as optional extras, according to the NANDA-I/NIC linkage, 2007 – 2008;
 ** Nursing interventions described in NIC as suggested, according to the NANDA-I/NIC linkage, 2007 – 2008;
 *** Nursing interventions described in NIC, not included in the NANDA-I/NIC linkage, 2007 – 2008 for the diagnosis in study.

The validation analysis of the 32 NIC nursing interventions showed that 11 were validated as priority interventions, with weighted means ≥ 0.80 , and 21 were validated as suggested interventions, with weighted means > 0.51 and < 0.79 . There were no interventions with weighted means below or equal to 0.50.

Among the 11 Nursing Interventions validated by the specialist nurses as priority, only Skin Surveillance was described in the NANDA-I/NIC Linkage⁽⁶⁾ as priority. The interventions Positioning: Intraoperative and Skin Care: Topical Treatments were validated as priority; however, they are indicated in the NIC as suggested interventions.

The interventions Vital Signs Monitoring, Bathing, Bed rest care, Nutrition Management and Fluid/Electrolyte Management were described in the NANDA-I/NIC linkage as optional extras. The interventions Self-Care Assistance: Bathing/Hygiene, Swallowing Therapy and Circulatory Care: Venous Insufficiency were not indicated in the NANDA-I/NIC linkage for the diagnosis in study. However, they were mapped with NIC interventions and validated as a priority by the specialist nurses.

The 21 Nursing Interventions validated as suggested obtained weighted means between 0.51 and 0.79, as shown in Table 2.

DISCUSSION

Among the 11 Nursing Interventions validated as priority, five are in the Physiological: Complex domain (care that supports homeostatic regulation), five are in the Physiological: Basic domain (care that supports physical functioning), and one is in the Safety domain (care that supports protection against harm). Another important aspect was the validation as priority of the interventions: Self-Care Assistance: Bathing/Hygiene, Swallowing Therapy and Circulatory Care: Venous Insufficiency. These interventions were not included in the NANDA-I/NIC linkage for the nursing diagnosis Risk for Impaired Skin Integrity. However, they obtained scores greater than or equal to 8.0, in relation to their importance for the diagnosis in study⁽⁶⁻⁷⁾.

The intervention Vital Signs Monitoring, in class V – Risk Management, is associated with clinical reasoning regarding the identification of risks related to body temperature and circulatory condition⁽⁶⁻⁷⁾. This is essential for the early detection of risk for the proposed diagnosis. This intervention was present in this study and was validated by the nurse specialists as a priority, with a score higher than 8.0.

The intervention Bathing is related to skin hygiene. It is undeniable that skin needs to be clean, without humidity and hydrated, as this will considerably reduce the risk of injury and the potential invasion of microorganisms in the skin⁽¹²⁻¹³⁾. Especially during bathing, nursing professionals have the possibility of touching and evaluating the integrity of the skin and

relieving pressure by stimulating circulation and repositioning the patient⁽¹³⁻¹⁴⁾.

The intervention Self-Care Assistance: Bathing/Hygiene, defined as assisting the patient to perform personal hygiene⁽¹³⁻¹⁴⁾, was validated. This is important because during bathing assistance, the nurse can inspect the patient's skin and evaluate the areas of risk for the development of injuries⁽⁶⁻⁷⁾.

Regarding the intervention Nutrition Management, it is important to maintain adequate nutrition in order to optimize daily skin restoration, improve the regeneration capacity, and, if a lesion already exists, support its healing⁽¹²⁻¹³⁾.

The intervention Swallowing Therapy is defined as facilitating swallowing and preventing complications of impaired swallowing⁽¹²⁻¹³⁾. It was validated as priority, but it only had two activities related to the diagnosis in study. These activities are related to the patient's fluid intake, indicating that the focus of the intervention is on hydration and not on the swallowing therapy intervention.

The intervention Skin Care: Topical Treatments, defined as application of substances or manipulation of devices to promote skin integrity and minimize skin breakdown, is considered a suggested intervention in the NANDA-I/NIC linkage⁽¹⁰⁾. However, in this study, it was validated as priority. It is important to emphasize that the use of topical substances can modify or preserve the integrity of the skin⁽¹²⁻¹³⁾.

