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VARIABLES ASSOCIATED WITH PRESSURE INJURY PREVENTION: KNOWLEDGE FOR NURSING CARE

Variáveis associadas à prevenção das lesões por pressão: conhecimento para o cuidado de enfermagem

Variables asociadas a la prevención de las lesiones por presión: conocimiento para el cuidado de enfermería

Daniela de Aquino Freire[1], Thaís da Silva Oliveira[2], Nauã Rodrigues de Souza[3], Franciene Marília Elias dos Santos[4], Katiane Santana dos Santos[5], Maria Joanna Darc de Melo França[6]

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ABSTRACT

Objective: To identify in the scientific literature the variables associated with LPP prevention to subsidize nursing care. **Method:** This is an integrative review of the literature. **Results:** We analyzed 18 analyzed articles, of which 13 were exclusively elaborated by nurses. The analysis enabled the identification of 39 variables associated with the three dimensions emanating from the term "knowledge". It was possible to observe a predominance of valorization of the literature of those associated to the technical-scientific dimension with a quantitative of 35 variables. In this dimension it can be noted that the preventive measures are associated with the use of procedures for pressure relief. **Conclusion:** The integrative review made it possible to verify that care for prevention measures is a theme that demands concern on the part of the multiprofessional team, mainly by the nurses who have invested expressively in the best understanding of the problem and in the search for solutions through methodologically more refined searches.

Descriptors: Comprehensive health care; Nursing care; Health education; Nurses; Pressure ulcer

1 Nurse graduated from the School of Health of Arcoverde. PhD student in Nursing from the University of Pernambuco and Paraíba State University (UPE / UEPB). Professor at the Federal University of Pernambuco. ORCID iD: https://orcid.org/0000-0002-6708-5139

2 Nurse graduated from the Federal University of Pernambuco. Master of Nursing from the University of Pernambuco and Paraíba State University (UPE / UEPB). ORCID iD: https://orcid.org/0000-0002-6461-201X

3 Graduate nurse from the University of Pernambuco. Master of Nursing from the University of Pernambuco and Paraíba State University (UPE / UEPB). ORCID iD: https://orcid.org/0000-0001-9076-0449

4 Nurse graduated from Estácio de Sá College. Advanced Life Support Specialist: ICU and Emergency. ORCID iD: https://orcid.org/0000-0001-8715-8940

5 Nurse graduated from the Integrated College of Pernambuco. Urgency and Emergency Specialist. ORCID iD: https://orcid.org/0000-0002-2374-1456

6 Nurse graduated from the University of Pernambuco. Master of Nursing from the University of Pernambuco and Paraíba State University (UPE / UEPB). ORCID iD: https://orcid.org/0000-0002-8422-3580

RESUMO

Objetivo: Identificar na literatura científica as variáveis associadas à prevenção da LPP para subsidiar o cuidado de enfermagem. **Método:** Trata-se de uma revisão integrativa da literatura. **Resultados:** Foram analisados 18 artigos analisados, destes, 13 eram exclusivamente elaborados por enfermeiros. A análise possibilitou a identificação de 39 variáveis associadas as três dimensões emanadas do termo "conhecimento". Foi possível observar uma predominância de valorização da literatura daquelas associadas a dimensão técnico-cientifica com um quantitativo de 35 variáveis. Nesta dimensão pode-se notar que as medidas de prevenção estão associadas à utilização de procedimentos para alívio de pressão. **Conclusão:** A revisão integrativa permitiu verificar que os cuidados voltados a medidas de prevenção se constituem como um tema que demanda preocupação por parte da equipe multiprofissional, principalmente, pelos enfermeiros que tem investido de forma expressiva no melhor entendimento do problema e na busca de soluções através de pesquisas metodologicamente mais refinadas.

Descritores: Assistência integral à saúde; Cuidado de enfermagem; Educação em saúde; Enfermeiras e enfermeiros; Lesão por pressão

RESUMEN

Objetivo: Identificar en la literatura científica las variables asociadas a la prevención de la LPP para subsidiar el cuidado de enfermería. **Método:** Se trata de una revisión integrativa de la literatura. **Resultados:** Se analizaron 18 artículos analizados, de éstos, 13 eran exclusivamente elaborados por enfermeros. El análisis posibilitó la identificación de 39 variables asociadas a las tres dimensiones emanadas del término "conocimiento". Fue posible observar una predominancia de valorización de la literatura de aquellas asociadas a la dimensión técnico-científica con un cuantitativo de 35 variables. En esta dimensión se puede observar que las medidas de prevención están asociadas a la utilización de procedimientos para alivio de presión. **Conclusión:** La revisión integrativa permitió verificar que los cuidados dirigidos a medidas de prevención se constituyen como un tema que demanda preocupación por parte del equipo multiprofesional, principalmente, por los enfermeros que han invertido de forma expresiva en el mejor entendimiento del problema y en la búsqueda de soluciones a través de investigaciones metodológicamente más refinadas.

