

The role of nurses in the prevention and treatment of pressure injuries*El papel de las enfermeras en la prevención y el tratamiento de las lesiones por presión**O papel dos enfermeiros na prevenção e no tratamento de lesões por pressão***Amanda Camargo da Silva¹**

ORCID: 0000-0002-2834-832X

Anelvira de Oliveira Florentino^{2*}

ORCID: 0000-0001-8628-0565

Cláudia Rosana Trevisani Corrêa²

ORCID: 0000-0002-3158-8666

**Ingridy Tayane Gonçalves Pires
Fernandes³**

ORCID: 0000-0002-9334-6857

Gercilene Cristiane Silveira⁴

ORCID: 0000-0002-1642-6917

Giovana Cristina Serra D'Amico⁴

ORCID: 0000-0002-3397-0850

Ítalo Frizo⁵

ORCID: 0000-0002-9736-3785

Cristiano Rodrigues da Mota⁵

ORCID: 0000-0003-3154-7124

**Amanda Aparecida Camargo de
Oliveira²**

ORCID: 0000-0002-4938-7561

¹Universidade do Sudoeste Paulista. São Paulo, Brazil.²Universidade Estadual Paulista. São Paulo, Brazil.³Universidade Anhembi-Morumbi. São Paulo, Brazil.⁴Faculdades Integradas de Jaú. São Paulo, Brazil.⁵Faculdade de Ensino Superior Santa Bárbara. São Paulo, Brazil.***Corresponding author:** E-mail: anelviraflorentino@yahoo.com.br**Abstract**

The aim of this study is to identify the role of nurses in the prevention and nursing care of patients with pressure injuries. This is a literature review with a descriptive, qualitative, and narrative approach, using scientific articles available in the Google Scholar, SciELO, and Virtual Health Library databases, and employing the Health Sciences descriptors: "Pressure injury," "Prevention," and "Nursing." The descriptor "Assistance," selected using the Boolean operator AND, was also used. Ten studies were chosen. The research demonstrated that prevention is the best method to avoid pressure injuries and that, with adequate nursing care, it is possible to prevent prolonged hospital stays, thus avoiding long-term damage. It was observed that the assessment of risk factors is fundamental for providing effective care. Considering the complexity of managing these injuries, it is necessary to seek alternatives that minimize their occurrence. It was concluded that the nursing professional is an important professional who acts as a leader in the intervention and, mainly, in the management of care during nursing assistance. Therefore, it is essential that these professionals are trained, thereby improving the care provided to the patient.

Descriptors: Pressure Injury; Nursing; Disease Prevention; Nursing Care; Risk Factors.**How to cite this article:**

Silva AC, Florentino AO, Corrêa CRT, Fernandes ITGP, Silveira GC, D'Amico GCS, Frizo I, Mota CR, Oliveira AAC. The role of nurses in the prevention and treatment of pressure injuries. Glob Clin Res. 2024;4(2):e75. <https://doi.org/10.5935/2763-8847.20210075>

Submission: 01-26-2024**Approval:** 03-19-2024

Resumén

El objetivo de este estudio es identificar el rol del personal de enfermería en la prevención y la atención de pacientes con lesiones por presión. Se trata de una revisión bibliográfica con un enfoque descriptivo, cualitativo y narrativo, que utiliza artículos científicos disponibles en las bases de datos de Google Académico, SciELO y la Biblioteca Virtual de Salud, y emplea los descriptores de Ciencias de la Salud: "Lesión por presión", "Prevención" y "Enfermería". También se utilizó el descriptor "Asistencia", seleccionado mediante el operador booleano AND. Se seleccionaron diez estudios. La investigación demostró que la prevención es el mejor método para evitar las lesiones por presión y que, con una atención de enfermería adecuada, es posible prevenir estancias hospitalarias prolongadas, evitando así daños a largo plazo. Se observó que la evaluación de los factores de riesgo es fundamental para brindar una atención eficaz. Dada la complejidad del manejo de estas lesiones, es necesario buscar alternativas que minimicen su ocurrencia. Se concluyó que el profesional de enfermería es un profesional importante que actúa como líder en la intervención y, principalmente, en la gestión de la atención durante la asistencia de enfermería. Por lo tanto, es esencial que estos profesionales se capaciten para mejorar la atención brindada al paciente.

