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NURSE'S ACTIVITIES IN THE PREVENTION AND TREATMENT OF PRESSURE INJURIES IN HOSPITALIZED PATIENTS

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ABSTRACT

Pressure Injury (LPP) is an injury caused by prolonged pressure or stress combined with friction and shear. This complication affects approximately 29.5% of hospitalized patients, with chronic, cardiac or neurological comorbidities. Objective was to synthesize the scientific production of nursing on the prevention of pressure injury to hospitalized patients. The present research is an integrative review of the literature indexed in two ScieLO databases and MEDLINE (Medical Literature Analysis and Retrieval System online). According to the pre-established inclusion criteria, the sample consisted of 05 studies with a publication date that ranged from 2010 to 2017. The results showed that pressure injury is a relevant problem in the Intensive Therapy Units (ICUs), due to the long stay of hospitalized patients, and the degree of complexity that they are, because they are vulnerable to several factors that alter the integrity of the skin. The multiplicity of conditions and factors identified in this study leads us to reflect on the need for a systematized clinical evaluation of the patient, which contemplates the plurality of variables present during hospitalization and aspects related to institutional responsibility.

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INTRODUCTION

Injury pressure (LPP) is a major problem in the hospitals, which is characterized as an injury caused by sustained pressure or pressure combined with friction and shear (NPUAP, 2016).

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LPPs are localized to the skin and underlying tissues resulting from pressure, which results in decreased blood supply. The pathophysiology is directly related to the sites of higher frequency, such as occipital, sacral, coccyx, trochanters and calcaneous (Mazzo *et al.*, 2018). Currently, LPP is a consequence of hospitalization for long-term stay in hospitals. This multifactorial disorder involves several aspects, such as: clinical, physical and emotional condition of the client. Risk factors that favor the emergence of LPPS can be intrinsic, such as immobility, abnormal sensitivity, impaired sensory

Table 1. Synthesis of selected studies in the sample

STUDY	TITLE	AUTHOR	YEAR	PERIODICAL
1	Nursing Care in the Prevention of Injury by Pressure in Intensive Care Units: A Systematic Review	FRANÇA et al.	2016	Brazilian Journal of Functional Health
2	Risk assessment for pressure ulcer in intensive care units: an integrative review	ALVES et al.	2014	Caution is Fundamental
3	The Brazilian scientific production on Nursing care for patients with Pressure Ulcers	SILVA et al.	2011	Nursing Journal of the Univers.Federal de Santa Maria (UFSM)
4	Factors associated with pressure ulcer (PU) in critically ill patients: an integrative review of the literature	SOUSA et al.	2016	Universitas: health sciences
5	Nurses' Qualification Regarding Pressure Ulcer Prevention at the Sergipe General Hospital	SANTOS et al.	2013	Gaúcha nursing journal

SOURCE: Research Data, 2017.

Table 2. Distribution of the objectives of the selected studies

STUDY	OBJECTIVE
E1	To analyze through the systematic review the main nursing care practices for the prevention of pressure injuries in Intensive Care Units.
E2	To analyze in scientific production the use of risk assessment scales for LPP in Intensive Care Unit.
E3	The Brazilian scientific production on nursing care for patients with pressure ulcers.
E4	To describe the profile of critically ill patients with pressure lesions (LPP) and prevalent risk factors.
E5	To compare the data reported in a pressure ulcer care quality indicator (UP) system, with records on nursing evolutions in patients' charts, to describe the clinical profile and nursing diagnoses of patients who developed UP grade II or higher.

SOURCE: Research Data, 2017.

perception, tissue perfusion deficit, chronic diseases, aging, inadequate nutritional status and extrinsic factors, pressure, friction, shearing, length of hospital stay and humidity. The combination of these factors increases proportionally the incidence and prevalence of the lesions (Teixeira, 2017). In this sense, it becomes important to understand the predisposing aspects of wound development. It is extremely important that the nurse and her team know the factors related to injuries, to intervene effectively preventing complications and expensive treatments, especially risk customers such as the elderly, affecting mobility and favoring the loss of functional capacity. In view of the above, what is the question of the nurse's role in the prevention and treatment of pressure injuries in hospitalized patients?

