



Pressure injury in hospitalized older adults: elaboration and validity of a nursing protocol^a

Lesão por pressão em pessoas idosas hospitalizadas: elaboração e validação de um protocolo de enfermagem

Lesiones por presión en ancianos hospitalizados: elaboración y validación de un protocolo de enfermería

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ABSTRACT

Objective: To develop a nursing protocol for the assessment and treatment of pressure injuries in hospitalized older adults, with subsequent content validity. **Method:** A descriptive, quantitative study was conducted between March 2024 and August 2025 in three stages: theoretical phase (scoping review and protocol development); empirical phase (content validity by expert judges); and analytical phase (analysis of suggestions and adaptation of the protocol). Eleven experts participated. The Content Validity Index and the Modified Kappa Coefficient were applied, with values above 0.8 considered satisfactory. **Results:** Experts assessed the objectives, structure, presentation, and relevance of the protocol, obtaining a global Content Validity Index of 0.88 and excellent agreement. The protocol includes, through texts, diagrams, and figures, guidelines for the assessment and treatment of pressure injuries in older adults, including measurement, recording of injuries, and guidelines for hospital discharge. **Final considerations and implications for practice:** The protocol proved to be valid and appropriate for clinical practice, and may promote safer, more individualized, and evidence-based nursing interventions in the care of hospitalized older adults.

Keywords: Nursing Care; Nursing; Aged; Pressure Ulcer; Educational Technology.

RESUMO

Objetivo: Desenvolver um protocolo de enfermagem para a avaliação e o tratamento de lesão por pressão em pessoas idosas hospitalizadas, com posterior validação de seu conteúdo. **Método:** Pesquisa descritiva e quantitativa, desenvolvida entre março de 2024 e agosto de 2025 em três etapas: polo teórico (revisão de escopo e elaboração do protocolo); polo empírico (validação do conteúdo por juízes); e polo analítico (análise das sugestões e adaptação do protocolo). Participaram 11 especialistas. Aplicaram-se o Índice de Validade de Conteúdo e o Coeficiente de Kappa Modificado, considerando-se satisfatórios valores superiores a 0,8. **Resultados:** Os especialistas avaliaram os objetivos, a estrutura, a apresentação e a relevância do protocolo, obtendo um Índice de Validade de Conteúdo global de 0,88 e concordância excelente. O protocolo contempla, por meio de textos, diagramas e figuras, orientações para a avaliação e o tratamento de lesões por pressão em pessoas idosas, incluindo a mensuração, o registro das lesões e orientações para a alta hospitalar. **Considerações finais e implicações para a prática:** O protocolo mostrou-se válido e adequado para a prática clínica, podendo favorecer intervenções de enfermagem mais seguras, individualizadas e baseadas em evidências no cuidado à população idosa hospitalizada.

Palavras-chave: Cuidados de Enfermagem; Enfermagem; Idoso; Lesão por Pressão; Tecnologia Educacional.

RESUMEN

Objetivo: Desarrollar un protocolo de enfermería para la evaluación y el tratamiento de úlceras por presión en ancianos hospitalizados, con posterior validación de contenido. **Método:** Se realizó un estudio descriptivo y cuantitativo entre marzo de 2024 y agosto de 2025 en tres fases: teórica (revisión del alcance y desarrollo del protocolo); empírica (validación de contenido por jueces expertos); y analítica (análisis de sugerencias y adaptación del protocolo). Participaron once expertos. Se aplicaron el Índice de Validez de Contenido y el Coeficiente Kappa Modificado, considerándose satisfactorios los valores superiores a 0,8. **Resultados:** Los expertos evaluaron los objetivos, la estructura, la presentación y la relevancia del protocolo, obteniendo un Índice de Validez de Contenido global de 0,88 y una excelente concordancia. El protocolo incluye, mediante textos, diagramas y figuras, directrices para la evaluación y el tratamiento de úlceras por presión en ancianos, incluyendo la medición, el registro de las lesiones y las directrices para la alta hospitalaria. **Consideraciones finales e implicaciones para la práctica:** El protocolo demostró ser válido y apropiado para la práctica clínica, y puede promover intervenciones de enfermería más seguras, individualizadas y basadas en la evidencia en el cuidado de pacientes ancianos hospitalizados.

