

# Evaluation of the profile and experience of nurses working in Intensive Care Unit (ICU) of a northern city of Espírito Santo-ES and their knowledge about pressure ulcer.

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**Abstract**— Pressure injuries in hospitalized patients have been a serious problem in nursing care management. Due to the high rates found and the emotional and financial costs that health professionals cause, they have been driven to seek elaboration of increasingly improved routines. Objectives: To evaluate nurses' technical / scientific knowledge regarding to the prevention and reduction of pressure injury within ICUs. Methodology: This is a simple descriptive exploratory study with a quali-quantitative approach, performed in two hospitals in the northern state of Espírito Santo in May and June of 2019 with 17 nurses from four ICUs through the assessment of knowledge of actions / interventions existing to prevent LPP in ICUs. An instrument containing 23 questions related to the interviewees' socio-demographic profile, knowledge and practice was used. The data analysis process was performed by simple descriptive statistics by calculation of absolute and relative frequency, being the qualitative research analysis consisting of: ordering, data classification and final analysis. Results: From 17 Of the respondents, 55.55% were in a predominant age group between 30 and 40 years old, 27.77% sometimes used the Braden scale and 16.66% did not use the Braden Scale. Most of them 61.11%, have Lato Sensu Graduate Studies in Public Health, none of them in stomatherapy. Of the respondents, 83.33% reported having difficulty identifying the six LPP categories, 16.66% reported not having received training on the subject and 22.22% reported the obtaining of information through books, magazines and articles on the internet. Conclusion: The study identified a deficiency in knowledge about the subject, since it pointed out that most participants reported weakness in technical and scientific knowledge on basic subjects about the LPPs. As a final product a quick consultation booklet was prepared, with the intention of contribute to the preventive care of LPPs within ICUs.

**Keywords**— Pressure Injury, Intensive care unit, Nursing Care, Intensive Care, Scales.

## I. INTRODUCTION

The increased rates of prevalence and incidence of skin lesion and its impact has been the subject of constant discussion, so that the search for safe practices and more effective has met national and international organizations for building tools that meet the new public policy rules in force, as in the XXI century is still common to find professionals adept at empirical practices and stuck to the use of skin lesion treatments already exceeded (Domansky, 2014).

Among the numerous skin lesions, higher concern in hospital settings remain the Injuries pressure (LPP); these injuries of multifactorial origin and chronic nature are associated with intrinsic and extrinsic factors, and have constituted a public health problem because of its high incidence, cost and recurrence rates (CAMPOS, 2010).

Inserted in this scenario there is the figure of nurses, professional responsible for making dressings, coordinate and mainly supervise the staff in the prevention and care to the injured, under Resolution 501/2015 of the Federal Council of Nursing (COFEN), which regulates the nursing team skills aimed at effective care and patient safety (COFEN, 2015).

Recent studies indicate that despite the progress achieved over the years, some flaws are identified in the execution of the care process. A survey conducted within an Intensive Care Unit (ICU) in a university hospital in southern Brazil, showed that when evaluating LPP prevention measures used by nurses noted that they recognized the major prevention practices and, achievement of change of position, hydration, cushions, among others; however, these often are stopped midway

due to some obstacles such as overhead activities, critical condition of patients and staff, high absenteeism, among others (STEN et al., 2012).

Another study conducted in a public teaching hospital of the Great Victory, Holy Spirit with 55 nurses, pointed out that the participants, 92.7% had regular knowledge or inadequate on the subject. Most, 67.3% reported not having obtained sufficient knowledge at graduation on wound care. Most nurses had lower level of the desired knowledge in relation to wound care (Faria et al., 2016).

In clinical practice of our region, empirically, there is, in the ICU of the state of North hospitals of the Holy Spirit, both public and private, the presence of patients with LPP. These patients originally developed the LPP in the ICU or have come with Injury evidence. This fact has caused deep concern, not only by the lack of size of the problem, but also because it encourages us to want to know what has been the look and the importance that nurses have given for that matter.