In order to answer this question, the following objective was outlined: Synthesizing the scientific production about the performance of nursing on the prevention and treatment of pressure injuries in patients at the hospital.

MATERIALS AND METHODS

The present research is of the integrative review type, which is a research method that allows the incorporation of the evidence in clinical practice with the purpose of agglutinating and synthesizing results of research on a certain subject, in a systematic and orderly way, constructed by the steps of data collection, evaluation, examination and interpretation along with the exposure of the results (Mendes *et al.*, 2008). In order to prepare the present integrative review, the following steps were taken: establishing the hypothesis and objectives of the integrative review; establishment of criteria for inclusion and exclusion of articles (sample selection); definition of the information to be extracted from the selected articles; analysis of results; discussion and presentation of the results and the last step consisted of the presentation of the review.

To guide the integrative review, the following question was asked: what is the nurse's role in the prevention and treatment of pressure injuries in hospitalized patients?

Two databases were used for the selection of the articles, namely the VHL (Virtual Health Library), ScieLO and

MEDLINE (Medical Literature Analysis and Retrieval System online). In this way, the scope of the research was extended, minimizing possible biases in this stage of the integrative review process. In order to perform the searches in the bases, the following descriptors were used: injury prevention, nursing care, pressure ulcer. The criteria for inclusion of the articles in full, initially, for the present integrative review were: articles published in Portuguese, with abstracts available in the selected databases, in the period between 2010-2017.

Due to the specific characteristics to access the selected databases, the strategies used to locate the articles were adapted for each one, having as a guiding axis the question and the inclusion criteria of the integrative review, previously established to maintain consistency in the search avoiding possible biases. The search was performed by online access of which 09 articles were analyzed in the Virtual Health Library (VHL) and, using the four inclusion criteria, the final sample of this integrative review was constituted of 05 articles. For the data collection of the articles that were included in the integrative review, an instrument was elaborated, which was submitted to the apparent validation and content by three judges. For the analysis and subsequent synthesis of the articles that met the inclusion criteria, a synoptic framework specially designed for this purpose was used, which included the following aspects considered pertinent: name of the research; title, name of authors; year; kind of study.

RESULTS AND DISCUSSION

The discussion was based on the synthesis of knowledge evidenced in the articles analyzed on the subject, in order to contribute to a broader understanding of the effective care in the prevention of LPP in hospital patients. The sample was composed of 09 (nine) articles in the Virtual Health Library that met the inclusion criteria previously established. Of the articles selected, 05 (five) were found in the ScieLO, LILACS and MEDLINE databases. The publication date ranged from 2010 to 2017. The participation of the nurse in the prevention of Pressure Injury (LPP) is important, through the findings, the authors cited separately the gender in which the incidence of pressure injuries was higher, the risk factors and the preventive

measures that should be adopted by the nursing professionals in their care, making the quality effective. Table 1 presents the specifications of each of the Articles with Title of Article, Author (s), year and Periodical. And TABLE 2 one can see Distribution of the objectives of the selected studies. E1 recognizes the potential problem of pressure lesions in bedridden patients, susceptible to several types of infections, it is essential to identify the care that can be performed to prevent this condition in ICUs. Therefore, nursing plays a fundamental role in this process, since it is directly linked to the patient, and can provide various interventions to the individual at risk. E2, LPP, besides being a problem for people and hospitals, causes an increase in the incidence of morbidity and mortality, resulting in higher costs. In view of this, reducing the incidence would reduce curative costs as well as the use of antibiotics and there would still be a great improvement in the quality of life, considering that the damages caused do not measure the psychological suffering of the subject, nor the wear and tear caused by the subject. length of hospital stay. E3, the production of knowledge of a particular area of activity can be considered an indicator of the directions that guide the professional formation. Thus, this study is presented, which brings as main concern the Brazilian scientific production on Pressure Injury, in the field of health. E4, in this sense, nursing as an active agent in the prevention, promotion and recovery of health should act in the planning, implementation and evaluation of protocols and wound routines, based on the internationally valid assumptions established by the National Pressure Ulcer Advisory Panel (NPUAP) for patients with LPP. Some preventive recommendations include: risk and skin assessment, nutritional status, repositioning and use of support surfaces (NPUAP, 2016).