The intervention Circulatory Care: Venous Insufficiency is not included in the NANDA-I/NIC⁽⁶⁾ linkage, but was validated as a priority in the present study and considered as promotion of blood circulation. Chronic venous insufficiency is a condition characterized by the inability to maintain balance of the blood flow in the lower limbs, which can cause changes such as hyperpigmentation, varicose veins, depression edema, eczema, active or healed lesions, and lipodermatosclerosis⁽¹³⁾. There is a clinical association between the validation of the nursing intervention and the nursing diagnosis.

The intervention Positioning in Intraoperative, defined as moving the patient to promote surgical exposure while reducing the risk of discomfort and complications, is a suggested intervention in the NIC/NANDA-I linkage⁽⁶⁾. However, in this study, it was validated as priority. Inadequate positioning of the patient over a long period of time, such as during the surgical procedure, increases pressure on the body surface and can impair skin integrity⁽¹⁴⁾.

The intervention Skin Surveillance, defined as the collection and analysis of patient data to maintain skin and mucous membrane integrity, is considered a priority in the NANDA-I/NIC linkage⁽⁶⁾, was also validated as such in this study. It is essential that nurses identify patients who are most likely to develop injuries in order to take preventive measures⁽¹²⁾. Proper skin surveillance allows the nurse to perform efficient preventive care, avoiding any type of injury.

The intervention Bed Rest Care, defined as promotion of comfort and safety and prevention of complications for a patient unable to get out of bed⁽¹⁵⁾, is part of the Physiological: Basic Domain/ Immobility management, class C, and is indicated as an extra intervention in the NANDA - I/NIC linkage⁽⁷⁾. However, care for the bed bound patient is essential to prevent skin breakdown. The importance of this intervention for the diagnosis in study is confirmed by the result of the analysis by the specialist nurses, who classified it as a priority intervention, as well as by

the cross-mapping, which correlated 24.0% of the activities with those described in the NIC.

The Nursing Intervention Fluid/Electrolyte Management, classified as priority by the specialist nurses in this study, is part of the Physiological: Complex domain/ Electrolyte and Acid-Base Management, class G. However, it is classified as an extra intervention in the NANDA - I/NIC linkage⁽⁶⁻⁷⁾. It is defined as the regulation and prevention of complications from altered fluid and/or electrolyte levels. It is important to highlight that fluid-electrolyte imbalance leads to excessive fluid and electrolyte loss, as well as unnecessary gains that predispose the patient to dehydration or edema and make them susceptible to infections and injuries.

The validation of a nursing diagnosis, intervention, or outcome is related to how well they represent the patient's problem, to the provision of necessary care based on the clinical reasoning and knowledge of the nurse, and to the evaluation from the patient, the family, and the community.

Interventions that have been validated as priority in this study can be used for maintaining skin integrity. Differences regarding the category of some interventions, which were classified as suggested or extra in the NANDA-I/NIC linkage⁽⁶⁻⁷⁾ but were validated as priorities in this study, are due to the evaluation of the specialist nurses.

The overall Content Validity Index (CVI) of the Interventions was 0.78, and the overall rate of agreement between experts was 0.53, which is considered regular.

Regarding the 21 interventions validated as suggested, two (Pressure Ulcer Prevention and Pressure Management) are indicated as priority in the NANDA - I/NIC linkage⁽⁶⁾ but were classified as suggested, with a score of 0.78. The Nursing Interventions Self-care Assistance and Foot Care, which belong to the Physiological: Basic domain, class F - self-care facilitation, had 24.9% of their activities mapped, and both obtained a score of 0.79, being validated as suggested by the experts. Self-care Assistance is not included in the NANDA - I/NIC linkage⁽¹⁴⁾ for the diagnosis Risk of Impaired Skin Integrity, but Foot Care is classified as a suggested intervention.

It is important to mention that Self-Care Assistance, defined as assisting and instructing people to perform the instrumental activities of daily living necessary for functioning at home or in the community, helps the patient to perform their daily activities, but also allows the nurse to interfere when necessary in order to avoid possible accidents. Regarding foot care, nail care, with clean and cut nails, and hydration of the heels and skin of the foot are considered important to avoid injuries and infections, especially in aged patients, with metabolic and cardiovascular impairment.

