



## Incidence of pressure injury in hospitalized patients: A literature review

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### ABSTRACT

The skin is fundamental to human life because it participates in many vital organic functions. One of the most common complications that affect the integumentary system of hospitalized patients is Pressure Injury. PPL is defined as an intact or ulcerated open lesion on the skin, soft tissues, or adjacent tissues that occurs predominantly under bony prominences. This adverse event causes pain and discomfort, in addition to increasing the length of hospital stay and consequently hospital costs. Therefore, the objective of this study is to analyze the incidence of PPL in patients hospitalized in the last 6 years, to describe the most affected anatomical region and the degree of injury that predominated. This is bibliographic research of a descriptive nature carried out in 2020 in the databases of the Scientific Electronic Library Online (SciELO) and Virtual Health Library (VHL). We used five articles from 2013 to 2019 that met the inclusion criteria and objectives of the study. It was found that the lack of adherence to PPL prevention protocols corroborated the maintenance of high rates of PPL, evidencing that prevention actions implemented in isolation may not have the expected result in reducing the number of cases. It is inferred the need for further studies on the incidence of PPL and the use of tools such as Continuing Education in raising awareness of the importance of implementing protocols to prevent PU in health institutions.

**Keywords:** Incidence, Pressure Ulcer, Nursing.

### 1 INTRODUCTION

The skin is fundamental to human life, as it forms a barrier between the internal organs of the individual and the external environment, in addition to participating in many vital organic functions, such as temperature regulation, for example (BRUNNER & SUDDARTH, 2014).

Some microorganisms such as bacteria and fungi are part of the resident and transient flora of the skin, but these agents only cause problems if they can penetrate it, however, this feat will only occur if there is a rupture in the skin barrier (BRUNNER & SUDDARTH, 2014).

One of the most common complications that affect the integumentary system of hospitalized patients, especially those who are bedridden and/or who are in the Intensive Care Unit, is pressure injury (BORGHARDT et al., 2016. p 461 apud MIYAZAKI et al., 2010. p 1203-11; SHAHIN et al., 2008. pp. 71-9).

Pressure Injury (PPL), previously referred to as pressure ulcer, is defined as an intact or ulcerated open lesion on the skin, soft or adjacent tissues, which occurs predominantly under bony prominences and may also be related to the use of medical artifacts (SOBEST, 2016). This change in nomenclature had the purpose of explaining, in a more integral way, this type of injury (INSTITUTO BRASILEIRO PARA EXCELÊNCIA EM SAÚDE, 2016).



In the risk groups to develop PPL are individuals with impaired physical mobility, those with impaired sensory perception, clients undergoing prolonged surgical procedures and patients using medical artifacts such as catheters, drains and orthotics (EBSERH, 2018). Extrinsic predisposing factors include moisture, pressure, shear and friction. Intrinsic factors are Body Mass Index (BMI) far above or far below normal, nutritional deficiencies, extremes of age, bladder or bowel incontinence, dehydration, and chronic comorbidities. (SOBEST, 2016; EBSEH, 2018).

The nurse is the protagonist in determining the client's risk of developing PPL, and the Braden Scale is the most used instrument in Brazilian hospital institutions (ARAÚJO et al., 2010; BORGHARDT et al., 2015). This professional also identifies these injuries when they are already present, classifies the stage in which they are and plans care, personalizing the interventions that will be implemented by the entire nursing team (BORGHARDT ET AL., 2015; MORTON AND FONTAINE, 2014).

Borghardt et al. (2015) brings that the Braden scale should be applied daily, due to the daily changes in the patient's clinical condition and, according to him, this is a useful mechanism in the risk assessment of PPL and provides many benefits, especially for patients admitted to ICU's. This scale is composed of 6 subscales that assess the degree of sensory perception, humidity, mobility, nutrition, friction/sliding forces and physical activity, and the maximum score can reach 23 points, and the score 16 or less characterizes risk of developing LPP (MORTON AND FONTAINE, 2014). In view of this, this scale is used as an instrument that facilitates the identification of the risk and the most common factors related to the disease. (BORGHARDT et al., 2015; CANDATEN et al., 2019).

When identified, PPL should be classified, and this classification is done by stages, being considered LPP stage 1: intact skin with erythema that does not whiten; PPL stage 2: partial loss of skin with exposure of the dermis; LPP stage 3: Loss of skin in its full thickness; LPP stage 4: Loss of skin in its full thickness and tissue loss (SOBEST, 2016). When the splinter or eschar impairs the identification of the wound extension, it is classified as non-classifiable PPL, unless it undergoes debridement and consequently new evaluation and classification (INSTITUTO BRASILEIRO PARA EXCELÊNCIA EM SAÚDE, 2016).