shows the methodology of the sample studies. E1, A descriptive study, with a mixed approach in the systematic review mode with data collection was carried out in the Scientific Electronic Library Online (SCIELO), Latin American Literature in Health Sciences (LILACS) and Virtual Health Library (VHL). The time cut was from 2003 to 2015, with the following descriptors: pressure lesion, risk assessment and nursing care, totaling 63 articles on the subject. We used as inclusion criteria to further guide the research: original articles available in full, in the Portuguese language and Brazilian regionalization, leaving only 18 articles included in this research. E2 is an integrative review, with a method that provides synthesis of knowledge and incorporation of the applicability of results and significant studies in practice. The method followed the steps: selection of the hypotheses or questions for the review; establishment of sample selection criteria; categorization of studies and synthesis of knowledge produced; analysis of data and results; and interpretation of the results, which provided a critical examination of the findings.

The E2 bibliographical survey was performed in the period of September, October and November of 2012 in the databases: LILACS, MEDLINE and SciELO. The selected descriptors were: scales / scale, pressure ulcer / pressure ulcer, nursing / nursing and risk / risk measurement. The inclusion criteria adopted were: research performed in an intensive care unit; articles that address the risk of LPP; available in full; in Portuguese, Spanish or English published between 2008 and 2012, studies with empirical research data that explain the use of a scale / instrument for the evaluation of the risk for LPP. Will be excluded: monographic works and articles of literature review or theoretical revision. E3 carried out a bibliographical research, understood as the act of investigating and seeking

Table 3. Distribution of the studies according to the Methodology

STUDY	METHODOLOGY
E1	Descriptive study, with a mixed approach in the systematic review modality
E2	Integrative Review
E3	Pesquisa bibliográfica
E4	Integrative Review
E5	Estudo Transversal

SOURCE: Research Data, 2017.

Table 4. Describing Studies by Results

STUDY	RESULTS
E1	The results were classified according to thematic area that covered: gender, risk factors, preventive measures and anatomical location more affected. It was evidenced that the male gender presented a greater incidence for the risk of development of pressure injuries, although there are no data in the literature that justify this statistic.
E2	A number of risk factors were identified, such as: the divergence in LPP predominance in relation to the sexes, body mass index and difficulty in bed mobility, altered sensory perception compromising the verbalization of discomfort, and the use of the Sonda Vesical of Delay predicting the appearance of the lesions. Scale scores remained at high risk and the use of the Glasgow coma scale helped to prevent the risk for PSU when associated with the Bradem.
E3	Of the productions analyzed, 47.14% use field surveys as methodology. Prevalence of productions with patients, 68.57% of these hospitalized in hospitals, 14.28% of the total, involving health professionals, and 2.85% with nursing students.
E4	It was identified in this study that the severity of the patient, defined by high scores on the APACHE II and SAPS II scales, was highlighted as a risk factor. Long periods of intensive care, postoperative and respiratory morbidity were associated with the high incidence of PU in critically ill patients.
E5	The frequency of occurrence of LPP, regardless of the degree, identified by the signs and symptoms described in the nursing evolutions of the patients studied was 19% during their hospitalization. Similarly, a study performed at a university hospital in Belo Horizonte showed a frequency of 18.3% of UP in patients from the medical-surgical area.

SOURCE: Research Data, 2017

E5, the patient considered critical is one who presents instability of one or more vital organs, is imminent of having any hemodynamic change or has severe clinical conditions or need for more frequent and rigorous controls, associated with more complex therapies, of invasive or not. Table 3 below

information on a certain subject, through a survey carried out in the national and foreign databases, in order to detect the existence of consensus or controversial in the literature. E3, the descriptive study, with a quantitative approach carried out in the databases: Nursing Database (BDENF), Latin American

Table 5. Instruments for the prevention of pressure injury

Type of Instrument	Objective	Studies
Bradem scale	To evaluate the patient's conditions regarding the risk of developing PU including social and physical domains of the patient.	E1, E3, E5
Norton Scale	To evaluate the patient's conditions regarding the risk of developing PU including social and physical domains of the patient.	E2, E3 e E4
Waterlow Scale	Consists of 10 items: structure / weight and height; continence; skin type in areas at risk; mobility; sex and age; appetite; tissue malnutrition; neurological deficit; surgeries / traumas; medication. Each item has its own score, with values ranging from 0 to 5.	E1, E2, E3

SOURCE: Research Data, 2017.