Descriptores: Atención integral de salud; Atención de enfermería; Educación en salud; Enfermeros; Úlcera por presión;

INTRODUCTION

Skin lesions pose many challenges for health professionals in clinical practice, especially pressure injuries (PLL), since they mainly affect patients with mobility restrictions, leading to increased costs in treatment and time of treatment, hospitalization, provide discomfort and negatively impact the service provided and the quality of life of individuals[1]. Even with the technological and scientific progress in terms of health interventions, LPP rates are high, ranging from 23.1% to 59.5%, especially in intensive care unit patients[2]. In addition, the patients with LPP are mainly elderly people with chronic degenerative diseases, such as diabetes mellitus, hypertension, urinary incontinence and use antibiotics[3]. LPP are chronic wounds in an area that undergoes cell death, originated when a tissue is compressed between a bony prominence and a hard surface for an extended period. They occur mainly due to the combination of three factors: unrelieved pressure, friction and shearing, causing tissue damage and complications in patient's health[4,5].

There has been ample effort within nursing and overall health care sector to establish guidelines and protocols for reducing LPP. In this context, the National Patient Safety Program (PNSP) was instituted by Ordinance MS / GM No. 529/2013, in order to monitor the incidence, and to institute institutional planning to minimize this problem, since preventive practices during hospitalization are an important indicator of the quality of care[6].

Prevention measures are established through the knowledge and skills of the health team that is engaged in direct and individualized patient care, leading to reduced rates of occurrence of LPP. Therefore, it is important that health professionals use scientific evidence to plan and implement preventive measures[7].

Patients, most in critical health condition, lack specialized care and the use of technological resources that demand priority in care, since the team aims to recover their health. From this perspective, whether due to the difficulty of implementing preventive measures to preserve skin integrity or to deterioration of the underlying condition, the development of LPP is still observed in many patients[8].

Given this finding, it is essential to analyze studies on LPP by patients in a hospital environment. The present study aimed to identify in the scientific literature the variables associated with the prevention of LPP to support nursing care.

METHODOLOGY

This is an integrative literature review, a method that allows a synthesis of knowledge including incorporation of the applicability of results and relevant studies in practice[9].

The methodological process included the following steps: selection of hypotheses and/or questions for review; establishment of sample selection criteria; categorization of studies and synthesis of the knowledge produced; data and results analysis; and interpretation of the results, which allowed for the critical examination of the findings[9]. Given the criteria proposed by the integrative review, the study aims to answer the question: What are the variables associated with the prevention of pressure injury to support nursing care found in scientific literature?

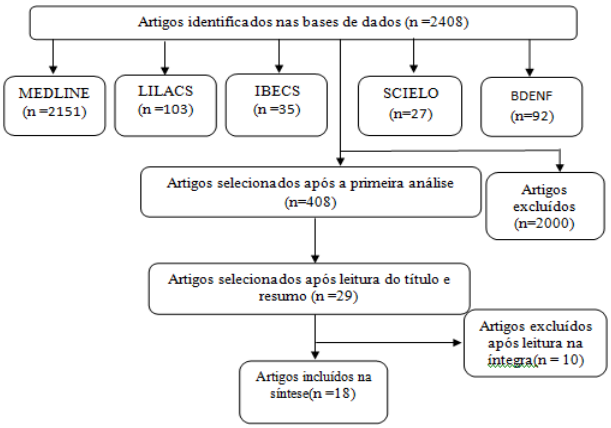
The inclusion criteria adopted for the search and selection of publications were: articles published in national and international scientific journals that addressed the theme: pressure injury prevention measures used by the nursing staff; published in Portuguese, English or Spanish; in the period from 2006 to 2016; indexed in the databases:

Latin American and Caribbean Health Sciences Literature (LILACS); Spanish Bibliographic Index of Health Sciences (IBECS), Nursing Database (BDENF), Medical Literature Analysis and Retrieval System Online (MEDLINE) and Scientific Electronic Library Online (SCIELO); made available in full, directly through the base site or through the Capes Portal; localizable by combining the following descriptors registered in the Health Sciences Descriptors (DeCS) Portal: "pressure ulcers", "ulcers due to pressure", "nursing" and "prevention." These descriptors were combined with boolean operators 'AND' and 'OR' in order to refine the studies according to the theme in question.