Palabras-clave: Atención de Enfermería; Enfermería; Anciano; Úlcera por Presión; Tecnología Educacional.

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INTRODUCTION

In recent decades, several countries have experienced an accelerated process of population aging, driven by increased life expectancy and reduced birth rates. Although senescence should not be considered a disease, greater vulnerability to illness and complications is observed among older adults, which can impact healthcare services due to care demands, the high prevalence of chronic diseases, and increased hospitalization rates.¹

The instability of hospitalized patients' clinical condition may increase the risk of adverse events. Among these, pressure injury (PI) stands out, characterized as localized damage to the skin or underlying tissues, usually over bony prominences or associated with the use of medical devices. This type of injury results from intense and prolonged pressure, frequently associated with shear forces.² The global prevalence of these injuries in hospital settings ranges from 15% to 24%. In Brazil, although national data are not uniform, studies indicate a prevalence ranging from 27% to 39.4% among hospitalized patients.³

The biochemical and molecular changes inherent to human aging may increase the risk of PI development. Reduced skin elasticity, diminished cellular regeneration capacity, and alterations in microcirculation and tissue oxygenation are factors that favor chronic tissue damage. In addition to senescence-related changes, the prevalence of chronic noncommunicable diseases, such as diabetes mellitus, hypertension, and cardiovascular diseases, may impair sensory perception, blood circulation, mobility, and level of consciousness.⁴ A recent meta-analysis identified advanced age, immobility, incontinence, nutritional risk, length of hospital stay, previous admission to an Intensive Care Unit, and diabetes as relevant risk factors for PI among hospitalized older adults.⁵

Skin injuries have a multifactorial origin and are associated with high levels of discomfort, pain, and physical and emotional limitations. When they affect older adults, they increase the risk of infections and sepsis, conditions that worsen patients' clinical status, prolong hospitalization, increase healthcare costs, and substantially raise mortality rates associated with these factors.⁴

An international guideline for PI highlights, among its statements and recommendations for best practices, that individualized preventive care and injury treatment should be instituted early.² In line with these recommendations, within the Brazilian context, healthcare aimed at the promotion, prevention, treatment, and rehabilitation of individuals with skin injuries is regulated by Resolution 787 of August 21, 2025 of the Federal Nursing Council—the body responsible for regulating and overseeing the nursing profession in Brazil. This resolution defines the nursing team's responsibilities and establishes the nurses' role in clinical assessment, protocol development, as well as the selection, recommendation, and prescription of dressings and adjunctive technologies for the care of individuals with skin injuries.⁶

From this perspective, nursing continuously incorporates scientific evidence into clinical practice. Such advancement seeks

to ensure safe, effective practices aligned with patients' needs. In recent years, there has been a significant increase in nurses' participation in the development, implementation, and assessment of health technologies. In this context, evidence-based clinical protocols and educational materials stand out, contributing to the qualification of care and the strengthening of patient safety.⁷ The development of such instruments may support hospital nursing practice by guiding clinical decision-making, reducing variability in care practices, and improving the quality and safety of the care provided.⁸

Recent guidelines recognize the complexity of managing PIs in older adults, emphasizing the need for multidisciplinary and individualized approaches. However, they also highlight the scarcity of robust studies specifically focused on this population, as well as the limited availability of specific and up-to-date protocols to support appropriate assessment and treatment.⁹ This limitation contributes to inadequate practices, lack of standardization in decision-making, difficulties in incorporating new technologies, waste of materials and advanced wound dressings, and insufficient monitoring of process and outcome indicators.

Therefore, there is a clear need for a resource capable of guiding the development of individualized care plans, ensuring qualified and older adult-centered care. In this regard, the development, validity, and implementation of nursing protocols have contributed to equipping nurses for care, management, and educational activities, promoting a model for applying scientific knowledge to professional practice. In light of this context, this study aimed to develop a nursing protocol for PI assessment and treatment in hospitalized older adults and subsequently validate its content.