Table 6. Care for the prevention of pressure injury

LPP PREVENTIVE CARE	CARE	STUDIES
Change of Decubitation	Perform if the conditions of the patient allow, as it is cause of pain and discomfort in the patient in the terminal.	E1, E2, E4, E5
Use of pyramidal cushions and pyramidal mattresses	Perform the change of decubitus always with the help of numerous cushions so that the patient does not feel discomfort at the moment of rotation.	E1, E2, E3,

Source: Research Data, 2017.

and Caribbean Literature in Health Sciences (LILACS), Scientific Electronic Library Online (SciELO). The search was developed using the descriptor of subject Pressure Injury, indexed to DECS (Descriptors of Health Sciences), which was performed in the advanced form of the databases, previously cited, using the conjunction and between the field descriptor and the language in those forms.

E4, in the present review, the steps that were taken: establishment of the guiding question; sampling in the literature; data collect; analysis of studies; (SOUZA *et al.*, 2014). E4, the articles were obtained from the electronic databases of the Spanish Bibliographical Index of Health Sciences (IBECS), Scientific Electronic Library Online (SciELO), Medical Literature Analysis and Retrieval System online (MEDLINE) and Latin American Literature and Caribbean in Health Sciences (LILACS). The following Health Sciences Descriptors (DECS) were used: "Pressure ulcer" and "Intensive Care Units. Primary articles were selected, available in full in Portuguese, English and Spanish, from 2005 to 2011; published studies whose methodology allows obtaining evidence of levels 2, 3, 4, 5, 6 and 7.

E5 Cross-sectional study, subanalysis of a major research project carried out in a large university hospital located in southern Brazil. The sample consisted of 188 adult patients hospitalized in clinical and surgical units of the hospital, all of them being in a period of six months, considering the inclusion criteria in the study and the accessibility to the records. The analysis of the included articles shows a greater incidence for the risk of development of pressure injuries in the male gender. Therefore, it is uncertain whether the gender influences the incidence of pressure injuries, requiring further studies to prove this prerogative. Also in E1, one of the risk factors is age, in the literature it is pointed out that the elderly constitute the group at greatest risk for developing pressure injuries, since their skin undergoes changes in the physiological process of aging, elasticity, texture, decreasing muscle mass and frequency of cell turnover, making the skin more fragile. (Mendonça *et al.*, 2018). The aforementioned authors showed that along with age, cardiovascular diseases, are associated: obesity, formation of adipose tissue that will decrease the vascularization of the skin surface and the decrease of mobility, due to overweight. The appearance of lesions may be associated with an increase in the risk of these patients with decreased mobility, which makes it difficult to perform daily

activities and, consequently, favors the appearance of these lesions. The evaluation of the risk for pressure injuries in the critically ill patient is the first step of the prevention program, as it will help nurses to identify the problem and establish priorities. In E2, this study made it possible to conclude that the Brazilian literature has produced a small number of studies focused on the discussion of teaching-learning in the treatment and prevention of LPP, with nursing students, which requires a differentiated attention, since it will be the future professionals in an increasingly demanding and competitive labor market. It is important that nursing students are involved in a teaching-learning process that encompasses various aspects of their training, as well as being encouraged to participate in research activities as authors and future nurses, in search of knowledge through appropriate means of information. E3, in contrast, three studies presented the male gender as the most prevalent in the incidence of LPP. This finding may be related to a sample bias, since more than 80% of the samples were male, a fact consistent with the characteristics of the research site, a tertiary hospital specialized in trauma that attends people mostly victims of accidents. such as male subjects. Regarding BMI, it was observed that the majority of the studied had above-average scores ranging from 22.6% 31 to 44.4% 18.25 evidencing risk for LPP. In this sense, a study³¹ showed that, despite the fact that emaciated people are the most prone to LPP, obese clients, due to mobility restrictions, have their movement in the restricted bed favoring the appearance of LPP ($p = 0, 245$). The same event occurs when the client is bedridden or limited to the chair.

