INTEGRATIVE LITERATURE REVIEW ARTICLE

NURSING INTERVENTIONS FOR PRESSURE ULCER PATIENTS*

INTERVENÇÕES DE ENFERMAGEM PARA PACIENTES COM LESÃO POR PRESSÃO

INTERVENCIONES DE ENFERMERÍA PARA PACIENTES CON LESIONES POR PRESIÓN

Danielle Martins do Nascimento Oliveira¹ , Marta Miriam Lopes Costa² , William Malagutti³

ABSTRACT

Objective: to analyze the scientific production about ICNP® nursing interventions for patients with pressure injury. **Method:** this is a bibliographic study, integrative review type in articles published from 2014 to 2018, conducted in the bases of the Virtual Health Library and CAPES journal portal. Data were analyzed descriptively by the results presented in figures. **Results:** 31 articles were selected, which showed various nursing interventions, such as periodic supervision of the skin, change of position, use of covers and scales, self-care teaching, continuing education of the team and development of protocols. **Conclusion:** it is expected the development of new studies involving the theme, considering the complexity of caring for injuries, highlighting the need for further research with interventions aimed at systematizing care, minimizing suffering and achieving wound healing. **Descriptors:** Nursing; Pressure Injury; Nursing Process; Wounds and Injuries; Nursing Care; Standardized Nursing Terminology.

RESUMO

Objetivo: analisar a produção científica acerca das intervenções de enfermagem da CIPE® para pacientes com lesão por pressão. **Método:** trata-se de um estudo bibliográfico, tipo revisão integrativa em artigos publicados entre 2014 a 2018, realizado nas bases da Biblioteca Virtual de Saúde e portal de periódicos CAPES. Analisaram-se os dados de forma descritiva pelos resultados apresentados em figuras. **Resultados:** selecionaram-se 31 artigos, que evidenciaram diversas intervenções de enfermagem, como a supervisão periódica da pele, mudança de decúbito, uso de coberturas e escalas, ensino do autocuidado, educação continuada da equipe e desenvolvimento de protocolos. **Conclusão:** espera-se o desenvolvimento de novos estudos envolvendo a temática, considerando a complexidade do cuidar de lesões, evidenciando a necessidade de mais pesquisas com intervenções direcionadas a sistematizar o cuidado, minimizar o sofrimento e alcançar a cicatrização da lesão. **Descritores:** Enfermagem; Lesão por Pressão; Processo de Enfermagem; Ferimentos e Lesões; Cuidados de Enfermagem; Terminologia Padronizada em Enfermagem.

RESUMEN

Objetivo: analizar la producción científica sobre las intervenciones de enfermería ICNP® para pacientes con lesión por presión. **Método:** este es un estudio bibliográfico, tipo revisión integradora en artículos publicados de 2014 a 2018, realizado en las bases de la Biblioteca Virtual en Salud y el portal de la revista CAPES. Los datos fueron analizados descriptivamente por los resultados presentados en las figuras. **Resultados:** se seleccionaron 31 artículos que mostraban diversas intervenciones de enfermería, tales como supervisión periódica de la piel, cambio de posición, uso de cubiertas y escalas, enseñanza de autocuidado, educación continua del equipo y desarrollo de protocolos. **Conclusión:** se espera el desarrollo de nuevos estudios que involucren el tema, considerando la complejidad del cuidado de las lesiones, destacando la necesidad de una mayor investigación con intervenciones destinadas a sistematizar la atención, minimizar el sufrimiento y lograr la curación de la herida. **Descriptor:** Enfermería; Lesión por Presión; Proceso de Enfermería; Heridas y Lesiones; Atención de Enfermería; Terminología Normalizada de Enfermería.

^{1,2}Federal University of Paraíba/UFPB. João Pessoa (PB), Brazil. ¹ <http://orcid.org/0000-0001-5413-4731> ² <http://orcid.org/0000-0003-4454-9348> ³ <http://orcid.org/0000-0001-7765-3323> São Marcos University / USM. Sao Paulo (SP), Brazil.

*Article extracted from the thesis entitled: ICNP Protocol for patients with pressure injury. Federal University of Paraíba, 2019.

How to cite this article

Oliveira DMN, Costa MML, Malagutti W. Nursing interventions for patients with pressure ulcers. J Nurs UFPE on line. 2019;13:e240237 DOI: <https://doi.org/10.5205/1981-8963.2019.240237>

INTRODUCTION

Pressure ulcers (PU) are known to be a public health problem due to their high incidence, impacts on the patient's quality of life in its various dimensions (physical, emotional and social), as well as the high cost of treatment for the health institutions. Understanding that caring for these injuries is important for decision making and multiprofessional intervention, representing a starting point for the creation of adequate public health policies.

PU are related to internal and external factors to clients and to changes in the skin as a result of the pressure exerted on bone prominences or due to shear.¹ It is noteworthy that, even knowing its high incidence, many data are still underreported. According to data from the National Pressure Ulcer Advisory Panel (NPUAP),² it is known that in hospitals in the United States of America (USA), the prevalence of PU is 15%; In Brazil, although there are few studies that reflect reliable data, the authors state that the incidence is between 23.1% and 59.5%.³

The incidence and prevalence are high worldwide, which proves the need for better assessments and preventive measures.⁴ It is emphasized that reducing the risk of PU is one of the priorities of the Ministry of Health, being among the six International Safety Goals. Patient and functioning as an indicator of the quality of health services.⁵

It is understood that nurses, in the practice of their practice, face increasingly demanding and complex challenges with the increase of non-communicable chronic diseases, verifying that patients are hospitalized for their treatment, being vulnerable to the onset of these wounds.