METHODS

This is a descriptive study with a quantitative approach aimed at the development of an educational health technology, followed by its validity, guided by the methodological framework proposed by Pasquali.¹⁰ Thus, the study was conducted in three systematized stages: theoretical, which included the scoping review and protocol development; empirical, corresponding to content validity of the protocol by expert judges; and analytical, which involved the analysis of suggestions received and adaptation of the protocol, resulting in the consolidation of the proposed educational technology. The stages were carried out between March 2024 and August 2025.

The first stage consisted of a scoping review conducted between March and April 2024, in accordance with JBI recommendations and structured according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews flow diagram.¹¹ The research protocol was registered on the Open Science Framework platform under identification number 10.17605/OSF.IO/P9DG4.

The investigation was structured using the PCC acronym, in which P referred to the population (older adults), C to the concept (nursing interventions for PI assessment and treatment), and C

to the context (hospitalization). Based on this framework, the following guiding question was established: What are the nursing interventions for PI assessment and treatment in hospitalized older adults?¹²

Subsequently, a nursing protocol for PI assessment and treatment in hospitalized older adults was developed based on the evidence obtained through the scoping review. Eighteen national and international scientific publications were included in the study. The evidence was grouped according to similarities and differences into two categories: Nursing interventions, assessment, and management systems for PIs; and Products and technologies for PI treatment, with emphasis on injury prevention and treatment.¹²

The second stage corresponded to content validity by expert judges. The judges were selected by convenience sampling, initially through the analysis of 18 nursing curricula available on the Brazilian National Council for Scientific and Technological Development *Lattes* Platform, using the subject search tool with the descriptors "Pressure Ulcer" and "Gerontology". Initially, 18 nurses were contacted via email. Additionally, the snowball sampling technique was employed to expand the identification of experts whose profiles met the study criteria.

Professionals were considered eligible if they were nurses with clinical or teaching experience in nursing, specifically in wound care and/or PI management, with knowledge of the Nursing Process and the implementation of care protocols. Moreover, they were required to hold a specialist, master's, or doctoral degree in the research area, as well as relevant scientific publications. To be classified as an expert judge, a minimum score of five points was required according to Fehring's model.¹³ Professionals with less than one year of experience in wound and/or PI assessment and treatment were excluded.

After curriculum analysis and application of eligibility criteria, 18 professionals were invited to participate in the study through the email addresses available on the *Lattes* Platform. Of these, nine accepted and completed the assessment, resulting in a 50% attrition rate (n=9), attributed to non-response or failure to return the assessment within the established deadline. Additionally, five professionals were contacted by email following recommendations from participating nurses. Of these, two accepted and completed the assessment, resulting in a 60% attrition rate (n=3). Thus, 11 experts participated as content judges, in accordance with Pasquali's recommendation.¹⁰

Expert judges received, via email, an invitation containing the presentation of the study objectives and a formal invitation to participate. Detailed instructions regarding completion of the data collection instrument, developed using the Google Forms® platform, were also provided, along with the Informed Consent Form and the proposed protocol. A 15-day deadline was established for returning the assessment, with an estimated completion time of approximately 30 minutes for reviewing the material and completing the questionnaire.

The validity instrument was structured into two main sections. Initially, it included the sociodemographic, academic, and professional characteristics of expert judges. The second section consisted of an adapted instrument that assessed the educational technology across three dimensions: objectives, structure and presentation, and relevance, according to a validated tool.¹⁴

The "objectives" dimension assessed the comprehensiveness and coherence of the protocol, considering its adequacy to the purposes, goals, or outcomes to be achieved through the use of the educational technology. The "structure and presentation" dimension analyzed the clarity and coherence of the proposed guidelines, including content organization, language, logical sequence, and ease of understanding. The "relevance" dimension assessed the degree of significance and applicability of the technology, considering its pertinence to professional practice and its potential contribution to healthcare. Each item was assessed using a four-point Likert scale ranging from 1 (totally adequate) to 4 (inadequate), with an open-ended field available after each statement for comments and suggestions from the judges.