PPL causes pain, discomfort and high risk of infections, in addition to increasing the length of hospital stay, the demand for nursing care and hospital costs (DANTAS et al., 2014). This disease is considered one of the negative indicators of quality of health care and nursing, and its prevention is one of the goals of the global movement for patient safety (SIMÃO et al, 2013).

That said, the objective of this study is to analyze the incidence of Pressure Injury in patients hospitalized in the last six years, to describe the most affected anatomical region and the degree of injury that predominated in each study. The merit of this study is due to the fact that this condition is a preventable adverse event, but still commonplace, that affects hospitalized people worldwide, especially patients with impaired mobility.



Therefore, the following question arises: Considering that PPL is preventable and that its low occurrence is an indicator of quality of care, what factors most predispose it today?

This research is justified by the need for a study that identifies the level of adherence to the prevention of PPL as a way to help reduce morbidity and mortality in bedridden patients.

This study is a literature review, has a descriptive character, presenting analysis of the articles that talk about the incidence of pressure injury in bedridden patients.

The bibliographic survey took place in the period of March 2020 in the database of the Scientific Electronic Library Online (SciELO) and Virtual Health Library (VHL). The articles were selected using the following health descriptors in the research: Incidence. Pressure Ulcer. Nursing.

A total of 86 titles and abstracts were read, of which 5 articles were selected. The selected studies met the following inclusion criteria: full-text articles in online form, without accessibility restrictions, in Portuguese from 2013 to 2019, which address the theme: Incidence of Pressure Injury in hospitalized patients. The exclusion criteria were: theses, dissertations, articles written in another language published more than six years ago, which did not answer the objective of the research.

The data were selected by reading the titles and abstracts related to the theme of this research and those who met the inclusion criteria previously established were elected. Then, the articles on the subject were read in full. And finally, the analysis and synthesis of all the material was carried out considering the objectives proposed by this work.

## 2 DEVELOPMENT

After crossing the titles and references to avoid duplication of articles, 05 articles were selected, which were analyzed according to the profile of each study.

Considering the proposed period, we found studies that met the inclusion criteria in the following years: 2013, 2016 and 2017 with one article each and 2019 with two articles.

It was possible to identify between the years 2013 and 2019 that many articles were published regarding Pressure Injury, however, few studies specifically addressed the incidence of this disease in hospitalized patients. Moreover, all the articles found in the profile outlined for this study considered only patients from the Intensive Care Unit, not including bedridden patients present in the wards.

Next, Chart 1 describes the works, highlighting the authors, titles, year of publication and the objectives of each of these studies.



Table 1 Articles collected in the SCIELO and VHL databases on the incidence of pressure injury in hospitalized patients between 2013 and 2019. Ilhéus-Ba, 2020.

AUTHOR / YEAR	TITLE	GOALS
SILVA, et al., 2013.	Pressure ulcer in intensive care unit: analysis of incidence and installed lesions.	Analyze the incidence of pressure ulcers and describe their characteristics.
BORGHARDT, et al., 2016.	Pressure ulcer in critically ill patients: incidence and associated factors	To identify the incidence of PU and describe the factors associated with its development in adults admitted to the intensive care units of a university hospital in Vitória, Espírito Santo.
TEIXEIRA, et al., 2017.	Incidence of pressure injuries in an Intensive Care Unit in a hospital with accreditation.	To analyze the incidence profile of pressure injuries in an Adult ICU in 2014.
CANDATEN, et al., 2019.	Incidence of pressure injuries in patients admitted to Intensive Care Units	To investigate the incidence of pressure injuries, identify the sites, stages and coverages used in the treatment of pressure injuries and verify if there was the use of a care protocol for the treatment of injuries in patients hospitalized in the ICUs of a Hospital in Serra Gaúcha.
OTTO, et al., 2019	Risk factors for the development of pressure injury in critically ill patients.	To identify the relationship between risk factors for the development of PPL and to determine its incidence in critically ill patients admitted to an ICU.

Source: Prepared by the author himself.

The incidence expresses the number of new cases of a certain disease / aggravation during a defined period, in a population at risk of developing it (PEREIRA, 2007). Thus, the incidence measures the risk or probability of the event/disease occurring in the exposed population and therefore is one of the most used morbidity indicators for health studies (PEREIRA, 2007).

When analyzing the incidence of PPL in the five articles selected for this study, it was found that three of them had a high incidence of this disease, being them Silva et al. (2013) with 22.2%, Borghardt et al. (2016) with 22% and Otto et al. (2019) with 49.2%; and two had a low incidence, Teixeira, et al. (2017) with 10.47% and Candaten et al. (2019) with 6.19%.