Little attention has been paid to the application of the Nursing Care Systematization (NCS) and the Nursing Process and their results in Nursing care, with regard to the prevention and treatment of PU. The motivation of this research is justified by the scarcity of studies involving the theme and because it is believed that the systematization of actions can make an important contribution in the areas of teaching, research and assistance, and should therefore be the focus of professional care.

OBJECTIVE

- To analyze the scientific production about ICNP® nursing interventions for patients with pressure injury.

METHOD

This is a bibliographic study, integrative review type, which presents the synthesis of multiple published studies, allowing to identify, evaluate

and synthesize the knowledge produced on a given theme and allowing general conclusions about a specific area of study, aiming at the search for scientific evidence and the deepening of the theme for clinical practice.⁶

The following steps for the review were listed: definition of the research question; information gathering in databases; establishment of inclusion and exclusion criteria; elaboration of a collection instrument; critical analysis of the sample; interpretation of the data and presentation of the evidenced results.⁶

The following research question was considered: "What is the scientific production published in the literature about nursing interventions for patients with pressure injury?". For the selection of articles, we used the databases of the Virtual Health Library and journal portal CAPES: LILACS (Latin American Literature on Health Sciences), MEDLINE (National Library of Medicine and National Institutes of Health), CINAHL (Cumulative Index to Nursing and Allied Health Literature), BDNF (Nursing Databases). The search in several databases aimed to broaden the scope of the research and minimize biases.

A search strategy was constructed using the keywords "pressure injury", "pressure ulcer", "injuries and injuries", "protocol", "treatment", "therapy", "therapeutic modality", "healing", "Nursing process", "Nursing care" and "Nursing", which were combined through the Boolean operator AND in multiple combinations.

The following inclusion criteria were adopted: articles that addressed nursing interventions for pressure injuries and answered the guiding question of this study; complete articles; freely and electronically available; in English, Portuguese and Spanish, and published from 2014 to 2018. The following were excluded from the sample: theses; dissertations; monographs; course completion works; experience reports; manuals; reviews; previous notes; articles that did not contain available abstracts and duplicate publications.

A data collection instrument was prepared for each article in the sample, to facilitate analysis and subsequent synthesis. Information was extracted on: 1) Author - identification data; 2) Article - title, journal name, year of publication, country of origin, area of knowledge; 3) Methodology - study sample, location and type of study and level of evidence and 4) Main findings and conclusions.

The results were critically discussed and interpreted and, finally, the synthesis of the knowledge produced was presented in order to disseminate the main findings. Results were subsequently mapped with the ICNP® 2017, as shown in the prism flowchart in Figure 1.

Figure 1. Flowchart of study selection according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2009). Joao Pessoa (PB), Brazil, 2019.

RESULTS

Of the 152 articles, 31 met the inclusion criteria and were used in the sample. Regarding authorship, professionals from different areas of knowledge participated, however, nurses prevailed in the productions. As for the year of publication, it was evident that the sample comprised texts published between 2014 and 2018, with the predominance of 2016 and 2017.

It was noticed that the largest number of publications was seen in journals dedicated to the specialty of wounds, which was expected, considering that both the pathophysiology of wounds and some of the therapeutic modalities for the control of signs and symptoms of wounds are closely associated with this specialty, as seen in Figure 2.

