KNOWLEDGE TEST ON PRESSURE INJURY
TESTE DE CONHECIMENTO SOBRE LESÃO POR PRESSÃO
TEST DE CONOCIMIENTO SOBRE LESIÓN POR PRESIÓN

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ABSTRACT

Objective: to analyze the scientific production regarding the use of the Pressure Ulcer Knowledge Test. **Method:** this is an integrative review, conducted between March and July 2017, guided by the question << What are the scientific productions about pressure ulcer used by the Knowledge Test? >> There was a search in the databases SCOPUS, CINAHL, MEDLINE, BDNF, and LILACS, from 1995 to 2017, with descriptors “nursing”, “prevention pressure ulcers” and “knowledge”, using the Boolean “and”. Original articles have been included in Portuguese and English, published in full and electronically available. **Results:** there were 22 publications, 12 national and 10 international identified, most of them produced in 2015 (27.3%), predominantly in the level of evidence VI, applying the test, carried out primarily in intensive care and critical sectors, in university and private hospitals, including nurses and other health professionals. **Conclusion:** the knowledge deficit by health professionals in critical hospital units on evaluation, staging, and prevention of pressure injury using the instrument is indisputable. **Descriptors:** Knowledge; Pressure Ulcer; Nursing; Prevention; Continuing Education; Critical Care.

RESUMO

Objetivo: analisar a produção científica referente à utilização do Teste de Conhecimento sobre Úlcera por Pressão. **Método:** revisão integrativa, realizada entre os meses de março e julho de 2017, norteada pela questão << Quais as produções científicas sobre úlcera por pressão que utilizaram o Teste de Conhecimento? >> Realizou-se busca nas bases de dados SCOPUS, CINAHL, MEDLINE, BDNF e LILACS, no período de 1995 a 2017, com descritores “nursing”, “prevention pressure ulcers” e “knowledge”, utilizando o boleano “and”. Foram incluídos artigos originais nos idiomas português e inglês, publicados na íntegra e disponíveis eletronicamente. **Resultados:** foram identificadas 22 publicações, 12 nacionais e 10 internacionais, a maioria produzida em 2015 (27,3%), predomínio no nível de evidência VI, aplicando o teste, realizado, prioritariamente, em terapia intensiva e setores críticos, nos hospitais universitários e privados, contemplando profissionais de enfermagem e de outras áreas da saúde. **Conclusão:** é indiscutível o déficit de conhecimento por parte dos profissionais de saúde, em unidades críticas hospitalares sobre avaliação, estadiamento e prevenção da lesão por pressão utilizando o instrumento. **Descritores:** Conhecimento; Úlcera por Pressão; Enfermagem; Prevenção; Educação Continuada; Cuidados Críticos.

RESUMEN

Objetivo: analizar la producción científica referente a la utilización del Test de Conocimiento sobre Úlcera por Presión. **Método:** revisión integradora, realizada entre los meses de marzo y julio de 2017, guiada por la pregunta << Cuáles son las producciones científicas sobre úlcera por presión que utilizaron el Test de Conocimiento? >> Se realizó un búsqueda en las bases de datos SCOPUS, CINAHL, MEDLINE, BDNF y LILACS, en el período de 1995 a 2017, con descriptores “nursing”, “prevention pressure ulcers” y “knowledge”, utilizando el boleano “and”. Fueron incluidos artículos originales en los idiomas portugués e inglés, publicados en su íntegra y disponibles electrónicamente. **Resultados:** fueron identificadas 22 publicaciones, 12 nacionales y 10 internacionales, la mayoría producida en 2015 (27,3%), predominio en el nivel de evidencia VI, aplicando el test, realizado, prioritariamente, en terapia intensiva y sectores críticos, en los hospitales universitarios y privados, contemplando profesionales de enfermería y de otras áreas de la salud. **Conclusión:** es indiscutible el déficit de conocimiento por parte de los profesionales de salud, en unidades críticas hospitalares sobre evaluación, fases y prevención de la lesión por presión utilizando el instrumento. **Descriptores:** Conocimiento; Úlcera por Presión; Enfermería; Prevención; Educación Continua; Cuidados Críticos.