Descriptores: Lesión por Presión; Enfermería; Prevención de Enfermedades; Atención de Enfermería; Factores de Riesgo.

Resumo

O objetivo deste estudo é identificar o papel do enfermeiro na prevenção e no cuidado de enfermagem a pacientes com lesões por pressão. Trata-se de uma revisão de literatura com abordagem descritiva, qualitativa e narrativa, utilizando artigos científicos disponíveis nas bases de dados *Google Scholar*, SciELO e Biblioteca Virtual em Saúde e empregando os descritores em Ciências da Saúde: "Lesão por pressão", "Prevenção" e "Enfermagem". O descritor "Assistência", selecionado pelo operador booleano AND, também foi utilizado. Dez estudos foram escolhidos. A pesquisa demonstrou que a prevenção é o melhor método para evitar lesões por pressão e que, com o cuidado de enfermagem adequado, é possível prevenir internações hospitalares prolongadas, evitando, assim, danos a longo prazo. Observou-se que a avaliação dos fatores de risco é fundamental para a prestação de um cuidado eficaz. Considerando a complexidade do manejo das lesões, é necessário buscar alternativas que minimizem sua ocorrência. Concluiu-se que o profissional de enfermagem é um profissional importante que atua como líder na intervenção e, principalmente, na condução do cuidado durante a assistência de enfermagem. Portanto, é essencial que esses profissionais sejam capacitados, aprimorando, assim, o cuidado prestado ao paciente.

Descritores: Lesão por Pressão; Enfermagem; Prevenção de Doenças; Cuidados de Enfermagem; Fatores de Risco.

Introduction

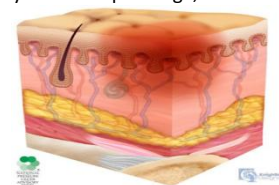
Pressure injuries (PIs) are considered a significant public health problem, affecting a substantial percentage of the population, between 23.1% and 59.3%, according to the National Pressure Ulcer Advisory Panel (NPUAP). Caring for these injuries requires professionals to possess extensive scientific knowledge. This study is highly relevant for healthcare professionals as it highlights the importance of prevention and care for patients with pressure injuries. It is crucial to discuss the impacts that PIs can have on patients' lives, as they reflect on their quality of life in various aspects, including emotional, social, and especially economic factors, which are significant in the current healthcare system¹.

The skin is considered the largest organ in the human body. It is divided into three layers: the epidermis, the dermis, and the hypodermis, in addition to other denser tissues. It is the body's main protection, safeguarding its structures from numerous microorganisms. Therefore, pressure injuries represent a significant and serious public health problem. We can relate pressure injuries to internal and external factors that are generally associated with an increase in external pressure or pressure combined with shear, usually on bony prominences, which can cause tissue

damage, leading to various complications that can result in health problems^{2,3}.

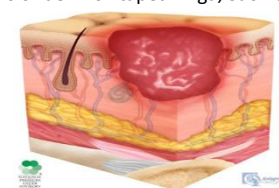
Pressure injuries are classified into four stages according to their development by the NPUAP, with the following classifications⁴:

Figure 1. Stage one pressure injury, characterized by intact skin with minimal erythema. Itapetininga, São Paulo, Brazil, 2023



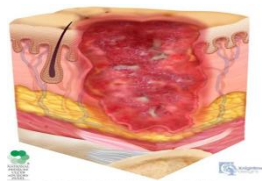
Source: NPUAP⁴.