Article title	Journal			Year	Authors	Level of Evidence
Occurrence and risk factors for pressure injuries in intensive care centers	J Nurs UFPE on line			2018	Mendonça, Loureiro, Ferreira Júnior, Souza.	V
Survey results from Canada and some Latin America countries: 2016 National Pressure Ulcer Advisory Panel changes in terminology and definitions.	Adv Skin Care	Wound		2018	Ayello, Cordero, Sibbald.	VII
Pressure injury incidence in a university hospital	J Nurs UFPI			2017	Pereira, Beserra, Pereira, Andrade, Luz.	V
Nursing actions before and after an intensive care pressure injury prevention protocol	Sc Anna Nery Jour Nurs			2017	Vasconcelos; Caliri	IV
Use of Noncontact Low-Frequency Ultrasound in Deep Tissue Pressure Injury: A retrospective analysis	J Wound Ostomy Continence Nurs			2017	Wagner-Cox, Duhamel, Jamison, Jackson, Fehr.	IV
Development and validation of an algorithm for laser application in wound treatment	Latin-Am Jour	Nursing		2017	Cunha, Salomé, Massahud Junior, Mendes, Ferreira.	V
Construction and validation of algorithm for pressure injury treatment	J Nurs UFPE on line			2017	Carvalho, Salomé, Ferreira.	VI
Nursing strategies in the prevention of pressure ulcers in intensive care: integrative review	J Nurs UFPE on line			2017	Benevides, Coutinho, Tomé, Gubert, Silva, Oliveira.	V
Reducing pressure ulcers in patients with prolonged acute mechanical ventilation: a quasi-experimental study	Jour Braz Intensive Care			2017	Loudet, Marchena, Maradeo, Fernández, Romero, Valenzuela, et al.	II
Nutritional therapy in pressure injury: systematic review	J BraZ Gerontol	Geriatr		2017	Oliveira, Haack, Fortes.	V
Prevalence of pressure ulcers in intensive care units	J Nurs UFPE on line			2017	Medeiros, Silva, Guedes, Souza, Araújo Neta.	V
Evidence-Based Cue-Selection Guide and Logic Model to Improve Pressure Ulcer Prevention in Long-term Care	J Nurs Care Qual			2016	Yap, Kennerly, Bergstrom, Hudak, Horn.	V
Application of pressure ulcer prevention measures by nursing staff before and after an educational campaign	Sc Anna Nery Jour Nurs			2016	Olkoski, Assis.	VI
Assessment scale of risk for surgical positioning injuries	Latin-Am Jour	Nursing		2016	Lopes, Haas, Dantas, Oliveira, Galvão.	VI
Face pressure ulcers in patients undergoing noninvasive ventilation hospitalized in intermediate care	Reference			2016	Martins, Ribas, Sousa, Silva, Preto, Correia.	IV
Preventive actions for pressure ulcer in the elderly with functional decline of physical mobility at home	Esteem			2016	Ferreira, Aguiar, Lima, Brito, Costa, Soares.	V
Health and safety indicators of institutionalized elderly	J Nurs Sc USP			2016	Cavalcante, Borges, Moura, Carvalho.	V
Influence of drugs on pressure ulcer formation: integrative review	J Contemporary Nurs			2016	Almeida, Soares, Abreu, Mendonça, Guanabara, Sampaio.	V
Pressure ulcer concept and classification: update of the National Pressure Ulcer Advisory Panel	J Nurs Mid-west Min			2016	Moraes, Borges, Lisboa, Cordeiro, Rosa, Rocha.	VI
Mobile image processing to classify pressure injuries	J Nurs UFPE on line			2016	Tibes, Cherman, Souza, Évora, Zem-Mascarenhas.	V
Nursing workload and occurrence of adverse events in intensive care: systematic review	Rev Esc Enferm USP			2016	Oliveira, Garcia, Nogueira.	V
Venous ulcer area measurement using two software	Latin-Am Jour	Nursing		2016	Eberhardt, Lima, Lopes, Borges, Weiller, Fonseca.	V
Laser therapy in pressure ulcers: evaluation by the Pressure Ulcer Scale for Healing and Nursing Outcomes Classification	J Nurs Sc USP			2015	Palagi, Severo, Menegon, Lucena.	IV
Incidence of pressure ulcers in patients with cardiopulmonary intensive care unit	J Nurs Sc USP			2015	Campanili, Santos, Strazzieri-Pulido, Thomaz, Nogueira.	IV
Effect of a pressure ulcer prevention protocol in elderly	J Nurs UFPE on line			2015	Moraes, Borges, Oliveira, Lopes, Silva.	V
Factors contributing to evidence-based	Int J Nurs Studies			2014	Sving, Idvall,	V

pressure ulcer prevention. A cross-sectional study			Högberg, Gunningberg.	
Pressure ulcers in palliative home care patients: prevalence and characteristics	<i>J Nurs Sc USP</i>	2014	Queiroz, Mota, Bachion, Ferreira.	VI
Implementing trials of complex interventions in community settings: the USC-Rancho Los Amigos pressure ulcer prevention study (PUPS)	<i>Clin Trials</i>	2014	Clark, Pyatak, Carlson, Blanche Vigen, Hay, et al.	II
Assessment and prevention of pressure ulcer by intensive care nurses: knowledge and practice	<i>J Nurs UFPE on line</i>	2014	Albuquerque, Souza, Torres, Porto, Soares, Torquato.	VI
Pressure ulcer: a challenge for nursing	<i>Braz J Surg Clin Res</i>	2014	Ascari, Veloso, Silva, Kessler, Jacoby, Schwaab, et al.	VI
Risk assessment tools for the prevention of pressure ulcers	<i>Cochrane Database Syst Rev</i>	2014	Moore, Cowman	V

Figure 2. Presentation of sample articles. Joao Pessoa (PB), Brazil, 2019.

Figure 3 shows the Nursing interventions mapped with ICNP® 2017 for the patient with pressure injury, from the selected articles.