The search was performed in an orderly manner, with classification in the first analysis of articles in the categories (outside the period considered, does not provide the full text, published in more than one database, duplicates) and then were selected for a second analysis. Subsequently, a careful reading of the title and summary of each publication was performed in order to verify the alignment with the guiding question of the investigation. In case of doubt as to the inclusion or exclusion criteria, the article was read in full to reduce the risk of loss of publications. Thus, those who did not fully address the topic were discarded in the 2nd analysis.

Data collection took place in July and August 2016 and was supported by an instrument prepared by the authors, using the Microsoft Office Excel 2010 software, and included the following variables: article title, authors, journal, year of publication, country of origin of study, type / approach of study, database in which it was indexed, level of evidence, interventions and products specifically used for pressure injury prevention. The search initially found 2,408 articles, after the first analysis 29 remained and in the end the sample consisted of 18 articles (Figure 1).

Figure 1 - Flowchart of the study selection process. Recife, PE, Brazil, 2018



The entire article analyzed was considered as a reference for the study whether the methods of the prevention of pressure injury were mentioned by citation or as a focus of the article. The variables were initially listed after independent reading by two researchers and were later grouped according to the dimensions emanating from the semantic analysis of the word knowledge.

RESULTS

Eighteen articles were analyzed and, compared to the number originally found in the first stage of the selection, it becomes clear that only a small number of studies focuses on variables associated with the prevention of pressure injury (Figure 1).

Figure 2 shows that the highest number of articles published in relation to the theme comes from the nursing area, since of the 18 articles analyzed, 13 (72%) were exclusively written by nurses[10-13,16-22, 24 , 26-27].

Chart 1 - Distribution of articles included in the study according to authors, scale classification and pressure injury prevention characteristics. Recife-PE, 2016

Title	Authors	Country	Type of study	Journal and year of publication
Ações preventivas para úlcera por pressão em idosos com declínio funcional de mobilidade física no âmbito domiciliar	Ferreira JDL, Aguiar ESS, Lima CLJ, Brito KKG, Costa MML, Soares MJGO.[10]	Brazil	Quantitative, cross-sectional, household survey	Revista Estima - 2016
Aplicação de medidas de prevenção para úlceras por pressão pela equipe de enfermagem antes e após uma campanha educativa	Olkoski E, Assis GM.[11]	Brazil	Exploratory-descriptive research with quantitative approach	Escola Anna Nery - 2016
Role of Nutrition in the Treatment and Prevention of Pressure Ulcers	Thomas DR.[12]	USA	Review article	Nutrition in Clinical Practice - 2016
Introducing A Care bundle To prevent pressure injury (INTACT) in at-risk patients: A protocol for a cluster randomised trial	Wendy Chaboyer, et al.[13]	Australia	Randomized clinical trial	International Journal of Nursing Studies - 2015
Nursing practice in the prevention of pressure ulcers: an observational study of German Hospitals	Khadijeh H, et al.[14]	Germany	Observational descriptive study	Journal of Clinical Nursing - 2014