E4, the incidence of LPP in ICU patients in the analyzed articles ranged from 3.3% to 62.5%. In a study carried out with 48 patients, 30 patients with 70 LPP were found in the ICU of a University Hospital, in the state of São Paulo, with a total incidence of 62.5% (FERNANDES, CALIRI, 2008). E5, critical patients usually present factors that predispose them to the development of LPP, being the predominance greater in ICU than in other hospital units. Regarding the appearance of LPP in ICU patients, it is important to consider the severity of their clinical state, but also the nursing workload, since there are direct implications for the quality of care provided to the patient, the quality of life of the professionals and the costs nursing staff. ICU admission raises the risk for LPP development compared to hospitalization in other sectors of the hospital, which is due to the greater number of risk factors a patient is exposed to at this unit. In this section, the topic of the articles selected for the study was categorized; LPP

prevention instruments are used to evaluate the patient's physical state in order to make decisions regarding their prevention or treatment of these ulcers. The scales highlighted and pointed out in the analyzed scientific articles are described in Table 5. E2 the prevention of LPP are used instruments to evaluate the physical state of the internees in ICU aiming at the decision making regarding its prevention and possible treatment. These scales include those used in the articles analyzed as described in E1, E2, E3, E4, E5, there are several criticisms regarding the Norton, Bradem and Waterlow risk scales, since some of them underestimate, while others overestimate the evaluation of the risk. One of the studies emphasizes that the low scores obtained on the Bradem scale are associated with significant changes in the level of consciousness. The association of the Bradem scale with the Glasgow Coma Scale helps the professionals in the change of decubitus and improves the prediction of the risk of LPP. Because of altered sensory perception, it was difficult for the subject under study to verbalize the discomforts of hospitalization, which provided the dependence of being cared for by third parties to maintain their hygiene as well as other procedures that act directly in the control and prevention of LPP. Knowing this reality, it is incumbent on nurses to effectively intervene in their care so that people can be cared for in an individualized and humanized manner, with the objective of at least reducing the incidence of the development of the UPP, based on the application of protocols aimed at reducing this risk. Changing decubitus is one of the main precautions in preventing LPP. The repositioning prevents, but often the intensity of the pain restricts this technique of prevention. Therefore, they can be adapted to the comfort care, that is, the practice of palliative care is to reduce the frequency of change of position as well as the exchange of dressing. Thus, postural changes no longer have a therapeutic goal, and in this stage the patient is left in the most comfortable position. The role of nursing is perceived as complex and difficult because of decisions that are left to the professional. In order for the dilemma to be resolved, the team should talk to the family and the patient, when he or she still has the autonomy to decide about their care and if they want to change their position in order to clarify and identify if it is being effective in the prevention of UP or if it is causing more discomfort and suffering. Only two articles analyzed discussed that the change of decubitus should be performed even in patients who are terminally ill. Prevention should be carried out by administering the felt pain and then performing the change of posture. The repositioning every two hours and that to be done you must use numerous auxiliary cushions personalizing the rotation according to the pain felt by the patient. The lateral decubitus should be avoided, as the susceptibility to lesions increases in this position.

Conclusion

Pressure injury is a potential problem in the hospital setting, in a very significant way in the ICUs, due to the long stay of hospitalized patients, and the degree of complexity that they are, because they are vulnerable to several factors that alter the integrity of the skin. However, measures can and should be adopted by the nursing team to prevent this problem; are: use of the Braden scale for risk assessment and should be applied individually; use of cushions in bony prominences; change of position; skin hydration; use of pyramidal mattress, among others.

In view of the complexity of the LPP, it is essential to develop and support the implementation of protocols, guides and safety manuals, as well as the implementation of surveillance and monitoring of incidents in health care, promoting a culture of patient safety with emphasis on learning and organizational improvement, engagement of health teams in the prevention of LPP incidents, with emphasis on safe systems.

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