Nursing Interventions for Pressure Ulcer Treatment and Prevention
Apply pressure ulcer risk scales (Norton, Braden, Waterlow Scale and Care Dependency Scale). ^{9-11,15,18-21, 29,32-3}
Apply pressure ulcer risk scales (Norton, Braden, Waterlow Scale and Care Dependency Scale). ^{9-11,15,18-21, 29,32-3}
Apply pressure ulcer risk scales (Norton, Braden, Waterlow Scale and Care Dependency Scale). ^{9-11,15,18-21,29,32-3}
Apply pressure ulcer risk scales (Norton, Braden, Waterlow Scale and Care Dependency Scale). ^{9-11,15,18-21,29,32-3}
Apply pressure ulcer risk scales (Norton, Braden, Waterlow Scale and Care Dependency Scale). ^{9-11,15,18-21,29,32-3}
Help with selfcare. ²⁵
Assess adherence to diet. ^{16,18}
Evaluate wound healing. ^{12,15,18,21-2,25-9,32,35-6}
Assess the need for nutritional supplementation. ¹
Assess the need to use laser therapy to treat injuries. ^{12,29}
Evaluate sensory perception. ²¹
Evaluate tissue perfusion. ²³
Evaluate the client's clinical condition. ^{11,35,37}
Evaluate patient exams. ²³
Evaluate the use of vasopressor agents. ¹¹
To evaluate the use of drugs that influence healing, such as corticosteroids, chemotherapy and radiotherapy. ^{11,27}
Control hyperglycemia. ²⁷
Raise the headboard to 30 °. ^{19,22,25}
Forward to team review. ²¹
Stimulate communication. ²¹
Avoid dragging the patient into bed. ^{22,31}
Avoid shear. ¹⁵
Manage nutritional condition. ^{11,16,18,25}
Sanitize the hands. ¹²
Identify the etiology and risk factors for pressure injuries. ^{1,14-5,17-8,21,23,30-2,35}
Individualize care. ³⁵
Irrigate the injuries. ²⁷
Maintain skin integrity. ³⁵
Keep bedding clean, dry and well stretched. ²²
Keep skin clean and dry. ^{9,18-9,21-2,24,30,33}
Mobilize the patient with more than two people. ³⁵
Monitor vital signs. ²⁷
Obtain wound and skin data from admission. ^{12,15,18,21-2,25-9,32,35-6}
Get pain data. ^{14,21}
Guide the family and the patient about the therapeutic regime. ¹¹
Guide on wound healing. ³⁷
Guide about home care. ³⁷
Guide patients, caregivers and staff on the use of injury prevention protocols, guidelines and policies. ^{1,10,12,14,23,25,31,35,37}
Guide a diet rich in vitamins and proteins. ¹⁸
Listen to the patient. ²¹
Prevent infection. ¹¹
Promote comfort. ^{11,35}
Protect the skin with a pressure relief mattress. ^{1.8.1.14-5,18,22-3,25,29,34-5}
Protect bony prominences. ^{22,35}
Proteger a pele perilesional. ¹³
Perform wound cleaning on saline granulation tissue or wound cleaners. ¹²
Perform wound cleaning on devitalized tissue in the presence of exudate with saline or wound cleaners. ¹²
Perform wound cleaning on epithelized tissue with saline. ¹²
Perform wound care. ¹¹
Perform debridement in the lesion with devitalized tissue (necrosis, exudate-splenic, non-exudate-split). ¹²
Carry out permanent staff education. ^{12,19}

Moisturize your skin with essential fatty acid creams. ^{1,14,22,25,29}
Perform moisture control on diapers. ^{8,25,29,32}
Perform bed exercise therapy. ²⁷
Perform massage therapy. ^{22,25}
Register skin care. ^{12,14,18,35-6}
Treating urinary and fecal incontinence. ^{1,29,35}
Treat the lesion with dry escharotomy escharotomy before papain, or hydrogel, alginate hydrogel or collagenase. ¹²
Treat spinal lesions with exudate (purulent, seropurulent, serosanguinous, bloody, serous) with infection with antimicrobial coating, silver activated charcoal, silver hydrofiber, silver or silver nanocrystalline calcium alginate. ¹³
Treating the lesion with exudate (purulent, seropurulent, serosanguinolent, bloody, serous) without infection with 10% papain, calcium alginate, alginate hydrogel or hydropolymer. ¹³
Treating the lesion with a hydrogel-excrudated skin with alginate, hydrogel or papain. ¹³
Treat the lesion with granulation tissue with exudate (purulent, seropurulent, serosanguinous, bloody, serous) papain, calcium alginate, hydrocolloid, petrolatum or hydropolymer. ¹³
Treat the lesion with exudate-free granulation tissue with 2% or 4% papain, hydrogel, alginate hydrogel, AGE or petrolatum). ¹³
Treat the lesion with epithelized tissue with clear film, AGE or extrafine hydrocolloid. ¹³⁻⁴
Treat the lesion with epithelized tissue and hydration. ¹²
Treat the lesion with hydration granulation tissue and primary dressing evaluated by the nurse. ¹²
Change the bandage. ^{21,27,29}
Change patient position in bed every two hours. ^{1,8,14,18,22-3,25,29,32,34-5}
Use hydrocolloid plaques and skin moisturizing solutions as a preventative measure for injuries. ¹⁴
Use lifting means (roll, pillows, pillows and sheet) to move the patient in bed. ^{22,25,31}
Use the microcurrent to aid in the healing process. ²³
Using aseptic technique in dressing. ^{21,27,29}
Use a parrot or bedpan as needed by the patient. ³¹

Figure 3. ICNP® Nursing Interventions for pressure injury. Joao Pessoa (PB), Brazil, 2019.

DISCUSSION

Pressure ulcer is defined by the International Classification for Nursing Practice (ICNP), updated here for pressure injury, as damage, inflammation or wound to the skin or underlying structures as a result of tissue compression and inadequate perfusion.⁷ It can be seen that, although widely discussed in the literature about its risk factors and treatment, there is still a high incidence and prevalence of this condition in health institutions.

