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VALIDATION OF PRESSURE INJURY TREATMENT PROTOCOL IN THE INTENSIVE THERAPY UNIT

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ABSTRACT

Introduction: The appearance of skin lesions is one of the most common occurrences resulting from the long hospital stay. **Objective:** Elaboration and validation of a care protocol directed to the treatment of pressure injuries in an Adult Intensive Care Unit. **Methods:** This was a quantitative and qualitative study conducted from February to October 2018. A protocol for the treatment of injuries was constructed and submitted to the evaluation of ten expert judges, whose argument scores were calculated using the Validation Index. Content (IVC). **Results and Speeches:** Mostly female population, graduated in nursing, with specialization in the area, working for over 16 years and at least one published study. The protocol was evaluated through fifteen items, arranged in three sections. The results obtained by calculating the CVI were valid for the judges, with CVI of 1 and agreement of 100%, 100% and 97.5% regarding the objectives, structure and presentation and relevance of the protocol, respectively. **Final Considerations:** Considering that no domain was invalidated (CVI less than 0.78) and agreement percentages greater than 80% were reached in the three sections and an overall CVI of 1, the protocol was considered validated.

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INTRODUCTION

The appearance of skin lesions is one of the most common occurrences resulting from the long hospital stay and its incidence increases proportionally to the association of risk factors. Currently, the skin lesions that most affect hospitalized patients in intensive care units are pressure lesions (LP) (BRAZIL, 2013a; (LEITE *et al*., 2011). This injury is defined by the National Pressure Ulcer Advisory Panel (NPUAP) and the European Pressure Ulcer Advisory Panel (EPUAP) (2016) as "localized damage to the skin and / or underlying soft tissue, usually over a bony prominence or related to the use of a medical device or other artifact". In the international scenario, prevalence has ranged from 5% to 15% and incidence from 1.9% to 7%.

Other international studies have shown that the incidence of LP in intensive care is 14.3% to 18.7% (GARCEZ *et al*., 2016; METHA *et al*., 2015). A study conducted in a teaching hospital in Brasilia identified a prevalence of LP of 57.89% of patients admitted to the adult ICU of the institution (MATOS; DUARTE; MINETTO, 2010). Thus, patient safety arouses interest and mobilization for the adoption of methods for risk analysis and prevention of adverse events such as LP, aiming at guaranteeing quality of care and avoiding health problems. Although they are aggravated with multifactorial causes, most of the LP are preventable and, therefore, efforts should be made by the multidisciplinary team in their prevention and treatment (SILVA; TEIXEIRA; CASSIANI, 2009). Therefore, the objective of the current article was the elaboration and validation of a care protocol for the treatment of pressure

injuries in the Adult Intensive Care Unit of the Santa Casa de Misericórdia do Pará Foundation.

MATERIALS AND METHODOLOGY

The study complied with the formal requirements contained in the national and international regulatory standards for research involving human subjects, and was approved by the Research Ethics Committee (CEP) of the Santa Casa de Misericórdia Pará Foundation (FSCMPA), under opinion No. 2,695,305. All participants signed the Informed Consent Form (ICF). Being developed at the Adult Intensive Care Unit (ICU) of the Santa Casa de Misericórdia do Pará Foundation (FSCMP), a public referral hospital in the northern region, located in the center of the municipality of Belém do Pará. Methodological validation study of instrument. The methodological trajectory followed two stages: elaboration of the instrument and validation of the protocol content according to the Delphi technique. The main bibliographic source used was the 2016 NPUAP Consensus, an international organization dedicated to the prevention and treatment of pressure injuries, composed by specialists in the subject, and searches of the literature were conducted through the scientific databases: LILACS; SCIELO; PUBMED, from January to July 2018, in studies of the last ten years to base the variables of the data collection instrument. To validate the instrument content, the evaluators / judges were selected through snowball sampling, which consists of identifying a subject that meets the eligibility criteria necessary to participate in the study, which is requested and at the same time suggests other participants. From the appointment of a particular expert, a consultation was performed on the Lattes Platform to evaluate their curriculum and verify their suitability for the selection criteria established according to Fehring's expert scoring system (1987). For each criterion, a certain score was assigned, totaling 10 (ten) points. Only the specialists who obtained a minimum score of 5 (five) points were part of the evaluation committee (POLIT; BECK, 2011). The instrument used was an adaptation of Moraes (2013), elaborated from the Likert scale, which involves the assessment of the evaluator's degree of conformity to the instrument through the scores: inadequate, partially adequate, adequate and totally adequate, with a score of 1, 2, 3 and 4, respectively. For the protocol validation act the Content Validity Index (CVI) was used, whose value should be equal to or higher than 0.78. According to Polit and Beck (2011) this method, which employs the use of the Likert scale, measures the agreement between the expert opinions.