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INTRODUCTION

Pressure injury (PL) is a current name instituted by the National Pressure Ulcer Advisory Panel National (NPUAP), replacing the term pressure ulcer, considered a serious problem that affects patients in bed in all areas of health care. This lesion is defined as localized damage to the underlying skin and/or soft tissues, usually on a bone prominence, or related to the use of a medical device or other artifact, occurring as a result of intense and/or prolonged pressure in combination with the shear.¹

In this study, the term pressure injury will be adopted, except in the title of the articles and references, due to the original name of the Pressure Ulcer Knowledge Test.

The intrinsic and extrinsic risk factors of malnutrition, edema, drug vasoconstriction, loss of consciousness, incontinence and vasculopathy, hyperthermia, immobility, pressure, friction, age, humidity and use of mattress inadequate. When these lesions are installed, they cause pain, suffering, impair the quality of life, increase morbidity and mortality, prolonging the time and cost of hospitalization.²

Regarding the incidence, international studies have pointed out that PL in intensive care is 14.3 to 18.7% .^{3,4} A single study performed in the United States showed a variation between 8 and 40%, and an estimated prevalence of 22%.⁵

In Brazil, studies have identified an incidence of 13.13% to 62.5% and prevalence between 9.2% and 37.41%, depending on the population, region and hospital unit that the study was conducted.⁶⁻¹⁰

As a way to prevent these injuries and sequels, knowledge about risk, prevention, staging, and treatment continues to be fundamental for all health professionals, especially nursing. The nurse's role in PL prevention presupposes that this professional establish the nursing diagnoses and interventions, which implies the need to evaluate the risk of the patients to develop a PL. Therefore, it depends not only on the clinical skill of the nurse but also on the use of a measuring instrument for risk assessment, which presents adequate indexes of predictive validity, sensitivity, specificity and reliability tests.^{2,11,12}

Care of pressure injuries is totally linked to nursing care, being relevant the possibility of implementing adequate preventive practices, providing improvement in the quality of care provided to the patient, as well as a decrease in hospital costs, since consequently, the

patient will be less hospitalized and will reduce the risk of comorbidity.¹³

Nurses' knowledge and attitudes are seen as extrinsic factors for the prevention of PL.¹⁴ However, despite the advances in technical-scientific knowledge in the health area and the existence of guidelines that have published complementary recommendations for PL prevention, the problem is persistent, and the knowledge of nursing professionals remains deficient.^{1,15,16} Caring for patients with pressure injury requires a high level of knowledge.¹⁷ To speak of the importance of nursing professionals in the domain of advancing scientific knowledge and practical approach to PL assessment, staging, and prevention is an activity that requires interest and dedication, which means giving importance to the issue responsibly in the context of concern.

The research is justified by the relevance in verifying the knowledge in the national and international literature that health professionals hold on the evaluation, staging, and prevention of PL in publications that used the Knowledge Ulcer on Pressure Ulcer Knowledge Test, and also because it is a current theme, where there are still many doubts by the nursing, regarding these items, revealing that there is a lack of knowledge by health professionals about the problem.

OBJECTIVE

- To analyze the scientific production regarding the use of the Pressure Ulcer Knowledge Test.

METHOD

This is an integrative review considered as a method that provides the synthesis of knowledge and the incorporation of the applicability of results of significant studies in practice.¹⁸

The methodological process carefully followed the following steps: identification of the theme and/or definition of the problem and elaboration of the guiding question for the research; establishment of criteria for inclusion and exclusion of studies/sampling or search in the literature; definition of the information to be extracted from the selected studies; evaluation of studies included in the integrative review; interpretation of results and review/synthesis of knowledge, which provided the critical analysis of the findings.¹⁸

This research was based on the question: What are the scientific productions about pressure ulcer used by the Knowledge Test?

The temporal delimitation of articles selected in the journals considered the period of the last 22 years of publication using the test.