Figure 2. Second-degree pressure injury with partial skin rupture affecting the epidermis or dermis. Itapetininga, São Paulo, Brazil, 2023



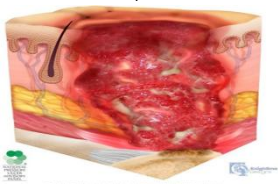
Source: NPUAP⁴.

Figure 3. Stage three pressure injury with complete skin breakdown, involving damage and necrosis of the subcutaneous layer, but not completely. Characterized by greater tissue destruction. Itapetininga, São Paulo, Brazil, 2023



Source: NPUAP⁴.

Figure 4. Stage four pressure injuries occur when necrotic tissue is present, along with muscle and bone damage, or even damage to supporting structures such as tendons and the joint capsule. Itapetininga, São Paulo, Brazil, 2023



Source: NPUAP⁴.

However, there are other injuries that may not be classifiable, including those caused by medical devices. For example, pressure injuries related to medical devices can occur in areas such as the ears, due to the use of oxygen cannulas, and in the mouth, due to the use of endotracheal tubes. These pressure injuries are largely unknown to nurses and nursing staff, but are considered a recurring clinical problem that requires further investigation⁵.

It is known that lung injuries have a significant impact on the lives of patients and their families in various ways, resulting in high treatment costs and, primarily, a higher risk of infection for these patients due to longer hospital stays. However, it is crucial to understand that, while wound care is of paramount importance, treatment and prevention decisions are made by the nursing team. The nurse is the most important professional at this stage, as they recognize the patient's needs and, together with the multidisciplinary team, develop the necessary care plan¹.

Nursing professionals are widely involved in the prevention and, especially, the treatment of wounds, whether in primary, secondary, or tertiary care. Constant observation is invaluable, but various factors, both systemic and external, can contribute to the development of a wound and interfere with the healing process⁶.

Nurses face a significant challenge in their practice, encountering increasingly complex issues related to the care of patients with chronic diseases such as diabetes mellitus, hypertension, loss of sensation, muscle spasms, nutritional deficiencies, anemia, circulatory diseases, heart and kidney diseases, use of medications such as corticosteroids, and excessive smoking. These are risk factors that can trigger the development of lichen planus (LP), requiring hospitalization for the treatment of these diseases, which, in turn, leads to the development of lichen planus due to prolonged hospital stays^{1,6}.

Therefore, it is necessary to intervene with preventive measures and individualized care for each patient. This includes reviewing test results, medical histories, and performing physical examinations; providing guidance from the nursing staff on repositioning; using skin protection products; and, most importantly, monitoring the patient's nutritional status. These measures ensure the safety and quality of care provided. The nurse, as a leader, plays a fundamental role in planning the care to be offered, with the aim of more comprehensively controlling potential harm to patients⁷.

Regarding the role of nurses in the treatment of joint effusion injuries, it is important to highlight the limited attention given to the application of the Nursing Care Systematization (NCS) and the Nursing Process (NP), as well as their expected results in relation to nursing care for the prevention and management of injuries. The motivation for this study lies in highlighting the significant research gap on the subject and in the conviction that the systematization of actions can offer a valuable contribution to professionals and academic institutions, with a strong focus on the care provided by the professional¹.

Given the above, the present study aimed to identify the role of nurses in the prevention and nursing care of patients with pressure injuries.

Methodology

This is a descriptive literature review study, qualitative and narrative in nature. The following databases were used as research sources: Google Scholar, SciELO, and the Virtual Health Library, using the DeCS/MeSH (Medical Subject Headings) descriptors: "Pressure injury," "Prevention," and "Nursing care" / "Pressure injury," "Prevention," and "Nursing care," with the aid of the Boolean operator "AND." Regarding eligibility criteria, the inclusion criteria for study selection were: scientific articles published between 2015 and 2021, in Portuguese, indexed in the selected databases, and that answered the guiding question of the study, namely: "What is the role of nurses in the prevention and treatment of patients with pressure injuries?". The exclusion criteria were duplicate articles in the databases and articles not freely available in full. A total of 1,790 articles were found; only 10 were used in this research. Studies that did not meet the search criteria were excluded because they presented irrelevant content for this research. The search and selection of studies were carried out between January and March 2021. The reading and analysis of the content were initially done by title; those not related to the theme were excluded because they were not aligned with the problem addressed. After reading and analyzing the selected articles, these served to achieve the main objective of this study, resulting in the synthesis presented below.