The collected data were organized in Microsoft Excel spreadsheets and analyzed using descriptive statistics, including mean and relative frequency calculations. Content validity by the experts was performed based on the Content Validity Index (CVI), a methodology widely recognized and recommended in health research for measuring the degree of agreement among evaluators.

The CVI is obtained by calculating the proportion of responses assigned scores of "3" or "4" on a relevance scale. Items rated as "1" or "2" should be reanalyzed or excluded from the instrument. Thus, the index is calculated by dividing the number of responses scored 3 and 4 by the total number of responses obtained for the item.¹⁰ Components that achieved a CVI equal to or greater than 0.80 were considered validated, indicating at least 80% agreement among judges.

Furthermore, to analyze the level of agreement among experts, the modified Kappa coefficient was employed. The following classification parameters were used: values between 0.40 and 0.59 indicated low agreement; values between 0.60 and 0.74 indicated moderate to good agreement; and values greater than 0.75 indicated excellent agreement.¹⁵ It should be noted that internal consistency analysis using Cronbach's alpha coefficient was not performed because this stage of the study focused exclusively on content validity by expert judges and did not involve application of the instrument to a sample of the target population or the assessment of a latent construct.

The study was conducted in accordance with ethical principles established in national and international regulations. The investigation followed the provisions of Resolution 510/2016 of the Brazilian National Health Council. Ethical approval was obtained from the Research Ethics Committee of *Universidade Estadual da Paraíba*, under Certificate of Presentation for Ethical Consideration

89673125.4.0000.5187 and Opinion 7.709.700, issued on July 16, 2025.

RESULTS

During the protocol validity stage, 11 expert judges participated, all female (100%), with a mean age of 40 years (minimum 33 and maximum 59 years). The length of nursing education ranged from 15 to 20 years for 45.45% of participants. Concerning academic qualifications, eight (72.7%) held a master's degree and two (18.2%) held a doctoral degree. As for their field of practice with older adults, nine (81.8%) reported experience in direct care and two (18.2%) in teaching. Moreover, ten (90.9%) reported having scientific publications in indexed journals in the fields of gerontology, wounds, and/or PIs, as well as previous experience in the development and/or validity of educational materials.

In the assessment conducted by expert judges, three thematic domains were examined: objectives, structure and presentation, and relevance. In the “objectives” domain, items presented CVI values ranging from 0.81 to 0.90, with Kappa coefficients also classified as excellent (≥ 0.81). In the “structure and presentation” domain, items achieved CVI values between 0.81 and 1.00, with Kappa coefficients likewise classified as excellent.

The “relevance” domain presented CVI values ranging from 0.81 to 0.90 and Kappa coefficients classified as excellent for all items, demonstrating a high level of agreement regarding the clinical significance of the protocol, the possibility of knowledge generalization, and its applicability across different healthcare practice settings. Considering the three thematic domains, the overall CVI of the instrument was 0.88, as shown in Table 1. All analyzed elements achieved agreement classified as excellent and were considered validated because they presented an agreement index above 80%.

Table 1 – Parameters considered for validity by expert judges and calculation of the Content Validity Index. João Pessoa, PB, Brazil, 2025.

VARIABLES	SCORE (n=11)				CVI	KAPPA	ASSESSMENT
	TA	A	PA	I			
1 – Objectives							
The information/content is coherent with the daily needs of older adults with PI.	8	1	2	0	0.81	0.81	Excellent
The information/content is important for the quality of life of older adults with PI.	9	1	1	0	0.90	0.90	Excellent
It encourages and/or stimulates behavioral and attitudinal changes, improving the quality of life of older adults with PI.	8	1	1	1	0.81	0.81	Excellent
It can circulate within the scientific community of the field.	8	2	1	0	0.90	0.90	Excellent
It meets the objectives of nurses who provide care to/work with older adults with PI.	8	1	2	0	0.81	0.81	Excellent
2 – Structure and presentation							
The protocol is appropriate for nurses who provide care to older adults with PI.	8	2	1	0	0.90	0.90	Excellent
The messages are presented clearly and objectively.	9	1	1	0	0.90	0.90	Excellent
The information presented is scientifically accurate.	8	1	2	0	0.81	0.81	Excellent
The material is appropriate to the sociocultural level of nurses who provide care to older adults with PI.	9	2	0	0	1.00	1.00	Excellent
There is a logical sequence in the proposed product.	9	2	0	0	1.00	1.00	Excellent
The information is well structured and consistent with the topic.	6	3	2	0	0.81	0.81	Excellent
The information presented is compatible with the level of knowledge of nurses who provide care to hospitalized older adults.	7	4	0	0	1.00	1.00	Excellent

Note: TA - totally adequate; A - adequate; PA - partially adequate; I - inadequate; PI – pressure injury; CVI - Content Validity Index.