The descriptors in Health Sciences (DeCS) were applied from the following words in English and their combinations integrated by the Boolean “and”: “Nursing” and “Pressure Ulcer”; “Nursing” and “Knowledge”; “Nursing” and “Pressure Ulcer” and “Knowledge”; “Nursing” and “Pressure Ulcer Prevention”; “Nursing” and “pressure ulcer prevention” and “knowledge”; and “Pressure Ulcer Prevention” and “knowledge” in order to add the variables of specificity and

completeness, which influence the whole method of information retrieval, contemplating all the descriptors.

The bibliographical survey was carried out from July to October 2017, accessing the Virtual Health Library (VHL) and Capes Journal Portal, including databases: SCOPUS, Cumulative Index to Nursing and Allied Health Literature (CINHAL), Medical Literature Analysis and Retrieval System Online (MEDLINE), Nursing Database (BDENF) and Latin American and Caribbean Literature in Health Sciences (LILACS), according to Figure 1.

Figure 1. Flowchart of article search strategy. João Pessoa (PB), Brazil, 2017.

The inclusion criteria defined for the selection of articles were complete scientific papers that answered the guiding question in national and international journals, available in English, Spanish and Portuguese; in the online format that used the knowledge test; articles published and indexed in the databases developed in Brazil and in the

world. It was adopted as a temporal cut from 1995 to 2017 to reach articles produced from its development¹⁹, translation²⁰ and validation into the Brazilian language.²¹

Articles of review, articles of opinion, dissertations, theses, articles that did not respond to the guiding question, and articles that appeared in more than one database that

were counted only once were excluded. With this foundation, there were 371 publications added and, after refinement, the final sample consisted of 22 articles.

For the data collection, an instrument composed of database, title, authors, year of publication, country, methodological approach, sample, place where they were developed, periodical, descriptors, objective, publication participants, main results, conclusion, and level of evidence were used.

As for the selection of articles, they were obtained through the reading of the titles; then the abstracts of the productions to verify if they presented correlation with the thematic, and, later, the publications were read in full, observing the methodology in the use of said test of knowledge.

The results were synthesized and each article received a numerical sequence code to facilitate identification (Article 1- A1, Article 2- A2,...). All the articles obtained were evaluated by two researchers to ensure that the publications included the inclusion criteria.

Regarding the level of research evidence, they were classified as Level I - systematic review or meta-analysis of multiple controlled studies; Level II - individual study with experimental design; Level III - study with quasi-experimental design as a study without randomization with single group pre- and post-test, time series or case-control; Level IV - study with non-experimental design as descriptive correlational and qualitative research or case studies; Level V - case report or data obtained systematically, of verifiable quality or program evaluation data; and Level VI - opinion of reputable authorities based on clinical competence or expert committees' opinions, including interpretations of non-research-based information.²²

The analysis of the articles consisted of the exhaustive reading, the synthesis of the content, the filling of the above-mentioned instrument and, later, the elaboration of figures with discussion about the results found to answer the guiding question and the purpose of the study. The ethical aspects were respected, referring the consulted authors for the accomplishment of this review.

RESULTS

The sample consisted of 22 articles, from a universe of 371 publications, and these were published in 16 different journals. Figure 1 shows the synthesis of the articles included in

the integrative review, facilitating identification with the following points: article and author, year, country, methodological outline, sample, periodical, and level of evidence.