RESULTS

The judge population was predominantly female (90%), with a degree in nursing (70%) and active for at least 16 years (40%). Half have been in intensive care units (50%) for at least 15 years (30%) and have a specialization degree in the area (80%), with at least one published study (70%).

Table 1. Judges' Evaluation of Protocol Objectives

DOMAINS	SCORE				IVC
	Inadequate	Adequate Suitable	Adequate	Totally suitable	
1.1 Are related to the demands of nurses in the treatment of pressure injuries	-	-	1	9	1
1.2 Are related to aspects involving intensive care nursing care	-	-	2	8	1
1.3 May circulate in the scientific field of intensive care, stomatherapy and dermatology	-	-	1	9	1
1.4 Addresses the objectives of institutions whose ICUs assist patients with pressure injuries	-	-	2	8	1
TOTAL ANSWERS / (%)	-	-	6 (15%)	34 (85%)	Agreement 100%

Source: Research Data, 2018.

Table 2. Judges' assessment of protocol structure and presentation

DOMAINS	SCORE				IVC
	Inadequate	Adequate Suitable	Adequate	Totally suitable	
1.1 The protocol serves to support nurses' practice in treating pressure injuries	-	-	1	9	1
1.2 Information is presented clearly and concisely	-	-	3	7	1
1.3 The information provided is scientifically proven	-	-	1	9	1
1.4 There is logical chaining in content presentation	-	-	1	9	1
1.5 Title and Item Size Appropriate	-	-	2	8	1
1.6 Number of Pages Appropriate	-	-	1	9	1
1.7 Pictures are clear and appropriate	-	-	2	8	1
TOTAL ANSWERS / (%)	-	-	11(15,8%)	59 (84,2%)	Agreement 100%

Source: Research Data, 2018.

Table 3. Judges' assessment of the relevance of the protocol

DOMAINS	SCORE				IVC
	Inadequate	Adequate Suitable	Adequate	Totally suitable	
1.1 The content addresses fundamental aspects of the theme	-	-	-	10	1
1.2 The protocol enables nurses to improve their knowledge and practices in the treatment of pressure injuries.	-	-	1	9	1
1.3 The protocol covers the necessary contents to support the nurse's assistance in the treatment of pressure injuries.	-	-	1	9	1
1.4The protocol is suitable for deployment and use in the service.	-	1	-	9	0.9
TOTAL ANSWERS / (%)	-	1 (2,5%)	2 (5%)	37 (92,5%)	Agreement 97,5

Source: Research Data, 2018.