In this context, seeking to reflect on this theme and analyzing the literature, it was possible to know some aspects inherent to this problem and its relation to the nursing care of the patient. However, there is still ignorance: how nurses, primary care manager within the state of North ICUs of the Holy Spirit, have realized and led to prevention of LPP, and more than that, what this professional working tool is used to risk assessment in critically ill patients?

In order to answer these questions and using the knowledge gained to build a quick reference booklet education care to patients at risk for LPP, this study aims to contribute to the quality of management of nursing service in North ICUs the state of Espirito Santo.

In the new classification proposed by the National Pressure Ulcer Advisory Panel - (NPUAP, 2016), the pressure Injuries are classified by their tissue characteristics as follows:

- **Injury Pressure Stage 1:** Intact skin with erythema not whitens and may look different in skin dark. The presence of erythema or changes in sensitivity bleaches, temperature or consistency (hardness), can precede the visual changes. changes in color do not include discoloration purple or brown; these may indicate deep tissue damage.
- **Injury Pressure Stage 2:** Loss of skin partial thickness with dermal exposure. The wound bed is feasible, pink or red, moist color and can also present as an intact bubble (filled with serous exudate) or broken. The adipose tissue and deep

tissues are not visible. Granulation tissue, slough and eschar are not present. These injuries usually result from inappropriate microclimate and shearing of the skin in the pelvic region and the calcaneus. This stage should not be used to describe the skin lesions associated with moisture, including dermatitis associated with incontinence (DAI), the intertriginous dermatitis, skin lesions associated with medical adhesive or traumatic wounds (friction injuries, burns, abrasions ).

- **Injury Pressure Stage 3:** Loss of the skin in its total thickness in which the fat is visible, and often epíbole and granulation tissue (lesion with curled edges) are present. Slough and / or eschar may be visible. The depth of tissue damage varies according to the anatomical location; areas with significant fat deep lesions may develop. Detachment may occur and tunnels. There fascia exposure, muscle, tendon, ligament, cartilage and / or bone. When the slough or eschar preclude the identification of the extent of tissue loss, you should classify it as Injury Pressure Not Sortable.
- **Injury pressure Stage 4:** Loss of skin in its total thickness and tissue loss with exposed or direct palpation of the fascia, muscle, tendon, ligament, cartilage or bone. Slough and / or eschar may be visible. Epíbole (lesion with curled edges), detachment and / or tunnels often occur. The depth varies with the anatomic location. When the slough or eschar preclude the identification of the extent of tissue loss, you should classify it as Injury Pressure Not Sortable.
- **Injury Pressure Not Sortable:** Loss of skin tissue and its total thickness loss in the extent of damage which can not be confirmed because it is hidden by the slough or eschar. When removed (slough or eschar) Injury pressure in stage 3 or stage 4 will be apparent. Eschar stable (i.e., dry, adherent, no erythema or fluctuation) in the calcaneus or ischemic limb should not be removed.
- **Deep Tissue Injury Pressure:** Intact skin or not, with localized and persistent area of dark red discoloration, brown or purple not whitens or epidermal separation showing lesion with darkened bed or bubble with bloody exudate. Pain and change in temperature often precede skin color changes. The discoloration may appear different in people with darker skin tone. This injury results in severe pressure and / or shear prolonged and the bone-interfacemuscle. The wound may evolve rapidly and reveal the actual extent of tissue

damage or solve without tissue loss. when tissuenecrotic, subcutaneous tissue, granulation tissue, fascia, muscle or other underlying structures are visible, this indicates the total pressure damage with tissue loss.

Also according to the new classification proposed by NPUAP (2016), the following additional definitions have been added:

- **Injury Pressure Related to Medical Device:** The Injury Pressure Related to Medical Device results from the use of devices designed and applied for diagnostic and therapeutic purposes. The resulting pressure sores usually exhibits the pattern or shape of the device. This injury should be categorized using the pressure injuries classification system.
- **Injury Pressure on Mucous Membrane:** The pressure sores on mucous membranes is found when there is a history of use of medical devices at the site of damage. Because of the anatomy of the tissue, these lesions can not be categorized (NPUAP, 2016).