Article/Authors	Year	Country	Methodological Design	Sample	Journal	LE
A1. ¹⁹	1995	U.S	Quantitative	228 nurses	Adv Wound Care	VI
A2. ²³	1997	U.S	Quantitative, transversal	75 nurses	Ostomy Management	Wound VI
A3. ²⁰	2003	Brazil	Quantitative	83 graduation students	Ostomy Management	Wound VI
A4. ²¹	2008	Brazil	Quantitative, descriptive, comparative, of educational intervention	50 nursing professionals	Acta Paul. Enferm.	III
A5. ²⁴	2009	U.S	Descriptive, non-experimental, quantitative	96 nurses	The Kansas Nurse	IV
A6. ¹³	2010	Brazil	Descriptive, cross-sectional, quantitative	29 nurses	Rev enferm UFPE online	VI
A7. ¹⁵	2010	Brazil	Quantitative, descriptive, exploratory	386 health professionals	Revista Latino-Am. Enfermagem	VI
A8. ²⁵	2010	Brazil	Transversal, quantitative	106 nurses	Ostomy Management	Wound VI
A9. ²⁶	2011	Iran	Descriptive, quantitative	126 nurses	Int Wound J	VI
A10. ²⁷	2012	Brazil	Quantitative	54 nursing graduate	Nursing	VI
A11. ²⁸	2012	Brazil	Descriptive, exploratory, cross-sectional, quantitative	56 health professionals	Revista Científica	Estação VI
A12. ²⁹	2014	Brazil	Field, exploratory, quantitative	40 nurses	Rev enferm UFPE online	VI
A13. ³⁰	2014	Brazil	Descriptive, exploratory, quantitative, educational intervention	49 nurses	Rev enferm UFPE online	III
A14. ³¹	2014	Brazil	Quantitative, descriptive, exploratory, transverse	37 nursing professionals	Rev Enferm UFSM	VI
A15. ³²	2014	Iran	Exploratory, transverse, quantitative	159 nurses	International Journal of Orthopedic and Trauma Nursing	VI
A16. ³³	2015	Brazil	Descriptive, exploratory, quantitative	85 health professionals	Cogitare Enferm	VI
A17. ¹⁷	2015	Iran	Quantitative, descriptive, cross-sectional	133 nursing students	British Journal of Nursing	VI
A18. ³⁴	2015	Brazil	Descriptive, exploratory, quantitative	47 caregivers	Aquichan	VI
A19. ³⁵	2015	Brazil	Case study, descriptive, quantitative	25 nursing professionals	Cogitare enferm	V
A20. ¹⁶	2015	Brazil	Descriptive, cross-sectional and quantitative	23 nursing graduate	Enferm. Foco	VI
A21. ³⁶	2015	Ethiopia	Transversal by design, quantitative	217 nurses	Advances in Nursing	VI
A22. ³⁷	2017	Brazil	Descriptive, exploratory, quantitative	40 nursing professionals	Revista Brasileira de Enfermagem	VI

Figure 1. Synthesis of scientific production (Article 1 - A1... Article 22 - A22). João Pessoa (PB), Brazil, 2017.

Figure 2 shows the title, general objective, evaluated in this research, results, and conclusions of the studies