Table 1 – Continued...

VARIABLES	SCORE (n=11)				CVI	KAPPA	ASSESSMENT
	TA	A	PA	I			
3 – Relevance							
The topics address key aspects that should be reinforced.	7	2	2	0	0.81	0.81	Excellent
The protocol enables the generalization and transfer of acquired knowledge to different healthcare practice settings.	6	4	1	0	0.90	0.90	Excellent
The protocol promotes knowledge construction.	8	2	1	0	0.90	0.90	Excellent
The protocol includes the content necessary for the knowledge of nurses who provide care to older adults with PI.	9	2	0	0	0.81	0.81	Excellent
The protocol is appropriate for use by any nurse who provides care to older adults with PI.	9	2	0	0	0.81	0.81	Excellent
CVI total					0.88		

Note: TA - totally adequate; A - adequate; PA - partially adequate; I - inadequate; PI – pressure injury; CVI - Content Validity Index.

Despite the favorable assessments of the protocol, particularly regarding its originality, standardization of information, and objectivity, some experts recommended adjustments and additions aimed at increasing its robustness, completeness, and applicability. Chart 1 presents the recommendations made by expert judges for protocol refinement and the corresponding analyses. All suggestions were carefully assessed by the authors, and those that did not imply changes to the thematic scope were incorporated.

As all assessed items achieved the minimum required level of agreement, a second round of validity with experts was not necessary. After the suggested revisions, the final version of the protocol was entitled “Nursing Protocol for the Assessment and Treatment of Pressure Injury in Hospitalized Older Adults”.

The protocol includes a cover page, back cover, table of contents, presentation, purpose, justification, scope, definitions, concepts, and classification of PIs, as well as guidelines for assessment and treatment in older adults using the TIMERS acronym, which stands for Tissue/Debridement, Infection, Moisture, Edge, Regeneration, and Social Factors.¹⁶ It also addresses pain assessment, measurement and documentation techniques, application of the Pressure Ulcer Scale for Healing (PUSH) tool¹⁷, criteria for selecting the ideal coverage, specific care for older adults with PI, and guidelines for hospital discharge. Finally, the bibliographic references used in its construction are presented.

Regarding its scope, the proposed product is intended for application in hospital inpatient units dedicated to older adults, with the objective of guiding nurses in PI assessment and treatment, serving as a clinical reference for nursing team interventions. The material design and typography were developed for both digital and printed formats, facilitating rapid and user-friendly consultation. The document contains 32 pages and is structured into six charts and 13 figures (Figure 1).

DISCUSSION

The present study resulted in the development and validity of a protocol entitled “Nursing Protocol for the Assessment and Treatment of Pressure Injury in Hospitalized Older Adults”. The assessment conducted by the expert judges demonstrated an overall and item-level CVI above the minimum recommended value, thereby confirming the effectiveness of the proposal in achieving its objectives. The developed protocol is intended for implementation in hospital units focused on the care of older adults, with the purpose of supporting nurses’ clinical practice in PI assessment and treatment, as well as serving as a reference instrument for nursing team decision-making.