Results and Discussion

The 10 selected studies are presented in Chart 1 according to their variables.

Chart 1. Synoptic overview of selected studies. Itapetininga, São Paulo, Brazil, 2023

Article	Year	Objective	Results	Conclusion
Percepção de profissionais sobre lesão por pressão relacionada a dispositivos médicos	2021	Understand the perception of nursing professionals working in an intensive care unit regarding pressure injuries related to medical devices.	Three central ideas were explored: the types of devices and the occurrence of pressure injuries related to medical devices where contact is unavoidable, and how the lack of knowledge among professionals about the impact of these injuries on the patient's life after hospital discharge contributes to this scenario.	It can be concluded that professionals' perception of pressure injuries related to medical and nursing devices may be linked to the types of devices used, the care provided by the nursing staff, and the impact on the lives of these patients.
Conceito e classificação de lesões por pressão	2019	Present in Portuguese the terminology, concept, and description of the stages of pressure injury. Established by the National Advisory Panel on Pressure Ulcers in 2016.	The term pressure ulcer has been renamed pressure ulcer, and its concepts and classifications have been altered due to new nomenclature updates.	The Advisory Panel on Pressure Ulcers expanded the concept and added new presentations on pressure injuries, information that can better describe the behavior of these injuries.
Intervenções de enfermagem para pacientes com lesão por pressão	2019	Analyze the scientific literature on CIPE® nursing interventions for patients with pressure injuries.	This research demonstrates that, of the 152 articles reviewed, 31 met the inclusion criteria. The participation of different professionals was also observed, with nurses being the most prevalent in this study.	Considering the discussions in this study, it can be concluded that the prevention and treatment of pressure injuries remain a major challenge for nurses, and it is extremely important that they know how to identify the patient's real needs and how to put them into practice in care planning.
Lesão por pressão medidas terapêuticas utilizadas por profissionais de enfermagem	2019	Analyze practices related to skin assessment and the risk of developing pressure injuries (PIs) in patients; to identify the measures used by the nursing staff in the prevention and use of topical therapy for pressure injuries (PIs); to investigate the difficulties in PI care caused by the work environment.	The results sought in this study were those of the 32 professionals who participated, 50% nurses and the other 50% nursing technicians. The team's objective was to analyze the patients' skin type upon admission, and it was observed that the best time for assessment and treatment is during bed bathing, when nurses can perform the assessment and use the Braden Scale.	Based on the searches conducted, it is concluded that the information found in the literature coincides with the results obtained in this research. Therefore, it is essential to emphasize that continuing education is an important tool for nurses to stay updated on new practices and coverage modalities, so that the nursing team, and especially the nurse as a leader, has a more solid scientific basis for safety in their daily practice.
Conhecimento de enfermeiros sobre prevenção e cuidados de lesão por pressão	2019	Identify the knowledge of clinical nurses regarding the prevention and treatment of pressure injuries (PI) in the medical-surgical units of a university hospital in Brasília.	The results obtained in this research showed that a large proportion of the nurses interviewed did not possess specific knowledge for the care of patients at risk of pressure injuries and, therefore, the care could not be effective.	It can be concluded that there is a significant lack of scientific knowledge regarding the care that can compromise the assistance provided to these patients with pressure injuries.
O papel do enfermeiro na prevenção, avaliação e tratamento das lesões por pressão.	2017	Review articles that highlight the role of nurses in the assessment, classification, and treatment of patients with pressure injuries, given that wound care is currently a nursing specialty that requires specific knowledge and expertise.	Nurses play a vital role in the treatment of pressure injuries and must continue to encourage and, above all, train their teams to achieve good patient care outcomes.	In conclusion, with preventive measures and effective treatments, it is possible to avoid patient suffering, both physical and psychological, allowing us to offer effective, rapid, and, above all, humane treatment for patients with pressure injuries.
Abordagem do enfermeiro na prevenção de feridas em pacientes hospitalizados	2017	Identify risk factors for pressure injuries and describe nursing care related to the prevention of pressure injuries in hospitalized patients.	This research may identify that patients with underlying pathologies are considered a significant risk factor for pressure injuries due to the consequences of these diseases on their bodies.	The care provided by professional nurses is fundamental in the prevention and treatment of patients at risk of pressure injuries.