Title	Authors	Country	Type of study	Journal and year of publication
Pressure ulcer prevention and treatment knowledge of Jordanian nurses	Mohammad Y.N. Saleh, Mahmoud Al-Hussami, Denis Anthony.[15]	Jordania	Cross-sectional survey	Journal of Tissue Viability - 2013
Prevenção de úlceras por pressão no calcanhar com filme transparente de poliuretano	Souza TS, et al.[16]	Brazil	Non-randomized, controlled clinical trial	Acta Paul Enferm - 2013
Um desafio no cuidado em enfermagem: prevenir úlceras por pressão no cliente	Brandão ES, Santana MH, Santos I.[17]	Brazil	Descriptive cross-sectional study	R. pesq.: cuid. fundam. Online - 2013
Incidencia de las úlceras por presión tras la implementación de um protocolo de prevención	Rogenski NMB, Kurcgant P.[18]	Brazil	Prospective, descriptive, exploratory study	Rev. Latino-Am. Enfermagem - 2012
Tecnologia de enfermagem na prevenção da úlcera por pressão em pessoas com lesão medular	Studart RMB, Melo EM, Lopes MVO, Barbosa IV, Carvalho ZMF.[19]	Brazil	Cross-sectional, exploratory, descriptive study	Rev Bras Enferm - 2011
Pressure ulcer prevention in Australia: the role of the nurse practitioner in changing practice and saving lives	Asimus M, Lellan LM, Li P.[20]	Australia	Prospective study	International Wound Journal - 2011
Knowledge, attitudes and barriers towards prevention of pressure ulcers in intensive care units: A descriptive cross-sectional study	Lindgrenb TSM.[21]	Sweden	Cross-sectional description study	Intensive and Critical Care Nursing - 2010
Nurses' use of water-filledgloves in preventing heel pressure ulcer in the University College Hospital, Ibadan, Nigeria	Adejumo PO, Agoryelngwu J.[22]	Nigeria	Descriptive study	International Wound Journal - 2010
The value of systematic evaluation indetermining the effectiveness and practicalutility of a pressure-redistributing support surface	Corinne W.[2]	Malta	Systematic prospective investigation	Journal of Tissue Viability - 2010
Effectiveness of Two Cushions in the Preventionof Heel Pressure Ulcers	Heyneman A, Vander, Grypdonck M, Defloor T.[24]	Belgium	Comparative study	Worldviews on Evidence-Based Nursing - 2009
Prevention of Pressure Ulcers in the Surgical Patient	Patina S. Walton-Geer.[25]	USA	Review article	AORN Journal - 2009
Prevenção de úlcera por pressão: instrumentalizando a enfermagem e orientando o familiar cuidador	Lise F, Silva LC.[26]	Brazil	Qualitative	Acta Sci. Health Sci -2007
Implantação do protocolo assistencial de prevenção e tratamento de úlcera de pressão no hospital de clínicas de Porto Alegre	Menegon DB, Bercini RR, Brambila MI, Scola ML, Jansen MM, Tanaka RY.[27]	Brazil	Review article	Rev HCPA - 2007
Aplicando recomendações da Escala de Braden e prevenindo úlceras por pressão - evidências do cuidar em enfermagem	Sousa CA, Santos I, Silva LD.[28]	Brazil	Prospective longitudinal study	RevBrasEnferm - 2006

Another important point observed is that in 2008 there was no publication on the theme, and it is noteworthy that from 2010 the frequency of articles on the theme increased: 2010, 2013 and 2016 (three articles each year).

There is a larger number of publications in Brazil (n = 10) followed by Australia with two publications. It is possible to state that Brazilian production is ahead of other countries, however, accounting for continent, there is a higher frequency of studies in Europe (n = 04), followed by Oceania (n = 02). In South America only Brazilian articles appear.

The subject of pressure injury was approached in several ways, with the most frequent being the field research (n = 13). The most common types of study were: prospective (n = 06), systematic review (n = 03), cross-sectional (n = 02), clinical trial (n = 01) and case study (n = 01).

As demonstrated in Table 2, the analysis of the 18 studies made it possible to identify 39 variables associated with the three dimensions emanating from the term "knowledge". It was possible to observe a predominance of valorization of the literature of those associated to the technical-scientific dimension with a quantitative of 35 variables. In case of this dimension preventive measures are associated with the use of pressure relief procedures (n = 18).

Table 2 - Variables identified by thematic categories

Dim.*	Variables	n**
Self-evaluation	Risk assessment [7]	01
	Daily assessment of skin[19]	01
Technical-scientific	Repositioning up to 3 hours[1;6;9;10]	04
	Lateralization with angle less than 90º [1]	01
	Elevating headboard at na angle less than 45º [1;5;18]	03
	Changing decubitus every 2 hours[5;18;19]	03
	Elevating headboard at 30° [19]	01
	Heel lift with claf support[1;19]	02
	The use of foam pillows under the head[1]	01
	Ears free of pressure[1]	01
	The use of special mattresses (static and dynamic air)[1;3;6]	03
	Adequate fixation of catheters and drains[1]	01
	Braden Scale[2;4;5;9;10;12]	06
	The use of pillows under legs[3]	03
	Change in decubitus every 4 hours[3]	03
	Hygiene routine[5;18;19]	03
	Repositioning the person seated or in a wheelchair[19]	01
	Taking nutritional supplements[5;6;15]	03
	Healthy diet[6;7;15]	03
	Hydrating lotion[6;7;18;19]	04
	Pressure relief[7;18]	02
	Massage[7;10;19]	03
	Gloves with water at pressure points[8]	08
	Nutritional status[9;10;15;19]	04
	Guidance to the patient and family[9]	01
	Avoid humidity[10]	01
	Avoid friction over pressure points[10]	01
	Continuing education[10]	01
	Clear polyurethane film on the heel[13]	01
	Vegetable oil[19]	01
	Waterlow Scale[16]	01
	Sheets without wrinkles, folds or dirt[19]	01
	Using removable sheet or cover to move[19]	01
	Pressure redistribution mattress[17;19]	02
	Raise for local decompression[19]	01
Competencies	Assistance protocol[4;5]	02
	Prevention programme[11]	01