The Arabic numerals are now employed in the nomenclature instead of the Romans, and the suspect was abolished term of diagnostic categories (NPUAP, 2016).

It is up to health professionals, especially nurses, to appropriate these terminologies in their daily lives in order to demonstrate the applicability and limitations that such changes lead (MORAES et al., 2012).

These measures become important tools in prevention through knowledge and strategies to ensure the reduction of exposure to risk factors and increased protection of the individual. Therefore, it is suggested as the first step in prevention, identification of patients at risk or more specifically, the factors that make the individual more vulnerable to the development of LPP (SERPA et al., 2011).

## II. METHODOLOGY

This study was conducted in 04 ICUs of four two hospitals in São Mateus located in the north of the state of Espírito Santo. The selected hospitals have been named as The Hospital (Public) and Hospital B (Private), to maintain the anonymity of institutions. These hospitals were chosen for developing a comprehensive care for people with chronic wounds (elderly and adults), regardless of the etiology, one of the hospitals with a capacity of 242 beds geared totally to the customer care of the Unified Health System (SUS) and the other private service that provides the SESA (State Secretary of Health). Both have two ICUs

with capacity of 10 beds each, totaling 20 beds in each hospital. While The Hospital has 20 beds General ICU,

The Public Hospital Nursing teams, (Hospital A) are composed of technicians and nurses who take turns on a scale of 12 / 36h, one nurse for every day and night shift, five nursing technicians. The medical team is formed by a diarist doctor, on duty and a coordinator.

Already the Private Hospital (hospital B) has a capacity of 105 beds, 80 operating. The hospital has 02 nurses day laborers 6pm in each ICU, alternating between morning and afternoon, and night 03 physicians who take turns on scales 12 / 60h totaling 05 nurses cadaUTI. Both day laborers as the physicians take turns at 12h scale on the weekends daytime shifts and holidays. The team of nursing technicians consists of 05 technicians in each shift alternating in 12 / 36h day and night duty rosters. The medical team, as in the former Hospital is composed of a day laborer doctor, an on duty doctor and an engineer.

## III. RESULTS AND DISCUSSION

Survey participants nurses working in institutions that received their names The Hospital (Public) and Hospital B (Private); The Hospital provides service to the Unified Health System through the openings via SESA regulation system (State Health Secretariat); both are located in the northern state of Espírito Santo in the city of St. Matthew. The participants were 17 nurses who belong to 03 types of work shifts and operating in 04 ICUs, being a cardiology ICU and 03 general ICUs with 10 beds each. One participant nurses operates in two institutions in different shifts. Of non-participating nurses from 01 search was on maternity leave and another had requested shutdown of the institution during the period prior to the survey. No guest nurse refused to participate, everyone was very collaborative and responsive actively responding to all issues related to their daily practice, after signing the term of free clarification and receive explanation of the purpose of the research, which contributed greatly to the preparation of this study. Participants received identification ENF 1, 2 NFS, NFS 17, as described in the data analysis. They had preserved their secrecy, so did not cause any embarrassment in the responses. as described in the data analysis. They had preserved their secrecy, so did not cause any embarrassment in the responses. as described in the data analysis. They had preserved their secrecy, so did not cause any embarrassment in the responses.

It was observed during the interviews a concern in parts of most nurses manage the care of patients admitted in the intensive care unit with impaired physical mobility and increased risk to develop LPP. They showed in their

speech always be following the work of the technical directing and supervising the activities within the intensive care unit.

As for the operating time (Table 1), was found in hospital A that 5 of the nine respondents were between 5-10 years of training, which corresponds to 55.55% of all nurses in the institution and none of the nurses under 1 year training while in the hospital B 4 of 9 respondents,

44.44% have more than 10 years of professional experience, being 11.11% of nurses with operating time between 1-4 years and 11.11% with time less of acting than one year.

Therefore the average of two hospitals A and B of total respondents, 8 (44.44%) have operating time between 5 to 10 years and 6 (33.33%) over 10 years in nursing practice.