Table 4. Pressure Injury Treatment Protocol. Belem, Para, Brazil, 2018

LP ASPECT / RANKING	FABRIC FEATURES	ACTIVITY/ GOAL	ROOF	ACTION/ INDICATION	HOW TO USE / EXCHANGE
Stage 1- Unbleachable erythema	Whole skin with nonbleaching flush in localized area over bony prominence. It can be painful, hard, soft, hot or cold. In black skin patients do not evaluate by blushing pressure redness.	Protection Moisturizing intact skin	Semi-permeable silicone edge absorbent foam Or Hydrocolloid plaque (2nd option)	Reduces local pressure and favors daily assessment. It acts as a barrier to external contaminants, is permeable to O2 and H2O vapor, favors healing and allows visualization of LP. Acts as a barrier to external contaminants, reduces local pressure. However, its removal can cause damage to fragile skin.	Apply with a margin of 2 to 3 cm beyond the edge of the lesion. Change every 7 days. In case of foam with no adherent silicone edge, use transparent polyurethane film as the second cover. Change every 7 days. Maintain preventive measures for high-risk patients, according to the institution's LP prevention protocol.
Stage 2- Partial loss of skin thickness	Shallow, shiny or dry superficial wound with a red-pink bed without devitalized tissue or bruise. It can be opened or closed (phlichthema) with serous fluid.	Protection Moisturizing intact skin Epithelization	Semi-permeable silicone film-coated absorbent foam Or Hydrocolloid plaque (2nd option)	Easy visualization of the lesion and protection of the perilesion area through the silicone film. Hydrocolloid promotes moist environment that favors tissue growth; absorbs exudate; forms protective barrier against bacteria; relieves local pain and pressure	Use on LP with little oozing, flat, open and uninfected; Apply after cleansing with dry perilesional skin covering 2 cm beyond the margins of the LP. It can stay up to 7 days, changing in case of saturation and leakage. If a second coating is required, use clear polyurethane film as in patients with diarrhea or silicone borderless foams, use clear polyurethane film.
Stage 3- Total loss of skin thickness	Visible adipose tissue without exposure of bones, tendons and muscles. There may be some devitalized tissue, cavitations and fistulas.	Full Skin Moisturizing Protection Maintenance of optimum epithelialization medium Debridement of nonviable tissues Exudate Management	Hydrogel or Hydrofiber with vertical absorption Ag or Foam with Ag	The hydrogel promotes autolytic debridement, favors granulation and epithelialization in dry, splintered and healing wounds. In exudative wounds hydrofiber and foam absorb the exudate from the wound bed promoting autolytic debridement and bacteriostatic action by the action of silver on this exudate.	Apply straight to LP after cleaning, with a 2nd coat that maintains moisture. Protect the edges to prevent maceration. Change when saturated and can stay up to 7 days. Apply over the lesion leaving 1 cm of edge out of the wound. In case of cavity wounds leave 2.5 cm out to facilitate removal. Use secondary coverage. In the foam does not need secondary coverage. If secondary coverage is required use clear polyurethane film.
Stage 4- Total loss of tissue thickness	Exposure of bones, tendons and muscles. There may be devitalized (damp) or necrosis (dry) tissue, cavitations and fistulas.	Hydration of intact skin and structures such as bones, tendons Exudate Management Biofilm Control and Treatment	Hydrogel or Foam with Ag or Hydrofiber with Ag PHMB gel Debridement Surgical or surgical conservative	It promotes autolytic debridement, keeps the environment moist, preserving viable tissues and hydrating structures such as bones and tendons. Used in exudative and cavitary wounds, it favors healing through autolytic debridement, managing wound bed moisture and having the bacteriostatic action of ionic silver. It is indicated for its action on chronic and infected lesions, having fibrinolytic action acting favoring the destruction of the biofilm. Partial or total removal of unviable tissues.	Apply to the LP bed after cleaning with physiological solution at 37ºC through 40x12 needle irrigation. Use a secondary cover. Change every 24 hours. Fill the wound bed and cavities after cleaning with 0.9% saline solution at a temperature of 37ºC through 40x12 needle irrigation, leaving 1 cm from the LP edge outward. Use secondary coverage. Change whenever saturated or within 7 days. Perform microbial control by culturing a small tissue sample from the wound bed whenever there are signs of infection and delayed healing. Apply a thin layer over the wound bed after cleaning with physiological solution. Cover with cover of choice (Hydrogel, Foam or Hydrofiber) If a second covering is required, use transparent polyurethane film.

……..Continue

Nonstable Pressure Injury	Loss of skin at its full thickness and tissue loss in which the extent of damage cannot be confirmed because it is shrouded by the splinter or eschar.	Remove devitalized tissues. Moisturize wound bed	Conservative instrumental debridement, initially using the Square or Cover technique. Hydrogel Collagenase	Partial removal of unviable tissue or by splitting devitalized tissue favoring autolytic debridement and / or subsequent removal through instrumental debridement. Perform enzymatic debridement	After performing the Square or Cover technique, clean with a 0.9% warm saline solution and apply a thin layer of hydrogel avoiding the edges so as not to macerate them. Apply secondary coverage and change every 24 hours. Perform throaa every 24 hours. Use in case of hydrogel unavailability.
Deep Tissue Pressure Injury	Skin intact or not, with localized and persistent area of dark red, brown or purple discoloration that does not whiten or epidermal separation showing lesion with darkened bed or blister with bloody exudate.	Remove local pressure and allow area of ischemia to be delimited Maintain hydrated perilesion área	Polyurethane sponge with silicone edges. Barrier cream	Remove the pressure so that the ischemia area delimitation occurs. Maintain healthy perilesion area.	Change coverage every seven days, but you should view the lesion every 2 days to record its evolution. In case of sponge without silicone edges, use transparent polyurethane film for fixing. Apply to the perilesional area and remove excess with the gauze in order to promote proper fixation of the cover (sponge).