DISCUSSION

Of the 18 articles analyzed, 13 were exclusively elaborated by nurses[10-13,16-22,24,26-27]. This result may corroborate the fact that the prevention of pressure injuries is offered in nursing care. Therefore, the continuous concern of nurses and their understanding of the need to know the aspects of this specific care is emphasized.

The fact that the majority of quantitative research found was produced by nurses, especially those in Sweden, Belgium and Germany, highlights the concern and interest of this professional group in the search for solutions for the large number of patients who develop LPP. Despite the large number of cases observed many can be prevented by the comprehensive and individualized care provided to the patient by nurses.

It is the responsibility of the nursing team to provide assistance aimed at prevention and treatment of LPP considering that preventive actions help avoid suffering for the patient and family as well as unnecessary expenses for the institution[18]. We also emphasize that nurses represent an integral part of the multiprofessional team, which continuously works in patient care and contributes to providing qualified care rooted in scientific technical knowledge[29].

Quantitative research allows identifying clinical effectiveness and cost of treatments, interventions, or other aspects of health care[30]. It also provides knowledge on a certain problem, as well as information on incidence and prevalence contributing to the implementation and strengthening of measures aimed at the problem in question.

Understanding of knowledge was evidenced by the following: knowledge and understanding of a science, art or technique; ability to apply knowledge in the process; certainty of yourself and others[31]. Semantic analysis of the meaning of knowledge as the understanding of a science, art or technique; ability to apply in the process; certainty about oneself and others[31] allowed the characterization of three dimensions: self-evaluation, technical-scientific and competences and skills to evaluate and prevent PLL (Chart 1). This result is in line with the literature[32,33]. The explanation of Chart 1 made it possible to observe a greater predominance of variables associated with the "scientific technical" dimension that are associated with the use of pressure relief procedures. This fact is probably due to factors related to preventive techniques, since the pressure exerted on the skin is the most significant cause of the increase in injuries, and the nursing staff is committed to objective and constant care[18]. It is important to emphasize that nursing through specific instruction determines goals, employs predictive risk assessment scales and institutes measures for the prevention and treatment of LPP, in addition to determining an ongoing and evaluative process to maintain skin integrity[33]. Regarding the dimension "self-assessment", the literature emphasizes that personal knowledge is a continuous process that leads to change and growth, expressed by the deliberate actions and choices that professionals make in their daily lives[35]. The third dimension of knowledge "competencies and skills for the prevention of LPP" presented 02 associated variables, which were "care protocol and prevention program" which were present in 02 articles. Successful prevention of LPP is related to the knowledge and competence of health professionals on the subject, especially those of the nursing staff who are in direct and frequent patient care. However, it is necessary to consider the comprehensiveness of the individual and institutional factors that dominate the knowledge and the use of the evidence, so that the implemented strategies can be made feasible in hospital environment[34].

CONCLUSION

Regarding the definition of knowledge and evaluation of studies on prevention measures for pressure injuries, it was possible to identify three dimensions of knowledge and 37 variables related to them. The dimension of technical-scientific knowledge was the most valued and presented the largest number of variables cited by the studies analyzed.

The integrative review showed that care focused on prevention measures is a theme that demands attention from a multiprofessional team, especially nurses who have invested significantly in better understanding of the problem and in seeking solutions through methodologically more refined research.

The classification of the dimensions in terms of "knowledge" as well as the identification of associated variables may contribute to the nurses' understanding, stimulating reflection on the importance of continuous care delivery to patients in a qualified and systematized manner, having a holistic and humanized look that can contribute to reduce the alarming numbers of LPP.

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Corresponding author
Thaís da Silva Oliveira
Address: Av. Conselheiro Aguiar, 4241, Boa Viagem
Recife/PE, Brazil
Zip code: 51.021-030
Email address: thaiss.oliveira90@gmail.com
Telephone number: +55 (81) 99513-4455

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