*Table 1 -Time of professional experience in nursing.*

	The hospital	hospital B	Hospital A / B
<1 year	22.22%	11.11%	16.66%
1 to 4 years	55.55%	33.33%	44.44%
5 to 10 years	22.22%	44.44%	33.33%
Above 10 years	0%	11.11%	5.55%

Source: Personal researcher Archive

As the predominant age group (Table 2) in the hospital was between 30 to 40 years old accounted 66.66%, representing 6 of the 9 respondents in this institution, and only 11.11% aged 25 to 30 years. Already in hospital B, 44.44% of respondents were between 30 to

40 years and 9 corresponds to the 4 surveyed, with an average of either 10, with a total of 10 nurses representing 55.55% between 30 and 40, 22, 22% between 25 and 30 years and 22.22% above 40 years.

*Table 2 - Age range of research participants.*

	The hospital	hospital B	Hospital A / B
25 to 30 years	11.11%	33.33%	22.22%
30 to 40 years	66.66%	44.44%	55.55%
Acimade 40 years	22.22%	22.22%	22.22%

Source: Personal researcher Archive

*Table 3 - The specialization of research participants.*

	The hospital	hospital B	Hospital A / B
UTI expertise	33.33%	33.33%	33.33%
another area	66.66%	55.55%	61.11%
stomatherapy	0%	0%	0%
Contains No Expertise	0%	11.11%	5.55%

Source: Personal Archive researcher.

As noted in Table 3, none of the respondents have expertise in Stomatherapy or any expertise in wounds most respondents hospital A have graduate Lato Senso in another area of Public Health, Management, Emergency

Department among others, adding 66.66 corresponding 6% of 9 nine respondents; therefore 33.33% reported having a postgraduate degree in the ICU. In what concerns the Hospital B, 5 (55.55%) of the nine respondents have

expertise in another area with only one of the nurses had no expertise and no one specializing in Stomatherapy. It is important to note that knowledge of appropriate actions to

be developed and commit them properly, as well as continuing education for common ideals, (Stein et al., 2012).

Table 4 - Operating time in the ICU of respondents

	The hospital	hospital B	Hospital A / B
<1 year	11.11%	33.33%	22.22%
1 to 4 years	55.55%	11.11%	33.33%
5 to 10 years	33.33%	44.44%	38.88%
Mais de 10 years	0%	11.11%	5.55%

Source: Personal Archive researcher.

As for the performance of ICU stay, 5 (55.55%) of respondents Hospital A, they were between 1-4 years of operation, and only 1 under 1 year, corresponds to 11.11% and none of the respondents over 10 years of experience in the Intensive Care Unit. Regarding interviewed the hospital B, 4 (44, 44%) of respondents with operating time between 5 to 10 years and older than 10 years. And the average of both the operating time hospitals A and B, 6 (33.33%) of respondents with time of work in ICU 1-4 years and 7 (38.88%) with time of work in Unit Intensive care between 5 to 10 years.

#### IV. CONCLUSION

The results of this study showed that nurses demonstrate knowledge of the preventive measures necessary for the LPP inside the intensive care units, such as changing positions, avaliação diária da pele, pneumatic mattress use, cushions, use of body moisturizers, barrier creams and support nutritional were cited.

However, the study pointed out that although nurses recognize the importance of these strategies, some obstacles such as work overload, critical condition of the patient, incomplete team, lack de conhecimento and treinamentos atualizados on the subject, prevent actions are implemented in risk research context.

It is necessary that these aspects are reviewed in practice as soon as possible in order to be the subject LPP a big public health problem, treatment difficult and very costly for the institutions. Further discussions should be made by managers and managers on care, in order to obtain better working conditions and practices that result in better and safer within the ICU of the northern state of Espírito Santo.

Also important to highlight the need for update nurses continues on the subject, either through participation in events / courses to guarantee the creation of new devices, new discussions and capacitação collective action and thereby improve the quality of

service and thus contribute to decreased incidence of LPP in the intensive care units.

Thus, the improvement of knowledge and strategies of nurses in the prevention, care and treatment of LPP in the ICU; the ongoing discussions can provide actions and more effective and safe conduct. The realization of continuing education within hospitals is of paramount importance, makes the trader is in constant learning, in a continuous recycling process.

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