The Nursing process is understood as a useful tool in clinical practice, as it helps nurses to prevent and treat detected problems. Two categories were identified from the articles selected in the sample: 1) Nursing Interventions for the prevention of PU in the patient and 2) Nursing Interventions for the treatment of PU in the patient.

♦ Nursing Interventions for Patient PU Prevention

In the findings, there were numerous preventive approaches aimed at the patient with PU, among them the individualization of care, with the evaluation of the person and the skin from admission to discharge,^{12,15,18,21-2,25-9,32,35-6} and the importance of the professional nurse to conduct a careful data collection, with anamnesis and a complete and detailed physical examination to identify possible problems, listing the etiology and risk factors for injuries. It was also noted that keeping the skin clean and dry,^{9,18,19,21-2,24,30,33} management and treatment of urinary and fecal incontinence^{1,29,35} and preventive measures to prevent injuries were observed in several articles, since skin contact with these elements may lead to changes in their structure and function, causing

chemical irritation, moisture maceration, dermatitis and colonization of bacteria and fungi, thus compromising its integrity.³⁵

Keeping skin clean and dry, applying topical lotions such as moisturizers, and the use of essential fatty acid creams to act as a moisture barrier have been shown to be effective in preventing PU, forming a barrier. skin protection, preventing maceration and providing relief after first application, promoting local cell nutrition and tissue regeneration.^{1,14,17,22,25,27,29,38}

It is stated in the studies that changing the position of the patient in bed every two hours was considered a standard action for injury prevention, since pressure on the bed associated with friction and shear may lead to vascular impairment, with the reduction of capillary blood flow and the consequent rupture of the skin. This is associated with the use of support surfaces, such as pressure reducers, with prominence protection, which can be used to decrease the force exerted on an area, and adequate mobilization in the bed. These behaviors have been shown to be a good investment for their best and cost-effective outcomes.^{1,8,11,14-5,18,22-3,25,29,31-2,34-5}

It is understood that the application of scales in clinical practice proved to be useful, as it helps professionals to identify internal and external risk factors for the onset of injuries. Several instruments for risk identification were found, such as the Norton, Waterlow, Gosnell and Braden scales, the latter being the one that stood out in the studies, as it is widely used to implement effective care and risk identification. It is pointed out that these scales provide subsidies for the clinical evaluation of the patient and for the

determination of priority care, reducing damage and suffering, as well as costs for the institutions.^{9,10,11,15,18-21,23,29,32-3}

Other relevant behaviors were found, such as maintaining adequate nutritional support and hydration and managing the nutritional status of the client. This is an important practice because a wound can cause numerous deleterious effects on the body, resulting from its catabolic process, which increase nutritional needs, making the process of tissue repair and reconstruction, resulting in healing, and leading, consequently, a longer hospitalization time.^{1,11,16,18,25}

Preventive measures are notoriously the best way to avoid compromising the patient's clinical condition, which is responsible for prolonging the length of stay and increasing costs for the service, as well as the physical and emotional suffering of the client of self-image disorders.

We highlight the important role of nursing in early identifying those who need care, especially those who fall into groups considered at risk (elderly, obese, bedridden, wheelchair users), to minimize physical and psychological damage, the costs and length of stay, evaluating and classifying this client to intervene individually in each case. It is suggested that this should be the starting point for the entire team to prevent PUs.^{1,10,12,14,23,25,31,35,37}

♦ Nursing Interventions for the Treatment of Patient's PUs

Relevant Nursing interventions focused on the treatment of PU were relevant. However, it is necessary for the nurse to periodically evaluate the client's clinical condition and the injury, performing a detailed physical examination, history and laboratory tests.^{11,35,37}

Clinical evaluation of the patient has been shown to be necessary in several studies to perform effective and individual care, highlighting that the underlying disease, advanced age, vital signs, hyperglycemia, nutritional status, medication use and urinary and intestinal functions need to be treated correctly.^{17,23,27,36,38}

Studies have shown that the evaluation of lesion characteristics (bed and perilesion), as well as measurement, margin determination, tissue type, amount of exudate (amount of wet gauze) and signs of infection will determine the best treatment and the choice of optimal coverage.^{12,15,18,21-9,32,35-6}

Several nursing interventions involving the treatment of these injuries were identified, including direct care of the lesion, performing dressing changes with aseptic technique and appropriate choice of material, protecting the perilesional skin, evaluating sensory perception, obtaining pain data and studying need for laser

therapy and microcurrent to treat injuries.^{12-3,15,18-29,32,35-6}

It is emphasized, in the case of some authors, that nurses need to have accurate knowledge to choose the ideal dressing. Cleaning with appropriate products should be performed, which will depend on the type of exudate present in the lesion, and saline or specific cleansers may be used.¹²

Products can be used to treat the lesion, and their choice will depend on the type of tissue found in the bed and perilesional skin, emphasizing that the conduct should always be performed after the nurse's evaluation.¹²

It is understood in the studies that the involvement of the client and family is part of care and should be considered by nurses in their care plan. It is indicated to stimulate the patient, performing daily self-care activities, such as combing hair, food and hygiene, which encourages autonomy, helps the individual to cope with conflicts, as well as promoting comfort and tranquility in the face of the situation. It requires self-confidence and faith during recovery. Patient verbalization and a good family relationship should be facilitated, as the involvement of all will facilitate the teaching-learning process with care for the injury, especially regarding discharge.^{17,21,25,38}

The nurse is considered an active member of a multidisciplinary team and generally responsible for skin evaluation and dressing choice. It is emphasized that the professional needs to study the injury he will take care of. It is pointed out that the act of "talking to the wound" is perhaps the most appropriate way to do the right thing, since this dialogue transcends the technique itself and consists in caring for the individual as a whole.