Considering the intrinsic and extrinsic factors that contribute to the development of PIs, older adults are particularly vulnerable due to the changes associated with the aging process.¹⁸ Older adults are at the highest risk because they have fragile skin, may be malnourished, have reduced sensitivity, a greater predisposition to chronic health problems, and may have intrinsic factors such as alterations in elimination, nutrition, circulation, skin sensitivity, level of consciousness, and mobility.¹⁹

Within this context of increased clinical and functional vulnerability, it is essential that nursing care extends beyond technical and clinical measures, incorporating ethical, communicative, and cultural dimensions. Accordingly, studies conducted in Europe and Ghana that examined older adults’ perspectives on nursing care highlight effective communication, the assurance of privacy, respect for cultural and religious beliefs, and the involvement of patients and their families in decision-making as central elements for experiencing dignity in care.^{20,21}

Factors such as a high nursing workload, limited resources, insufficient training, and the diversity of available treatments may be identified as barriers to the implementation of preventive and therapeutic measures for PIs.²² One of the essential aspects of care is dressing management, for which the selection of the

Chart 1 – Summary of adjustments suggested by the expert judges and authors' analysis.

Judges' Suggestions	Modification Implemented	Justification
<i>"[...] in the recommendation for cleansing with a PHMB antiseptic, describe the proposed substance more explicitly [...]" (P02).</i>	YES	The recommendation was revised to specify the use of a PHMB-containing antiseptic intended for wound treatment, distinguishing it from products used for oral hygiene, cosmetic purposes, and ophthalmic solutions.
<i>"[...] provide treatment and dressing recommendations according to the stage of the injury [...]" (P04).</i>	NO	Therapeutic recommendations were established based on tissue type, presence of infection, volume and characteristics of exudate, as well as social factors. These factors may vary even among injuries classified within the same stage.
<i>"[...] replace the term 'sometimes referred to as necrosis' with 'also known as slough, devitalized tissue, or necrosis' [...]" (P02).</i>	YES	The sentence was reformulated as requested, incorporating other nomenclatures commonly used in academic and clinical settings to refer to the term "necrosis".
<i>"[...] in the dressing table, add a footnote indicating that the dressing change frequency mentioned is an estimate [...]" (P02).</i>	YES	The footnote was included as requested, clarifying that although there is a recommended change frequency for each dressing type, the nurse should assess the need for replacement before the scheduled period, especially considering the volume of exudate.
<i>"[...] in the dressing table, add EFA gel [...]" (P03).</i>	YES	EFA gel was added to the dressings indicated for the treatment of PIs.
<i>"[...] in the dressing table, when referring to hydrocolloid presentations, remove the mention of paste and powder [...]" (P07). "[...] regarding hydrocolloid dressing changes, add the need for daily monitoring when used in plate form [...]" (P07).</i>	YES	References to hydrocolloid paste and powder presentations were removed because they are not indicated for PI treatment and are used in ostomy care. A recommendation for daily monitoring of the plate format and assessment of adhesion was added.
<i>"[...] in the polyurethane foam section, add information about ibuprofen-containing foam in the observations [...]" (P10).</i>	YES	Information regarding the existence of polyurethane foam with ibuprofen was added to the "Observations" column, highlighting its analgesic function.
<i>"[...] emphasize the importance of nutrition in PI treatment [...]" (P04). "[...] I suggest including nutritional and hydration aspects as fundamental for the care of older adults [...]" (P02).</i>	YES	In the section entitled "The Older Adult with PI", a more detailed and emphatic description was added regarding the importance of nutritional support in PI treatment, particularly among older adults.
<i>"[...] add some nursing diagnoses [...]" (P08).</i>	YES	In the section entitled "The Older Adult with PI", the main nursing diagnoses from the NANDA-I Taxonomy applicable to this population were incorporated.

Note: PHMB - polyhexamethylene biguanide; EFA - essential fatty acid; PI - pressure injury; NANDA-I - North American Nursing Diagnosis Association International.