Title	General Objective	Results and Conclusions
A1. Nurses' knowledge about prevention, staging, and description of pressure ulcer ¹⁹	To examine nurses' knowledge about pressure ulcer prevention and wound descriptions.	Knowledge of nurses was significant when they obtained information in lectures or read an article about PL, and in the knowledge, score was not related to educational intervention, age or years of work experience.
A2. Knowledge of critical care nurses on prevention, staging, and description of pressure ulcer ²³	To find out knowledge of critical care nurses on pressure ulcer prevention, staging, and description in reference to the AHCPR guideline on early pressure and ulcer prevention.	Knowledge deficit about PL prevention in critical care nurses was revealed. Because these injuries have been identified as a national health concern, information about their prevention should be shared and implemented in patient care.
A3. Knowledge of pressure ulcers by nursing undergraduate students in Brazil ²⁰	To examine the knowledge of Brazilian nursing students about the prevention of pressure ulcers, evaluation and description of wounds.	The students correctly answered 67.7% of the instrument. Only 26 students correctly answered between 71.1% and 98.8%, being considered a high-level knowledge items above 90%. The availability of special programs and resources, including the Internet, made a difference in knowledge.
A4. Effect of educational interventions on the knowledge of nursing professionals on pressure ulcer prevention ²¹	To evaluate the effect of educational interventions on the level of knowledge of nursing team members on the prevention of pressure ulcers in an Intensive Care Center.	Nurses in the pre-test (n=7, with 86.4% correct and not participating in the post-test), nursing auxiliaries and technicians (n=25 pretest, with 74.3% and 36 post-test with 81.2%), the item that obtained a lower hit rate was related to the need for repositioning every 2 hours of the patient in a wheelchair. Evidence of 100% success in staging by nurses in 4 questions and prevention in 16 questions. No technician hit 100% on the instrument. It was observed an increase of the hits after an educational intervention.
A5. Research Study: A Knowledge Assessment of Registered Nurses on the Prevention and Treatment of Pressure Ulcers ²⁴	To evaluate nurses' knowledge about pressure ulcer in the prevention, staging, and description of wounds.	Knowledge of the nurses was significant, with no relationship between the test results and age, experience or nursing degree. Common perceived barriers included: too heavy patient, no time, not enough staff.
A6. Nurses' perception on pressure ulcer prevention in a school hospital in the city of Recife ¹³	To identify the perception of nurses on pressure ulcer prevention in a school hospital in the city of Recife / PE.	Some nurses have difficulty defining pressure ulcers, their stages, risk factors, preventive measures and, mainly, about the risk assessment scales. There are also permanent education programs.
A7. Knowledge of nursing professionals about pressure ulcer prevention ¹⁵	To describe and analyze the knowledge of nursing team members who work directly in the care of adult and elderly patients in a university hospital on the prevention of pressure ulcer.	Deficit of knowledge presented by all nursing professionals, being able to guide the planning of strategies for dissemination to the adoption of preventive measures by the team, concluding that they needed permanent education.
A8. Knowledge of pressure ulcer among nurses in a Brazilian university hospital ²⁵	To analyze the knowledge of Brazilian nurses on prevention, evaluation, and staging of pressure ulcer.	It was confirmed that nurses have a general understanding of the principles of prevention and evaluation of pressure ulcer, but there is an important knowledge deficit. Focused continuing education efforts are needed to facilitate the implementation of evidence-based care.
A9. Knowledge of critical care nurses on pressure ulcer in southeastern Iran ²⁶	To determine the knowledge of critical care nurses on pressure ulcers.	Nurses' knowledge was insufficient, recommending educational programs and future research to study the level of knowledge of nurses in different areas (emergency room, surgical center), sectors with a high risk of developing pressure ulcer.
A10. Knowledge of nursing graduates regarding pressure ulcer: a study in the private setting ²⁷	Raising knowledge about pressure ulcer in nursing graduates of a private university.	Correlation scores in staging (61.9%), evaluation (69.7%) and prevention (59%). There is insufficient knowledge in which the future nurse needs adequate training to acquire skills in planning actions considering the identification of risk factors for the development of pressure ulcers, prevention, and treatment, as well as the