Studies highlight that the predominance of women reinforces a peculiar characteristic of nursing. This is because the issue of gender is something imperative since the emergence of the profession, since care was exercised essentially by women (SANTOS, 2015). Regarding the title, most judges are specialists in intensive care, a minority with a master's degree, which reveals the need for health institutions to require professionals to be included in postgraduate programs, a fact that is seen as quality assurance and professional improvement and, consequently, assistance. The professional practice time shows that the care provided in intensive care units is performed by professionals with vast experience in the area (SANTOS, 2015). The ten judges who participated in the validation of the protocol were named with an alphanumeric code composed of the initial "J" followed by a sequential number referring to the order of their participation. Their respective assessments were addressed in three sections, which correspond to the objectives (Chart I), structure (Chart II) and presentation and relevance of the presented protocol (Chart III).

DISCUSSION

Regarding the judges' evaluation, as previously pointed out, they were organized into three sections. Section 1 referred to the purposes, goals or purposes intended to be achieved with the implementation of the protocol. Table I presents the evaluations of the objectives domains. The rows show the domains and columns the distribution of scores, where the numbers represent the number of votes and correspond to the total of judges. The last line shows the total answers and the percentage of agreement between the judges. This section had 4 domains and all were evaluated positively by the judges, totaling 40 responses, reaching a CVI of 1 and obtaining a 100% agreement percentage. Thus, regarding the objectives, all items were considered validated, since they presented CVI higher than 0.78, as recommended by Polit and Beck (2011). Most of the judges classified the items as totally adequate.

Regarding the comments of the judges' suggestions regarding the objectives of the protocol, the following was obtained:

> *"Considering that some pressure injuries need procedures to finish the healing with skin grafts, I suggest inserting in the protocol the nursing care and dressings of the donor and grafted area." (J3)*

J3's recommendation was not accepted, since both within the evaluation plan and in the assistance plan there are recommendations regarding the need for an opinion of plastic surgery for a possible skin graft surgical procedure. The nursing care competes to favor the granulation and epithelialization of the wound, which when able to undergo the graft, is evaluated and treated by the doctor.

Also noteworthy is the comment by J4, which is linked to the ICU and yearns positively for the implementation of the protocol, as can be observed:

> *"I consider that the implementation of the protocol will be very relevant to uniformly guide care actions regarding pressure injuries in the intensive care unit." (J4)*

J4's comment reflects the need for standardization of nurses' conduct regarding the management of pressure injuries in the ICU, a situation most commonly reported by research participants. Thus, it is understood that the protocol, once implemented, may contribute in this context. In this regard, Áfio *et al*. (2014) emphasize that validation is essential because it guarantees a complete and reliable material, potentially usable in the service, contributing to standardize care and facilitate the exchange and absorption of information by professionals in their care practice. After the analysis and evaluation of the objectives, proceeded with the evaluation of the structure and presentation of the protocol. Thus, section 2 addressed the way guidelines were presented, such as general organization and formatting. Table II presents the domain and structure evaluations. The rows show the domains and columns the distribution of scores, where the numbers represent the number of votes and correspond to the total of judges. The last line shows the total answers and the percentage of agreement between the judges. This section had 7 domains and all judges favored their suitability potential, totaling 70 responses, reaching a CVI of 1 and obtaining a 100% agreement percentage.