A importância da assistência de enfermagem na prevenção da úlcera por pressão no paciente hospitalizado	2008	This exploratory study analyzes the literature from the last ten years and seeks to clarify and deepen the understanding of pressure ulcers (PI) and their risk factors to contribute to nursing care in PI prevention.	This study discussed the importance of the scientific content used to conduct this research. Some risk factors mentioned in this study were immobility, which is related to lack of physical activity, excessive pressure, and shear. The pressure injuries presented by the patients are crucial, as the correct treatment and evolution of these injuries depend on this assessment.	In conclusion, with preventive measures and effective treatments, it is possible to avoid patient suffering, both physical and psychological, allowing us to offer effective, rapid, and, above all, humane treatment for patients with pressure injuries.
O papel da enfermagem na prevenção de lesão por pressão: uma revisão integrativa	2018	This review aims to identify the importance of prevention in cases of pressure injuries through actions that demonstrate care, emphasizing the role of the nurse as a leader of the nursing team.	Pressure injuries occur due to skin exposure to external and internal factors such as shear, friction, and moisture, as well as comorbidities. Like diabetes mellitus and hypertension, and influenced by the patient's nutritional status, these injuries can be classified into four stages, making their prevention of paramount importance.	Prevention is the main factor in preventing and reducing pressure injuries, as it provides patient safety during treatment, thus improving their quality of life. Therefore, the nurse's role as a leader is fundamental in the care strategy offered to the patient, ensuring stability in cases of pressure injuries.
Assistência de enfermagem na prevenção da lesão por pressão: uma revisão integrativa	2019	Analyze the scientific literature on nursing care aimed at preventing pressure injuries in hospitalized patients.	The results obtained in this research demonstrate the importance of training the nursing team to act effectively in the prevention and, especially, in the treatment of injuries.	The data collected in this research show that the prevention and treatment of pressure injuries are interconnected with the nursing team.

Considering the detailed analysis of the selected articles, it is observed that there are many studies related to the topic addressed in this research, which allows us to present the main categories that will be covered, such as: "Concept of pressure injury", "The importance of training health professionals" and "The importance of prevention and assessment of risk factors".

Concept of pressure injury

According to the NPUAP, the concept of pressure injury is defined as localized damage to the skin or tissue, usually over a bony prominence or associated with medical equipment and other devices. The injury may present as intact skin or as an open wound that may be painful. It is caused by prolonged pressure on a specific area or by a combination of shear and pressure, preventing tissue perfusion, reducing blood circulation, causing tissue death and, consequently, skin necrosis. It can occur in both adults and children, being more common in the trochanteric, calcaneal and sacral regions, among others^{4,8}.

Most injuries can develop within 24 hours or even less, up to five days after the first signs appear. Therefore, the nursing staff must be attentive to preventive measures. In this sense, adherence to preventive measures is crucial to avoid pressure that causes friction on the tissues. Injury prevention is fundamental and requires maximum attention, as the work of the nursing staff is vital to prevent the development of injuries. Compared to the time and costs of treating an existing injury, the damage caused by it can be much greater^{9,10}.

There is a lack of preventive actions for the development of pressure ulcers, and based on this reality, it becomes necessary to implement immediate and, above all,

effective preventive actions that can minimize harm to the patient.