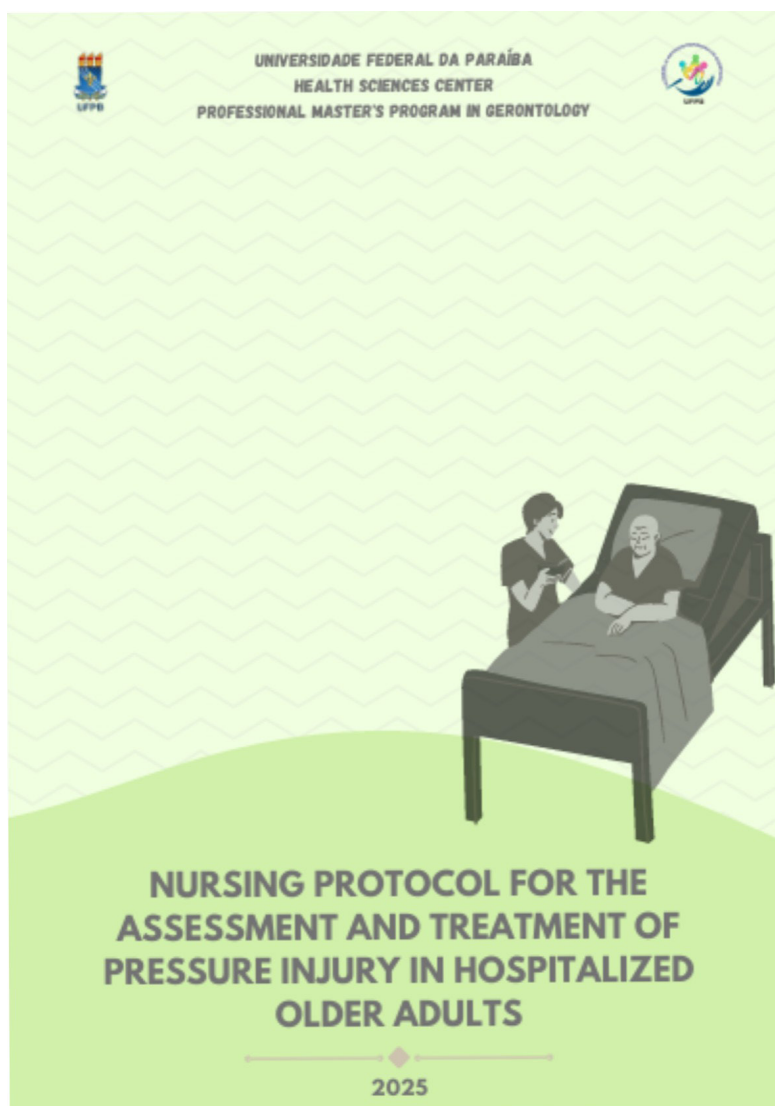


Figure 1 – Cover page of the final version of the protocol entitled “Nursing Protocol for the Assessment and Treatment of Pressure Injury in Hospitalized Older Adults”. João Pessoa, PB, Brazil, 2025.

most appropriate dressing should consider both the specific characteristics of the injury and the materials composing the dressing. This assessment includes aspects such as dressing structure and composition, the need to maintain a physiologically moist environment, wound characteristics, and therapeutic goals such as exudate absorption, odor control, microorganism control, pain relief, and promotion of autolytic debridement.²³

Furthermore, nurses must understand the mechanisms of action of different dressings and accurately identify the wound-healing process stage. Based on this knowledge, together with an understanding of wound pathogenesis, nurses can prescribe dressings more appropriately.²³ Since PI is a multifactorial condition, the importance of nutritional support in preventing PI progression and maintaining the nutritional status of hospitalized older adults should be emphasized. Malnutrition compromises

collagen synthesis and tissue regeneration, delaying healing. Therefore, individualized nutritional support is essential to promote tissue recovery, prevent new injuries, and reduce complications during hospitalization.²⁴

In this regard, the adoption of protocols for clinical practice is a fundamental strategy for supporting evidence-based care practices. Nursing research has focused on mechanisms that facilitate evidence implementation, particularly through tools that optimize nurses' work and their teams based on the best available evidence, while considering local realities, professional experience, and the preferences of patients and their families.²⁵

The international literature demonstrates the growing use of robust methods, such as evidence mapping, in the development and assessment of nursing protocols in specific fields, including gerontology. However, the effectiveness of these protocols depends

directly on local implementation strategies, organizational culture, and the development of professional competencies.²⁶ A recent study conducted in Australia identified high workload, psychological stress, insufficient competence, confidence and professional experience, excessive documentation, limited access to resources, and the physician–nurse relationship as the main barriers to the implementation of nursing protocols, particularly when adequate institutional support is lacking.²⁷