Candaten et al. (2019) justified that the low incidence of PPL found in their study is due to underreporting, that is, it is linked to the misuse of one of the main tools used in health, which is the notification of diagnosed cases. The study by Pereira et al. (2016) corroborates this justification because it found that, although the hospital where the research was being conducted had a physical form for notification of an adverse event, many professionals did not know of its existence and that, although nursing technicians and auxiliaries understand that they can notify, they were not sure about allowing them to use this tool and in the same way regarding the application of the instrument.

According to Pereira et al. (2016), the notification of this adverse event cooperates with the structuring of the data, with the planning of prevention actions by the nursing team, facilitates the management of care and allows to evaluate the effectiveness of the care provided, in addition to helping in



the recognition of potential problems and in the adoption of intervention strategies, aspiring to the promotion of good care practices.

Teixeira et al. (2017) attributed the low incidence of PPL to the implementations established in the institution where the study was conducted, such as the guidance of a stomatherapist, and adherence to the quality program, and the improvement of the guidelines recommended by the National Patient Safety Plan, thus reflecting in the improvement of the quality of care provided and consequent decrease in the number of cases of this condition.

The studies by Silva et al. (2013), Borghardt et al. (2016) and Otto et al. (2019), demonstrated a profile of the incidence of LPP that already predominates nationally, and from this, it can be inferred that, despite efforts to use technology in favor of the prevention of PPL, the decrease in the number of cases has been a difficult reality to modify (DANTAS et al., 2014). This is a problem faced in several hospitals around the world, a fact that justifies its inclusion in international patient safety goals (BARBOSA et al., 2018).

As for the classification of PPL, stage 2 PPL predominated in the studies by Silva et al. (2013), Candaten et al. (2019) and Teixeira et al. (2017) with a predominance of more than half in each of them. The study by Otto et al. (2019) showed a higher prevalence of stages 1 and 2, and the research by Borghardt et al. (2016) was the only one that showed a higher incidence in sage 1. Silva et al. (2017) observed that there is a relationship between the cost and the stage of the injury, so the more severe the injury, the greater the expense with the treatment. To lessen the impact on treatment costs, the best choice is to implement prevention measures. The application of the daily Braden Scale, the use of a pneumatic mattress, the performance of decubitus position change every two hours, the decompression of bone prominences and skin hydration are some of the most effective strategies in the prevention and recovery of the patient affected or at risk of developing PPL (EBSERH, 2018).

Regarding the occurrence of lesions in the anatomical region, the highest incidence of PPL in all 5 studies was in the sacral region: Silva et al. (2013) with 27.3%; Borghardt et al. (2016) with 47%; Candaten et al. (2019) with 71.8%; Teixeira et al. (2017) with 46.4%; and Otto et al. (2019) with 30.9%. The restriction of the patient to the bed can contribute to the emergence of PPL in the sacral region, such as the concentration of the bedridden patient's weight in this region by angulation of the bed greater than 30° or shear (SILVA et al. (2017)

According to Silva et al (2013), Borghardt et al. (2016) and Candaten et al. (2019), there was a high incidence of death among patients who developed PPL. This high mortality rate may be related to the severity of the general health condition of these patients, and cannot be attributed only to the fact that they were affected by the onset of PPL.



The high incidence of PPL cannot be attributed to Nursing alone, since, although most preventive measures, case identification and treatment are done by these professionals, since its occurrence involves multicausal factors, requiring multiprofessional care, such as the implementation of actions of the physiotherapist, in the performance of mobilization and exercises, the physician, from the balance in sedation and the nutritionist in the issues of the necessary nutritional intake, among other actions pertinent to each of them (BARBOSA, 2018; EBSEH, 2018).

The lack of adherence to PPL prevention protocols was evidenced in the studies that presented the high rates of PPL, evidencing that prevention actions implemented in isolation may not have the expected result in reducing the number of cases. Permanent Education is a unique tool in the awareness of professionals regarding the importance of implementing these protocols in ensuring the reduction of harm to the patient linked to multiprofessional care.

### 3 CONCLUSION

In this investigation, few studies were found that evidenced the occurrence of PPL in hospitalized patients. Only one of them had a low incidence linked to the implementation of protocols established to combat this condition. The other studies showed that underreporting and prevention measures, without the implementation of specific protocols to guide multidisciplinary care, can hinder the planning of targeted care and consequently interfere in the reduction of high rates.

When evaluating the available scientific production related to the incidence of PPL, it is observed that it still constitutes a serious public health problem and therefore it is necessary to carry out more studies with this profile, especially in each region of Brazil, so that it is possible to identify a more reliable pattern to that experienced in hospitals, in order to be able to identify at the national level which factors are hindering the reduction of the incidence of this avoidable adverse event and thus assist in the planning of implementation of protocols in health institutions.

In addition, it is necessary to use tools such as Permanent Education and technology in favor of the health of the nation, to raise awareness of professionals regarding the importance of implementing protocols that guarantee patient safety in issues linked to the care provided, especially those with higher incidence such as Pressure Injury.



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