The Nursing Intervention Teaching: Foot Care was validated as suggested, as it is also classified in the linkage. Although this intervention is part of the behavioral domain, the concern is for the same reasons mentioned in Foot Care, with emphasis on Patient Orientation.

Another intervention validated as suggested was Positioning, which belongs to the Physiological: Basic Domain/Immobility Management and is defined as "deliberative placement of the patient or a body part to promote physiological and/or psychological well-being". This intervention is also classified as suggested in the NANDA-I/NIC linkage⁽⁶⁾. Corroborating the importance of this intervention, studies state that poor patient positioning and/or long times in the same position leads to pressure on areas of the

body. Therefore, it is necessary to reposition the body or use a mattress and/or chair to keep the patient away from hard surfaces.

In addition to the interventions described above, Surveillance, Infection Protection and Infection Control of the Safety Domain, Risk Management, Incision Site Care, Circulatory Precautions, Lower Extremity Monitoring and Medication Administration: Skin of the Physiological: Complex Domain, Exercise Therapy: Ambulation, Exercise Therapy: Muscle Control and Exercise Therapy: Joint Mobility, of the Physiological: Basic Domain were validated as suggested, as indicated in the NANDA-I/NIC linkage⁽⁶⁾.

The intervention Nutrition Therapy, of the Physiological: Basic Domain, Nutrition Support was validated as suggested, but is classified as extra in the NANDA-I/NIC linkage⁽⁶⁾. The other interventions - Fluid Management, Electrolyte Management: Hypernatremia and Intravenous (IV) Insertion -, of the Physiological: Complex Domain, and Physical Restraint, of the Safety Domain, are not included in the NANDA-I/NIC linkage⁽⁶⁾ for the diagnosis in study.

This set of interventions validated as a priority and suggested are predominantly in the NIC Domains Physiological: Basic and Physiological: Complex and all involve direct or indirect skin care, highlighting the nurses' concern with injury prevention. This leads to the conclusion that nursing practice is directly aimed at solving problems that require interventions to support the physical and homeostatic functioning of the organism.

Limitations of the study

The limitation of this study is the size of the expert sample (14), since the intention was to have a larger sample (32), but there was no adherence from the professionals invited. However, the results obtained are considered positive, as they contributed to deepen the knowledge on the subject and revealed important aspects that should be considered in the clinical judgment when choosing the most appropriate intervention.

Contributions to the areas of nursing and health

This study contributes to nursing care practice, since fundamental interventions for skin care were validated. It can also

support teaching, as it can facilitate learning of nursing students and professionals, by applying the results found, bringing theory and practice together.

CONCLUSIONS

Among the 34 interventions submitted for analysis by the specialist nurses, 32 were validated, which belong to four of the seven NIC domains. Using the criteria proposed by Fehring, 11 interventions were validated as priority and 21 as suggested.

According to expert validation, the priority interventions for Risk for Impaired Skin Integrity in adult and aged hospitalized patients were: Vital Signs Monitoring; Bathing; Self-Care Assistance: Bathing/Hygiene; Swallowing Therapy; Skin Care: Topical Treatments; Circulatory Care: Venous Insufficiency, Positioning: Intraoperative, Skin Surveillance, Bed Rest Care, Nutrition Management and Fluid/Electrolyte Management. These actions were cited as indispensable to maintain skin integrity.

The interventions considered as suggested by the experts were: Self-Care Assistance; Foot Care, Teaching: Foot Care; Positioning; Pressure Ulcer Prevention; Pressure Management; Surveillance; Infection Protection; Fluid Management; Incision Site Care; Circulatory Precautions; Exercise Therapy: Ambulation; Lower Extremity Monitoring; Medication Administration: Skin; Infection Control; Nutrition Therapy; Electrolyte Management: Hypernatremia; Intravenous (IV) Insertion; Exercise Therapy: Muscle Control; Exercise Therapy: Joint Mobility; and Physical Restraint.

The study found that the interventions belong mainly to the NIC Domains Basic and Complex Physiological. Therefore, it is understood that nursing care for patients with the diagnosis in study should support the physical and homeostatic functioning of the organism.

These results will be shared with research collaborators through publication in national and international journals. In addition, the researcher is committed to strengthen this theme at undergraduate level and to report the results obtained to the Nursing Intervention Classification System (NIC). As a recommendation for future research, similar studies should focus on nurses in their daily practice in different services.