It is noteworthy that protocols, algorithms, booklets, manuals, flowcharts and guidelines are important tools for solving problems arising from clinical practice and management of health services, as they help standardize clinical and preventive behaviors and may favor the implementation of systematization of nursing care.^{12,14}

It is argued that implementation of PU prevention protocols and study groups with standardization of specific interventions, documentation, involvement of multidisciplinary teams, leadership, auditing and feedback in setting up a protocol provides cost savings, the decrease in prevalence, incidence and severity of injuries in the service, with the mitigation of damage and suffering, also for the patient.²³

CONCLUSION

It is concluded from this study that preventing and treating patients with skin lesions can still be seen as challenges in the practice of nurses. It is necessary for him to identify the real needs of the individual, who transcends the focus of the wound and uses his observation, practical experience and scientific knowledge, considering the psychological, social and spiritual spheres, in order to plan his care.

It was understood in the study that care should be performed from the anamnesis and physical examination, evaluating the patient as a whole (covering all biopsychosocial dimensions), from admission to discharge. It is noteworthy that the evaluation of the skin, the bed and the edges of the lesion will be decisive for the choice of an effective coverage that helps in healing and is comfortable and aesthetically acceptable.

It is noteworthy that, despite the importance of approaching the theme, there are still incipient studies involving the subject and the use of the Nursing process as a methodological tool to guide and organize care. Further research is suggested to deepen knowledge about the treatment and care provided to this clientele.

REFERENCES

1. Ayello EA, Cordero GM, Sibbald RG. Survey results from Canada and some Latin America countries: 2016 National Pressure Ulcer Advisory Panel changes in terminology and definitions. *Adv Skin Wound Care*. 2017 Feb;30(2):71-6. DOI: [10.1097/01.ASW.0000511443.83861.d1](https://doi.org/10.1097/01.ASW.0000511443.83861.d1)
2. National Pressure Ulcer Advisory Panel. NPUAP pressure injury stages [Internet]. Washington: NPUAP;2016 [cited 2018 Aug 10]. Available from: <http://www.npuap.org/about-us/>
3. Borghardt AT, Prado TN, Bicudo SDS, Castro DS, Bringunte MEO. Pressure ulcers in critically ill patients: incidence and associated factors. *Rev Bras Enferm*. 2016 May/June;69(3):431-8. DOI: <https://dx.doi.org/10.1590/0034-7167.2016690307i>
4. Cedraz RO, Gallasch CH, Júnior Perez EF, Gomes H F, Rocha RG, Mininel VA. Risks management in the hospital environment: incidence and risk factors associated with falls and pressure injuries in a clinical unit. *Esc Anna Nery Rev Enferm*. 2018 Mar;22(1):e20170252. <https://dx.doi.org/10.1590/2177-9465-ean-2017-0252>
5. Ministério da Saúde (BR), Gabinete do Ministro. Portaria Nº 529 de 1º de abril de 2013. Institui o Programa Nacional de Segurança do Paciente [Internet]. Brasília: Ministério da Saúde; 2013 [cited 2019 Jan 30]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529_01_04_2013.html
6. Mendes KDS, Silveira RCCP, Galvão CM. Integrative literature review: a research method to incorporate evidence in health care and nursing. *Texto contexto-enferm*. 2008 Oct/Dec;17(4):758-64. DOI: <http://dx.doi.org/10.1590/S0104-07072008000400018>
7. Garcia TR, Bartz CC, Coenen AM. Classificação Internacional para a Prática de Enfermagem CIPE®: Versão 2017. Porto Alegre: Artmed; 2016.
8. Mendonça PK, Loureiro MDR, Ferreira Júnior MA, Souza AS. Occurrence and risk factors for pressure injuries in intensive care centers. *J Nurs UFPE on line*. 2018 Feb;12(2):303-11. DOI: <https://doi.org/10.5205/1981-8963-v12i2a23251p303-311-2018>
9. Pereira MCC, Beserra WC, Pereira AFM, Andrade EMLR, Luz MHBA. Pressure injury incidence in a university hospital. *Rev Enferm UFPI*. 2017 Jan/Mar;6(1):36-9. DOI: <https://doi.org/10.26694/reufpi.v6i1.5771>
10. Vasconcelos JMB, Caliri MHL. Ações de enfermagem antes e após um protocolo de prevenção de lesões por pressão em terapia intensiva. *Esc Anna Nery Rev Enferm*. 2017 Jan;21(1):e20170001. DOI: <http://dx.doi.org/10.5935/1414-8145.20170001>
11. Wagner-Cox P, Duhamel HM, Jamison CR, Jackson RR, Fehr ST. Use of noncontact low-frequency ultrasound in deep tissue pressure injury: a retrospective analysis. *J Wound Ostomy Continence Nurs*. 2017 July/Aug;44(4):336-42. DOI: [10.1097/WON.0000000000000342](https://doi.org/10.1097/WON.0000000000000342)
12. Cunha DR, Salomé GM, Massahud Junior MR, Mendes B, Ferreira LM. Development and validation of an algorithm for laser application in wound treatment. *Rev Latino-Am Enfermagem*. 2017 Dec;25:e2955. DOI: <http://dx.doi.org/10.1590/1518-8345.1998.2955>
13. Carvalho MRF, Salomé GM, Ferreira LM. Construction and validation of algorithm for treatment of pressure injury. *J Nurs UFPE on line*. 2017 Oct;11(10):4171-83. DOI: [10.5205/reuol.10712-95194-3-SM.1110sup201722](https://doi.org/10.5205/reuol.10712-95194-3-SM.1110sup201722)
14. Benevides JL, Coutinho JFV, Tomé MABG, Gubert FA, Silva TBC, Oliveira SKP. Nursing strategies for the prevention of pressure ulcers in intensive therapy: integrative review. *J Nurs UFPE on line*. 2017 May;11(5):1943-52. DOI: <https://doi.org/10.5205/1981-8963-v11i5a23344p1943-1952-2017>
15. Loudet CI, Marchena MC, Maradeo MR, Fernández SL, Romero MV, Valenzuela GE, et al. Reducing pressure ulcers in patients with prolonged acute mechanical ventilation: a quasi-experimental study. *Rev Bras Ter Intensiva*. 2017 Jan/Mar;29(1):39-46. DOI: <http://dx.doi.org/10.5935/0103-507x.20170007>