		education of patients and their families, in order to improve the quality of care provided to pressure ulcer patients.
A11. Knowledge of the multidisciplinary team on prevention, evaluation, and treatment of pressure injury at the Hospital Universitário Sul Fluminense ²⁸	Measure participants' level of knowledge about recommendations for prevention, assessment and optimal treatment of pressure ulcer in order to quantify it.	No participant obtained a percentage of hits equal to or greater than 90% of the items. There is a lack of knowledge of the existing guidelines on prevention, classification, and treatment of pressure ulcer among multi-professionals in the health area.
A12. Evaluation and prevention of pressure ulcers by intensive care nurses: knowledge and practice ²⁹	To identify the profile of nurses at the Intensive Care Center and to investigate their knowledge about the evaluation and prevention of pressure ulcer in this sector.	There was a deficit and discrepancy between the knowledge demonstrated by nurses, in the indexes of successes: evaluation (77.5%), prevention (25%) and their actions revealed in daily practical activities.
A13. Educational intervention as a process of knowledge construction in pressure ulcer care ³⁰	To evaluate the effect of an educational intervention in the construction of knowledge on pressure ulcer care.	The nurses reached 80.54% (pre-test) and 86.64% (post-test) in the prevention and evaluation domains, requiring a greater focus on staging. The results can help identify the deficiencies in nurses' knowledge and guide the planning of actions in the prevention of pressure ulcers.
A14. Knowledge of nursing professionals related to pressure ulcers ³¹	To identify the knowledge of nursing professionals about pressure ulcers in the Semi-Intensive Therapy Center of a university hospital.	Correlation indexes: nurses 33.6 (81.95%), nursing auxiliaries 30.9 (75.33%) and technical 28 (68.29%), presented unsatisfactory knowledge, which demonstrates the importance of updating and qualification in service. The limitation was the number of participants and the nursing service, which does not allow generalization of the results.
A15. Knowledge about pressure ulcer prevention, classification, and management: a survey of nurses working with trauma patients in the emergency department ³²	To examine the knowledge of trauma nurses on the prevention of pressure ulcers.	Nurses did not have sufficient knowledge about prevention, classification, and management of pressure ulcers. It is considered necessary to improve their knowledge with educational programs. The study may have presented a selection bias that affected the possibility of generalizing the results since the sample was for convenience.
A16. Prevention of pressure ulcers and assessment of nursing professionals' knowledge ³³	To evaluate the knowledge of the nursing team about measures of prevention of pressure ulcers in elderly adults.	There was a statistically significant difference between the longer time of service, older age, and professional category, indicating greater knowledge, especially, by nurses in some aspects. There is a lack of knowledge, requiring constant and effective educational interventions in order to improve care.
A17. Úlceras por pressão: quanto os estudantes de enfermagem realmente conhecem? ¹⁷	Determinar o nível de conhecimento dos alunos de enfermagem sobre a prevenção de úlceras de pressão, classificação e gestão.	O estudo revelou que os estudantes de enfermagem tinham conhecimento insuficiente sobre úlcera por pressão, necessitando cursos para a educação de enfermeiros.
A18. Knowledge of the care of individuals with spinal cord injury on pressure ulcer prevention. ³⁴	To identify the sociodemographic characteristics of people with spinal cord injury and their family caregivers and to evaluate the knowledge of caregivers about pressure ulcer prevention.	Nursing professionals can identify the main deficiencies in the knowledge of caregivers and carry out the planning of educational strategies for pressure ulcer prevention aimed at the continuity of safe and quality care at home.
A19. Knowledge of nursing professionals about pressure ulcers in two surgical units - Part 1 ³⁵	To identify the knowledge of nursing professionals about pressure ulcers in two surgical units, with emphasis on aspects related to prevention.	Evidence of nursing professionals' knowledge deficit in aspects related to pressure ulcer prevention and actions that are no longer indicated by the international guidelines. Pointed out the need and importance of continuing education to update and deepen knowledge for professionals in service and quality care to the patient.
A20. Knowledge of nursing undergraduates about pressure injury ¹⁶	To characterize the demographic profile of nursing graduates from the last semester of a Public University	The knowledge of undergraduates about pressure ulcer was insufficient. This reality will only be modified through the diffusion of the guidelines for prevention and

	of Piauí and to identify their knowledge about pressure ulcer.	treatment of pressure ulcers in undergraduate courses that will result in nurses more prepared for clinical practice.
A21. Assessment of nurse's knowledge, attitude and perceived barriers in pressure ulcer prevention practice at Addis Ababa government hospitals, Addis Ababa, Ethiopia, 2015 ³⁶	To assess the knowledge, attitudes, and barriers encountered by nurses to the practice expressed in the prevention of pressure ulcers in Addis Ababa government hospitals.	The nurses presented insufficient knowledge about evaluation, classification, and prevention of pressure ulcers with correct response in only 67% of the affirmatives, being the evaluation with a higher rate, requiring courses aimed at the education of nurses.
A22. Knowledge of the nursing team about pressure ulcer prevention ³⁷	To describe and analyze the knowledge of the nursing team about the classification, evaluation and measures of prevention of pressure ulcers in patients admitted to the Intensive Care Unit of a University Hospital in the city of Manaus.	The overall averages of correct answers were 63.4% for technicians/auxiliaries and nurses (51.4%), with a significant statistical difference in the prevention category ($p < 0.001$), presenting a knowledge deficit on pressure ulcer prevention, making the qualification of these professionals mandatory.