REFERENCES

1. Gutiérrez MGR, Morais SCR. Systematization of nursing care and the formation of professional identity [Internet]. 2017[cited 2018 Jan 16];70(2):455-60. Available from: http://www.scielo.br/pdf/reben/v70n2/pt_0034-7167-reben-70-02-0436.pdf
2. Lucena ICD, Barreira IA. Enfermagem em Novas Dimensões: Wanda Horta e sua contribuição para a construção de um novo saber da enfermagem (1975-1979). Texto Contexto Enferm [Internet]. 2011[cited 2016 Aug 16];20(3):534-40. Available from: <http://www.scielo.br/pdf/tce/v20n3/15.pdf>
3. Conselho Federal de Enfermagem. Resolução. COFEN 358/09. Dispõe sobre a sistematização da assistência de enfermagem e a implementação [Internet]. Brasil, 2009[cited 2016 Aug 16]. Available from: http://www.coren-ro.org.br/resolucao-cofen-35809-dispoe-sobre-a-sistematizacao-da-assistencia-de-enfermagem-e-a-implementacao_800.html/print/
4. Horta WA. Processo de enfermagem. São Paulo: EPU, 1979.
5. Garcia TR, Nóbrega MML. Nursing Process: from theory to the practice of care and research. Esc Anna Nery [Internet]. 2009[cited 2016 Aug 16];13(1):188-93. Available from: <http://www.scielo.br/pdf/ean/v13n1/v13n1a26.pdf>
6. Bulechck GM, Butcher K, Dochterman JM. Nursing Interventions Classification (NIC) linked to 2007-2008 NANDA I. Nursing Diagnosis. 5 ed. Rio de Janeiro: Elsevier, 2010.

7. Nanda. Diagnósticos de enfermagem NANDA: definições e classificações 2012-2014. Porto Alegre: Artmed, 2013.
 8. Andrade LT, Chianca TCM. Validation of nursing interventions for patients with spinal cord injury and impaired physical mobility. *Rev Bras Enferm*. 2013;66(5):688-93. doi: 10.1590/S0034-71672013000500008
 9. Bavaresco T, Lucena AF. Nursing Intervention Classifications (NIC) validated for patients at risk of pressure ulcers. *Rev Latino-Am Enfermagem* [Internet]. 2012;20(6):[08 telas]. Available from: <http://www.redalyc.org/html/2814/281424797013>
 10. Ministério da Saúde (BR). Conselho Nacional de Saúde. Comissão Nacional de Ética e Pesquisa – CONEP. Resolução 466/2012 sobre pesquisa envolvendo seres humanos. Brasília: Distrito Federal. 2012. Available from: <http://conselho.saude.gov.br/resolucoes/2012/reso466.pdf>
 11. Fehring RJ. The Fehring model in: Carrol – Johnson RM, Pasquete M. Classification of nursing diagnosis: proceeding of the tenth conference. Philadelphia: JB. Lippincot, 1994, 55-62.
 12. Olkoski E, Assis GM. Application of measures for preventing pressure ulcers by the nursing team before and after an education campaign. *Esc Anna Nery* [Internet]. 2016[cited 2016 Aug 16];20(2):363-369. Available from: <http://www.scielo.br/pdf/ean/v20n2/1414-8145-ean-20-02-0363.pdf>
 13. Santos WA, Fuly PSC, Santos MLSC. Nursing strategies for the prevention of pressure ulcers in intensive therapy: integrative review. *Rev Enferm UFPE*. 2017;11(5):1943-52. doi: 10.5205/reuol.11077-98857-1-SM.1105201725
 14. Merlo I. Insuficiência venosa crônica, diagnóstico e tratamento. Projeto diretrizes Sociedade Brasileira de Angiologia e Cirurgia Vascular (SBACV). [Internet]. 2015. Available from: <http://www.sbacv.org.br/lib/media/pdf/diretrizes/insuficiencia-venosa-cronica.pdf>
 15. Lopes CMM, Haas VJ, Dantas RAS, Oliveira CG, Galvão CM. Escala de avaliação de risco para lesões decorrentes do posicionamento cirúrgico. *Rev Latino-Am Enfermagem*. 2016;24:e2704. doi: 10.1590/1518-8345.0644.2704
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