16. Oliveira KDL, Haack A, Fortes RC. Terapia nutricional na lesão por pressão: revisão sistemática. *Rev Bras Geriatria Gerontol*. 2017 July/Aug;20(4):562-70. DOI: <http://dx.doi.org/10.1590/1981-22562017020.160195>
17. Medeiros LNB, Silva DR, Guedes CDFS, Souza TKC, Araújo Neta BPA. Prevalence of pressure ulcers in intensive care units. *J Nurs UFPE on line*. 2017 July;11(7):2697-703. DOI: <https://doi.org/10.5205/1981-8963-v11i7a23442p2697-2703-2017>
18. [Yap](#) TL, [Kennerly](#) SM, [Bergstrom](#) N, [Hudak](#) SL, [Horn](#) SD. An evidence-based cue-selection guide and logic model to improve pressure ulcer prevention in long-term care. *J Nurs Care Qual*. 2016 Jan/Mar;31(1):75-83. DOI: [10.1097/NCQ.0000000000000128](http://dx.doi.org/10.1097/NCQ.0000000000000128)
19. Olkoski E, Assis GM. Application of measures for preventing pressure ulcers by the nursing team before and after an education campaign. *Esc Anna Nery Rev Enferm*. 2016 Apr/June;20(2):363-9. DOI: <http://dx.doi.org/10.5935/1414-8145.20160050>
20. Lopes CMM, Haas VJ, Dantas RAS, Oliveira CG, Galvão CM. Assessment scale of risk for surgical positioning injuries. *Rev Latino-Am Enfermagem*. 2016 Aug;24:e2704. DOI: <http://dx.doi.org/10.1590/1518-8345.0644.2704>
21. Martins MDS, Ribas PSC, Sousa JRA, Silva NAP, Preto LSR, Correia TIG. Facial pressure ulcers in inpatients undergoing non-invasive ventilation in intermediate care units. *Referência*. 2016 July/Sept;4(10):103-11. DOI: <http://dx.doi.org/10.12707/RIV16015>
22. Ferreira JDL, Aguiar ESS, Lima CLJ, Brito KKG, Costa MML, Soares MJGO. Preventive actions against pressure ulcers in elderly with functional decline of physical mobility at home environment. *Estima*. 2016;14(1):36-42. DOI: [10.5327/Z1806-3144201600010006](http://dx.doi.org/10.5327/Z1806-3144201600010006)
23. Cavalcante MLSN, Borges CL, Moura AMFTM, Carvalho REFL. Indicators of health and safety among institutionalized older adults. *Rev esc enferm USP*. 2016 July/Aug;50(4):602-9. DOI: <http://dx.doi.org/10.1590/S0080-623420160000500009>
24. Almeida AFS, Soares TSB, Abreu RNDC, Mendonça FAC, Guanabara MAO, Sampaio L RL. Influência de fármacos sobre a formação de úlceras por pressão: revisão integrativa. *Rev Enferm Contemporânea*. 2016 Jan/June;5(1):118-24. DOI: <http://dx.doi.org/10.17267/2317-3378rec.v5i1.681>
25. Moraes JT, Borges EL, Lisboa CR, Cordeiro DCO, Rosa EG, Rocha NA. Concept and rating of pressure injury: update of the national pressure ulcer advisory panel. *Rev Enferm Cent-O Min [Internet]*. 2016 May/Aug;6(2):2292-306. DOI: [10.19175/recom.v6i2.1423](http://dx.doi.org/10.19175/recom.v6i2.1423)
26. Tibes CM, Cherman EA, Souza VMA, Évora YDM, Zem-Mascarenhas SH. Image processing in mobile devices to classify pressure injuries. *J Nurs UFPE on line*. 2016 Nov;10(11): 3840-3847. DOI: [10.5205/1981-87554-1-EDSM1011201604](http://dx.doi.org/10.5205/1981-87554-1-EDSM1011201604)
27. Oliveira AC, Garcia PC, Nogueira LS. Nursing workload and occurrence of adverse events in intensive care: a systematic review. *Rev esc enferm USP*. 2016 July/Aug;50(4):683-94. DOI: <http://dx.doi.org/10.1590/S0080-623420160000500020>
28. Eberhardt TD, Lima SBS, Lopes LFD, Borges EL, Weiller TH, Fonseca GGP. Measurement of the area of venous ulcers using two software programs. *Rev Latino-Am Enfermagem*. 2016 Dec;24:e2862. DOI: <http://dx.doi.org/10.1590/1518-8345.1673.2862>
29. Palagi S, Severo IM, Menegon DB, Lucena AF. Laser therapy in pressure ulcers: evaluation by the Pressure Ulcer Scale for Healing and Nursing Outcomes Classification. *Rev esc enferm USP*. 2015 Oct;49(5):826-33. DOI: <http://dx.doi.org/10.1590/S0080-623420150000500017>
30. Campanili TCGF, Santos VLCCG, Strazzieri-Pulido KC, Thomaz PBM, Nogueira PC. Incidence of pressure ulcers in cardiopulmonary intensive care unit patients. *Rev esc enferm USP [Internet]*. 2015 Dec [cited 2019 Jan 25];49(Spe):7-13. DOI: <http://dx.doi.org/10.1590/S0080-623420150000700002>
31. Moraes GLA, Borges CL, Oliveira ET, Lopes MO, Silva MJ. Effect of a pressure ulcer prevention protocol in elderly. *J Nurs UFPE on line*. 2015 May;9(4):8044-53. DOI: [10.5205/1981-87554-1-RV.0904supl201509](http://dx.doi.org/10.5205/1981-87554-1-RV.0904supl201509)
32. Sving E, Idvall E, Högberg H, Gunningberg L. Factors contributing to evidence-based pressure ulcer prevention. A cross-sectional study. *Int J Stud*. 2014 May;51(5):717-25. DOI: [10.1016/j.ijnurstu.2013.09.007](http://dx.doi.org/10.1016/j.ijnurstu.2013.09.007)
33. Queiroz ACCM, Mota DDCF, Bachion MM, Ferreira ACM. Pressure ulcers in palliative home care patients: prevalence and characteristics. *Rev esc enferm USP*. 2014 Apr;48(2):264-71. DOI: <http://dx.doi.org/10.1590/S0080-6234201400002000010>
34. Clark F, Pyatak EA, Carlson M, Blanche EI, Vigen C, Hay J, et al. Implementing trials of complex interventions in community settings: the USC-Rancho Los Amigos pressure ulcer prevention study (PUPS). *Clin Trials*. 2014 Apr;11(2):218-29. DOI: [10.1177/1740774514521904](http://dx.doi.org/10.1177/1740774514521904)
35. Albuquerque A, Souza MA, Torres VSF, Porto VA, Soares MJGO, Torquato IMB. Avaliação e prevenção da úlcera por pressão pelos enfermeiros de terapia intensiva: conhecimento e prática. *J Nurs UFPE on line*. 2014 Feb;8(2):229-39. DOI: [10.5205/1981-87554-1-RV.0802201401](http://dx.doi.org/10.5205/1981-87554-1-RV.0802201401)