Figure 2. Main results of studies involving Pressure Ulcer Knowledge Test. João Pessoa (PB), Brazil, 2017.

DISCUSSION

It was found that three studies were developed by the author of the original instrument with other researchers.^{19,20,23} Other authors,^{17,31,32,35} also published more than one article in different years;¹⁵ studies in Brazil in different regions of the country (Manaus, São Paulo, Minas Gerais, Rio Grande do Sul, Paraná, Paraíba, Pernambuco, Piauí) and seven studies abroad (United States, Ethiopia, Iran).

It is worth mentioning that in the sample, there were a variety of professionals as authors, 21 of whom were nurses (A1, A2, A3, A4, A5, A6, A7, A9, A11, A12, A13, A14, A15, A16, A17 , A18, A19, A20, A21, A22), two involving nursing academics (A14 and A19), two medical academics (A16, A19), and one physician (A16); (A10), one by physiotherapists (A10), in which one or more of the six nurses are enrolled, applied the instrument to the multi-professional team, two had the participation of statisticians (A7, A18) and one involving caregivers (A18).

From this perspective, the instrument was used in research carried out by health professionals, not being applied exclusively by nurses and for nurses. The application of the instrument is specific to the knowledge of PL and can be used by the multi-professional team and others who attend patients with PL risk. However, only nursing has researched and conducted research using this tool, except for article A1031 that was applied by physiotherapists.

As for the hospitalization units, the instrument was more frequently applied in intensive care by articles A1, A2, A4, A5, A9, A11, A12, A14, A16, A22; (A6, A7, A13, A15, A19), also developed in a higher education institution (A3, A10, A20) and other sectors such as semi-intensive, emergency, and

emergency medical clinic, and surgical center(A6, A7, A8, A13, A15, A19), also developed in an institution of higher education (A3, A10, A20, A21) and a rehabilitation and specialty center (A18) were also studied.

The publications occurred between 1995 and 2017, 6 (27.3%), most published in 2015, 2014 (18.2%), 2010 (13.6%), 2012 (9.1%), 2011 and 2017 (4.8%), respectively, considering that there were no publications between the interval of 2004 and 2007 and in 2013 and 2016.

As for the methodological design, 14 articles are descriptive, one is comparative, seven are transversal, one is transversal by design, one is cross-sectional type, one is non-experimental and two used educational intervention strategy (pre-test and post-test), all with a quantitative approach.

The care of injuries is carried out mainly by the nursing team, being the nurse leader of the team, but it is not exclusive to this professional area, since wound care must be implemented in an interdisciplinary view.³⁸ Assessing the professionals' knowledge is essential to implement educational actions in various contexts of care to adequately care for people avoiding a high incidence of errors in targeted preventive measures.³⁹

It was observed that the impact of educational interventions, the organizational performance of the teams and the quality of care, the knowledge about the risk factors for the development of pressure injuries, as well as the prevention strategies and the treatment used are the most important subjects emphasized in the research. However, there is a need for further studies evaluating primary prevention associated with educational measures in various care settings, such as hospitals, long-term institutions, intensive care and home care, analyzing

information on specific conditions of each patient and the work environment, as well as the teamwork process and the institutional managers' view of pressure injuries to better understand how preventive interventions can be directed.

Ten (45.5%) international publications and 12 (54.5%) national publications were identified, with three (13.6%) in the journal *Ostomy Wound Management* and three (13.6%) in the *Journal UFPE online nursing*, the latter being national and headquartered in the Northeast region of Brazil.

Regarding the level of evidence²² of the selected publications, two presented level III (a study with a quasi-experimental design as a study without randomization with a single group pre- and post-test, time series or case-control), one at level V cases or data obtained systematically, verifiable quality or program evaluation data) and level VI (opinion of reputable authorities based on clinical competence or expert committees' opinion, including interpretations of non-research based information) prevailed, being found in 19 articles.

It should be considered that the instrument was originally developed and applied in intensive care, but it can be used in other clinics to treat patients at risk of pressure injury.