The importance of training healthcare professionals

Nurses are fully trained to treat injuries and assess each patient's risk factors; in addition, they can develop nursing diagnoses as a tool for care planning¹¹.

According to the World Health Organization, the high prevalence of pressure injuries is a key indicator for determining the effectiveness of care in healthcare institutions, and it emphasizes that most injuries acquired during hospitalization are preventable if reliable prevention methods are used¹².

Training is fundamental to recognizing patients at risk of injury; however, it must be remembered that it depends not only on the professional's scientific and technical knowledge, but also on the protocols used for assessment, making it necessary for nurses to constantly update themselves on new technologies related to healthcare⁹.

It is worth highlighting that the Nursing Process is closely linked to care planning, being a very important tool in clinical practice for the nursing team, as it assists the nurse in the prevention and treatment of problems detected during care. The care process is constant and, to ensure quality care, transformations and updates must be continuous. For this, it is necessary that nurses are trained to lead and, above all, provide a quality service to the client, always seeking physical and mental well-being¹.

The importance of prevention and risk factor assessment

In the main international guidelines for the prevention of pressure ulcers, the NPUAP and the European

Advisory Panel on Pressure Ulcers (EPUAP) adopt an approach that establishes that the assessment and identification of the risk of developing a lesion may be linked to factors such as changes in muscle tone, physical causes such as loss of mobility, coma, malnutrition, changes in level of consciousness, change of position and other diseases that may be interrelated^{13,14}.

Therefore, rigorous and continuous assessment by the nursing team allows for the identification and prevention of potential risks based on accurate diagnosis and the individual needs of each patient. Success in risk management depends on the team's vision and, above all, on the prevention of risk factors³.

However, establishing preventive measures is fundamental to avoiding future injuries; therefore, the nurse, as a leader, must develop individualized care plans for each patient and assess their health history and associated risk factors, using protocols such as the Braden Scale, widely used in healthcare institutions to predict a patient's risk factors in relation to possible injuries during hospitalization^{15,16}.

Considering scientific discoveries, we can consider current technology as a resource of great importance, a tool

Conclusion

Considering the results of this research, based on a literature review, nursing care and assistance make a significant difference in the prevention and, especially, in the recovery of patients who develop pressure injuries during hospitalization. However, we must possess scientific and technical knowledge to provide adequate care and ensure the well-being of patients and their families. Simple measures, such as repositioning, protection of bony prominences, skin hydration, good nutrition, and adequate water intake, are fundamental factors that can prevent potential injuries and, potentially, a prolonged hospital stay. We can conclude that the nurse's role in pressure injury care is crucial for the team to provide adequate and humane care, always aiming at managing cases and providing the best possible care, evaluating the patient's history and physical examination from admission to discharge. The prevention and treatment of patients with pressure injuries still represent a major challenge for nurses and the nursing team, as it is necessary to identify the needs of each patient, encompassing the whole, and offering comprehensive care.