Thus, the protocol was also considered validated in relation to the structure and presentation in all items, since it reached a CVI higher than recommended by the literature (0.78). In this section, all domains were also evaluated as fully adequate by most judges. Some judges added some suggestions regarding the structure and presentation of the protocol, to highlight:

"The care plan needs to be more didactic." (J8)

Regarding the recommendation of J8 for a better organization of the care plan, it was considered that it was necessary to condensate the information contained in the table, which was visually polluted, thus requiring a more concise textual approach, with a view to ease of understanding of the user. and direct their conduct. In this regard, Echer (2005) points out that when it comes to educational materials, the reader must identify the importance of content from the comprehension of its reading. Therefore, materials must meet the specific needs for which they are intended, through accessible, scientifically supported language, which should be offered in a complete but objective manner.

Finally, section 3 addressed the relevance, ie the degree of significance of the proposed material. Table III presents the evaluations of the domains related to this item. The rows show the domains and columns the distribution of scores, where the numbers represent the number of votes and correspond to the total of judges. The last line shows the total answers and the percentage of agreement between the judges. This section had 4 domains and the majority of judges favored their adequacy potential in fully adequate, totaling 40 responses, reaching a CVI of 1 and obtaining a 97.5% agreement percentage. Thus, in the relevance aspect, the protocol was also considered validated in all its domains, as it presented CVI higher than the minimum recommended by the literature (0,78). Attention is drawn to item 1.1, which was considered to be totally appropriate unanimously by the judges. Domain 1.4, referring to the possibility of protocol implementation and use in the service, was the only one to be evaluated as partially adequate, a fact that is justified by the judges:

"The treatment plan is not didactic. Review the board so that it is more practical for daily use by the team. "(J8)
"The protocol only needs point adjustments." (J1)
"The protocol needs to be more didactic, but the content is in line with current literature." (J7)

Considering all the recommendations pertinent, the protocol was adjusted according to the observed need, thinking mainly about the practicality of its use. Thus, a textual and structural revision of the document was performed to contemplate such purposes. In this context, Keszei, Novak and Streiner (2010) emphasize that after being structured and organized, the new instrument needs to be tested as to the hypothesis that the content addressed represents and / or adequately contemplates the product domains. Therefore, the choice procedure is the content evaluation and validation, a fundamental procedure in the development of instruments, using observable and measurable measures, concepts and indicators (STREINER; NOMAN, 2008). Regarding the content regarding the treatment of pressure injuries, some judges suggested some additions, as can be seen in the comments that follow:

"There are other types of treatment. I suggest including standardized coverage and make it clear that the protocol is based on the coverage available at the institution. "(J8)
"Add the barrier cream and organize the contents of the treatment tables." (J2)

These reports were considered coherent, since in the treatment plan there was no barrier cream as an option for the treatment of lesions. However, regarding the use of standardized products by the institution, this fact has been clarified since the writing of the dissertation, in the chapter of the theoretical framework dealing with dressings and coverings. Add to this that one of the primary goals of the protocol is to standardize the conduct of nurses from the resources available in the institution. The judges also highlight the relevance of the implementation of the protocol and the benefits of this process. Such importance is evidenced in the following speeches:

"The protocol will be of great contribution to standardize the conduct regarding the prevention and treatment of injuries." (J3)
"I consider that with the implementation of the protocol, all nurses will be aware of the standardized coverage in the institution, as well as its proper use." (J4)
"The implementation of the protocol is of great importance to the institution, for the proper use of material resources and actions to treat injuries." (J5)

In this regard, it is noteworthy that in health, protocols are essential tools for the management of care quality, standing out as an important means of process organization. These instruments provide a complete view of the care process and assist professionals in the execution of care, in addition to providing patient safety and professional decision-making. Hence the need for this instrument to be validated by professionals in the area of subject knowledge (POTT *et al*., 2013; LARA *et al*., 2011).

Final Considerations

During the validation process, the judges evaluated fifteen questions, arranged in three sections. The results obtained by calculating CVI were valid for judges, with CVI of 1 and agreement of 100, 100 and 97.5% regarding the objectives, structure and presentation and relevance of the protocol, respectively. Thus, considering that no domain was invalidated (CVI less than 0.78) and agreement percentages greater than 80% were reached in the three sections and an overall CVI of 1, the protocol was considered validated. The proposed adjustments were made, respecting the suggestions of the judges and thus promoting the improvement of the quality and reliability of the protocol. The suggestions were accepted according to their relevance, aiming to provide a better understanding and clarity of the protocol content and making it fit for its central purpose. From this, it is understood that this product is valid and potentially usable in the service.

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