36. Ascari RA, Veloso J, Silva OM, Kessler M, Jacoby AM, Schwaab G, et al. Úlcera por pressão: um desafio para a enfermagem. Braz J Surg Clin Res [Internet]. 2014 Mar/May [cited 2018 Aug 10];6(1):11-6. Available from: https://www.researchgate.net/publication/279718506_ULCERA_POR_PRESSAO_UM_DESAFIO_PARA_A_ENFERMAGEM
37. Moore ZEH, Cowman S. Risk assessment tools for the prevention of pressure ulcers. Cochrane Database Syst Rev. 2014 Feb;(2):CD006471. DOI: [10.1002/14651858.CD006471](https://doi.org/10.1002/14651858.CD006471)
38. Bavaresco T, Lucena AF. Nursing Intervention Classifications (NIC) validated for patients at risk of pressure ulcers. Rev Latino-Am Enfermagem. 2012 Nov/Dec;20(6):1109-16. DOI: [http://dx.doi.org/10.1590/S0104-11692012000600013](https://dx.doi.org/10.1590/S0104-11692012000600013)

Corresponding author

Danielle Martins do Nascimento Oliveira
E-mail: danimartins84@hotmail.com

Submission: 2019/03/23

Accepted: 2019/09/08

Copyright© 2019 Journal of Nursing UFPE on line/JNOUL.

This is an Open Access article distributed under the terms of the [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/). This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. Recommended for maximum dissemination and use of licensed materials.