References

1. Oliveira DMN, Costa MML, Malagutti W. Intervenções de enfermagem para pacientes com lesão por pressão. Rev enferm UFPE on line. 2019;13:e240237. DOI: 10.5205/1981-8963.2019.240237
2. Potter PA, Perry AG. Fundamentos de enfermagem: conceitos, processo e prática. 6. ed. Rio de Janeiro: Guanabara Koogan; 2006.
3. Irion G. Feridas Novas abordagens, manejo clínico e Atlas em cores. Rio de Janeiro: Guanabara Koogan; 2005.
4. National Pressure Ulcer Advisory Panel. National Pressure Ulcer Advisory Panel (NPUAP) announces a change in terminology from pressure ulcer to pressure injury and updates the stages of pressure injury. [Internet]. 2016 [acesso em 27 dez 2021]. Disponível em: <http://www.npuap.org/national-pressure-ulcer-advisory-panel-npuapannounces-a-change-in-terminology-from-pressure-ulcer-to-pressureinjury-and-updates-the-stages-of-pressureinjury/>
5. Barakat-Johnson M, Barnett C, Wand T, White K. Medical device-related pressure injuries: an exploratory descriptive study in an acute tertiary hospital in Australia. J Tissue Viability. 2017;26(4):246-53. <http://dx.doi.org/10.1016/j.jtv.2017.09.008>
6. Favreto FJL, et al. O papel do enfermeiro na prevenção, avaliação e tratamento das lesões por pressão. RGS [Internet]. 2017 [acesso em 27 dez 2021];17(2):37-47. Disponível em: <http://www.herrero.com.br/files/revista/filea2aa9e889071e2802a49296ce895310b.pdf>
7. Cunha NA. Sistematização da assistência de enfermagem no tratamento de feridas crônicas [Internet]. 2006 [acesso em 27 dez 2021]. Disponível em: <http://www.abenpe.com.br>
8. Moraes JT, Borges EL, Lisboa CR, et al. Conceito e classificação de lesão por pressão: atualização do National Pressure Ulcer Advisory Panel. Enferm. Cent. O. Min. 2016 mai/ago; 6 (2):2292-2306 DOI: 10.19175/recom.v6i2.1423
9. Costa AM, Matozinhos ACS, Trigueiro PS, Cunha RCG, Moreira LR. Custos do tratamento de lesão por pressão em unidade de cuidados prolongados em uma instituição hospitalar de Minas Gerais. Enfermagem Revista [Internet]. 2015 [acesso em 27 dez 2021];18(1): 58-74. Disponível em: <http://periodicos.pucminas.br/index.php/enfermagemrevista/article/view/9378>
10. Malicia VV, Sória DDAC, Coelho FM, de Souza Calirri MB. Lesão por pressão: desafios e compensações da avaliação de enfermagem com o uso de escala de Braden. Rev. Pesq. Cuid. Fundam. Online [Internet]. 2010 [acesso em 27 dez 2021];2(Supl.):1011-1014. Disponível em: <https://www.redalyc.org/pdf/5057/505750987142.pdf>
11. Menegon DB, et al. Implantação do protocolo assistencial de prevenção e tratamento de úlcera de pressão no hospital de clínicas de Porto Alegre [Internet]. Porto Alegre, 2007 [acesso em 27 dez 2021]. Disponível em: <https://lume.ufrgs.br/handle/10183/164480>
12. Louro M, Ferreira M, Póvoa P. Avaliação de protocolo de prevenção e tratamento de úlceras de pressão. Rev. Bras. Enferm. 2007;19(3). <https://doi.org/10.1590/S0103-507X2007000300012>
13. 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
14. Galetto SGS, Nascimento ERP, Hermida PMV, Malfussi LBH. Medical device-related pressure injuries: an integrative literature review. Rev. bras. enferm. 2019;72(2):505-12. <http://dx.doi.org/10.1590/0034-7167-2018-0530>
15. Almeida CS, Cunha GAA, Guimarães JC, Santos LG, Lisboa LM. Avaliação da utilização de protocolos na prevenção de lesões por pressão. Ciênc. saúde coletiva. 2012;5(2):125-131.
16. Souza VPS, et al. Assistência de enfermagem na prevenção de lesão por pressão. Rev. bras. Enferm. 2016;15(3):312- 318.



17. Sousa RC, Faustino AM. Nurses' understanding about the pressure injury prevention and care. *Rev Fun Care Online*. 2019; 992-997. <http://dx.doi.org/10.9789/2175-5361.2019.v11i4>
18. Spin M, Cassola EG, Mizobata V, Rondina Pupo da Silveira R, Marcondes Sardeli K, Carreira Oliveira B, do Nascimento AC, Felipe T, Novelli e Castro MC, Silva Cyrino CM. Processo de enfermagem aplicado a paciente com infecção operatória pós colectomia e nefroureterectomia. *Glob Acad Nurs*. 2021;2(2):e141. <https://doi.org/10.5935/2675-5602.20200141>