The interest of the nursing category by the theme remains in evidence, but other health professionals have also participated and applied the instrument, mainly in Brazil, after its validation²¹ and update.¹⁵

The research show a variety of methodology for the same instrument emphasizing the need to carry out educational intervention for health professionals, since the publications reveal the knowledge deficit to those who directly take care of patients at risk of pressure injury in all service environments health.³⁷

Of the 22 articles selected, there were 19 showing the professionals' knowledge about PL, two refer to the application of educational intervention and only one alludes to the nurses' perception. It is observed that, currently, the research concern is related to the knowledge of health and nursing professionals about PL in the evaluation, staging, and prevention of this injury to the patient in the various care settings. Thus, the articles include in the title the descriptor "knowledge", revealing the interest about the information level of these professionals regarding the researched topic and prevention care.

It was verified that the objectives of the articles, in general, were to characterize the profile of the health professionals and to evaluate the level of knowledge of the professionals using the test of knowledge.

It was verified that most of the publications, 20 (90.1%), show a lack of knowledge by the professionals about PL regarding the items: evaluation, staging and prevention represented by articles A2, A3, A4, A6, A7, A8 A12, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22. It is recorded that the original research¹⁹ and another study²³ revealed a lack of PL knowledge among nurses, independently of the area of clinical practice.

It is observed that two researches used as strategy the educational intervention evidencing an increase in knowledge after the procedure with nursing professionals.^{21,30} There were 14 studies that suggested educational or educational programs (A3, A9, A15, A18, A21), education (A14, A22), continuing education (A6, A7, A10, A14, A17), continuing education (A8, A19) and educational intervention (A16).

Research indicates that PL is an adverse event that can be prevented not only by the nursing team but also by the multi-professional team that participates in patient care, reinforcing the need for permanent education with professionals and to carry out training based on protocols such as measures to reduce indices and continuous monitoring.⁴²

It is understood that problematizing the situations of the work process favors the construction of knowledge, understood not as transfer of knowledge, but as a collective construction, in which all professionals seek solutions based on everyday experience to respond to their needs.³⁰ In a qualitative research, in front of the speeches of the professionals interviewed, the need to improve the knowledge of nurses who care for the patient who lives with pressure injury is notorious.⁴¹

It should be noted that some continuing education programs of health institutions have limited ability to produce change, since they maintain the programmatic logic of actions, not challenge the participants, nor problematize their own practices.³⁵ Thus, continuing education can minimize or solve mistakes promoting the updating of scientific knowledge.⁴² In another research, the authors affirm that the realization of continuous education with nursing professionals is a determining factor as a preventive measure of PL.⁴³

As limitations, the studies refer to scenario constraint, reduced sample, bias in the sample for convenience, need for replication with a larger and more diversified sample, collection environment in specific clinics, short time for the participant to respond to the instrument, small period established for the collection of data, the possibility of introducing educational intervention before and after the application of the instrument, which did not allow the generalization of research results.^{17,20,24-26,31-33,37}

CONCLUSION

It was identified through the integrative review the scientific production referring to the worldwide use of the Pressure Ulcer Knowledge Test. In this analysis, 2015 was the year with the greatest number of publications in international journals, 12 (63.2%), with a representation of Brazilian researchers. The knowledge test has greater application to nurses and health professionals, which proves to be an instrument developed to evaluate knowledge about PL evidencing evaluation, staging, and prevention.

It was concluded that most of the research was carried out in a hospital setting, in public and private universities, predominantly in the intensive care sector, which implies great concern about the results, since most of the research concluded that there was a deficiency in professionals' knowledge. In view of this, the need to develop educational strategies to qualify professionals is reiterated, since lack of knowledge has a direct impact on preventive actions and, consequently, on the incidence and prevalence of PL.

The research was pertinent and presents the description of what was studied in the national and international scope, demonstrating the importance of encouraging nurses to develop more research, considering the scientific and practical knowledge in the evaluation, staging and prevention of pressure injuries.

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Submission: 2018/01/26

Accepted: 2018/04/25

Publishing: 2018/06/01

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