Evidence-based educational technologies are described as valid, safe, effective, and attractive.²⁸ These characteristics enable healthcare professionals, based on the results obtained, to develop specific and individualized care plans for each patient, while also promoting the use of a common language and the standardization of assessments in clinical practice. The relevance of illustrations as a complementary resource to written content should also be highlighted, as they facilitate understanding of the information provided and specifically address the needs of the target audience of the technology.²⁹

Accordingly, in the present study, the strategic use of charts and tables was adopted, allowing key information to be presented in a concise manner and facilitating rapid consultation. Furthermore, diagrams and illustrative images were incorporated to complement the textual content, making the protocol more didactic and accessible. These visual resources not only make reading more dynamic but also assist in understanding PI classification and treatment stages. Assessment tools such as TIMERS and PUSH were visually highlighted through graphic elements that facilitate their practical application, enabling any professional, even without prior experience with the protocol, to use it correctly.

This strategy for organizing and presenting content is supported by the literature, as a review comprising 84 studies, predominantly from North America and Europe, demonstrated that educational technologies, when used alone and compared with usual practice, contribute to improving healthcare professionals' performance, although no conclusive effects on patient clinical outcomes were identified.³⁰ Furthermore, the findings indicate that computerized versions of these materials have a similar or slightly greater impact than printed versions regarding changes in professional practice.³⁰

The importance of validity by experts should also be emphasized, since it enables adjustments and adaptations according to the real demands of professional practice, as occurred in the present study, in which the content was aligned with the most recent scientific guidelines and incorporated the contributions of the evaluators.³¹ Following the experts' recommendations, the protocol was expanded to include the main Nursing Diagnoses from the North American Nursing Diagnosis Association Taxonomy relevant to older adults with PI. These include frail older adult syndrome, risk for frail older adult syndrome, insufficient nutritional intake, adult PI, risk for adult PI, impaired walking ability, impaired bed mobility, acute pain, and chronic pain.³²

Implementing the Nursing Process requires solid theoretical and practical knowledge, as well as analytical skills, both of which are fundamental for enhancing clinical reasoning.³³ Its primary

objective is to ensure a comprehensive, continuous, participatory, individualized, properly documented, and evaluable model of care, with the patient at the center of the process.³⁴ Therefore, instruments such as the one developed and validated by experts in this study constitute essential resources for clinical practice, as they integrate consolidated scientific evidence with professional expertise—one of the fundamental principles of Evidence-Based Practice (EBP).²⁵

The final validated version of the protocol will enable nurses, based on EBP, to identify and classify injuries, use validated instruments to guide treatment, assess pain, measure and document injuries, select the appropriate dressing, and prepare older adults and their caregivers for hospital discharge. The product design was developed with a focus on creating a visual identity that combines clarity and practicality—characteristics that are fundamental for a clinical care instrument.

CONCLUSION AND IMPLICATIONS FOR PRACTICE

The development and validity of a nursing protocol for PI assessment and treatment in hospitalized older adults enabled several reflections on the care provided to this population, particularly regarding specialized care, considering the limited number of studies focused on this group.

The protocol proved to be a valid and appropriate instrument for use by nurses, achieving values above 0.80 for both the CVI and the Kappa coefficient, with hospital inpatient units for older adults representing potential settings for its implementation. It is expected that the use of the protocol will ensure that interventions are planned and adapted to the individual needs of this population, strengthening autonomy and safety in clinical decision-making.

The scarcity of studies specifically addressing PI assessment and treatment in older adults, particularly within the Brazilian context, represented a challenge during the conduct of this research. The main limitation of the study refers to the absence of clinical validity of the protocol. Therefore, future investigations are recommended to assess its applicability in clinical practice, as well as studies that consider the physiological changes associated with aging as determining factors for a differentiated approach by the nursing team.

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DATA AVAILABILITY RESEARCH

The protocol—developed as the product of a master's dissertation—is available in the institutional repository of *Universidade*

Federal da Paraíba and can be accessed through the following link: <https://repositorio.ufpb.br/jspui/handle/123456789/36141>.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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