

Active learning methodologies in training nurses for pressure injury prevention

RESUMO | Objetivos: Caracterizar a produção científica relacionada à Teoria do Autocuidado de OREM nas teses de enfermagem brasileiras disponíveis no banco de testes do portal CAPES. Método: Revisão bibliométrica de caráter descritivo, desenvolvida a partir da análise de teses disponíveis na CAPÉS. Pesquisa descritiva com Análise de Conteúdo, desenvolvida pela categorização dos conteúdos das teses conforme a utilização da teoria do autocuidado. Resultados: Foram incluídas 10 teses que apresentaram diferentes formas de aplicabilidade da teoria de Orem: validação de protocolo e escala, adaptação, desenvolvimento da consulta de enfermagem e elaboração de instrumento norteador da consulta de enfermagem. As estruturas semânticas relacionadas às categorizações principais de utilização da teoria do autocuidado envolveram: ação, instrumento, condições básicas e suplementares do ser humano e lócus do cuidado. Conclusão: A Teoria de Orem foi utilizada em contextos diversificados, fomentando caminhos para reflexões sobre a construção e aplicação do conhecimento próprio da enfermagem.

Descritores: Autocuidado; Teoria de Enfermagem; Bibliometria; Teses como Assunto; Enfermagem.

ABSTRACT | Objectives: To characterize the scientific production related to the OREM Self-Care Theory in Brazilian nursing theses available in the CAPES portal theses bank. Method: Bibliographic review of a descriptive nature, developed from the analysis of theses available at CAPES. Descriptive research with Content Analysis, developed from the categorization of the contents of theses according to the use of the theory of self-care. Results: The sample consisted of 10 theses that resembled different forms of applicability of Orem's theory: protocol and scale validation, adaptation, development of a nursing consultation and elaboration of a nursing consultation instrument. The semantic structures related to the main categorizations of use of the selfcare theory are: action, instrument, basic and supplementary human beings and locus of care. Conclusion: Orem's Theory was used in different contexts, encouraging ways to build and apply nursing knowledge.

Keywords: Self-care; Nursing Theory; Bibliometrics; Theses as Subject; Nursing.

RESUMEN | Objetivos: Caracterizar la producción científica relacionada con la Teoría del Autocuidado OREM en las tesis de enfermería brasileñas disponibles en el banco de tesis del portal CAPES. Método: Revisión bibliográfica de carácter descriptivo. desarrollada a partir del análisis de tesis disponibles en la CAPES. Investigación descriptiva con Análisis de Contenido, desarrollada a partir de la categorización de los contenidos de tesis según el uso de la teoría del autocuidado. Resultados: La muestra estuvo compuesta por 10 tesis que semejaron diferentes formas de aplicabilidad de la teoría de Orem: validación de protocolo y escala, adaptación, desarrollo de una consulta de enfermería y elaboración de un instrumento de consulta de enfermería. Las estructuras semánticas relacionadas con las principales categorizaciones de uso de la teoría del autocuidado son: acción, instrumento, seres humanos básicos y complementarios y locus del cuidado. Conclusión: la Teoría de Orem fue utilizada en diferentes contextos, fomentando formas de construir y aplicar el conocimiento de enfermería.

Palabras claves: Autocuidado; Teoría de Enfermería; bibliometría; tesis como tema; Enfermería.

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INTRODUCTION

ressure injuries (PI) can be defined as a localized injury that affects the skin and/or underlying tissues, usually over a bony prominence, resulting from pressure, pressure associated with shear and/or friction. (1) LPP are defined as a localized area of cell death, which develops when soft tissue is compressed

between a bony prominence and a hard surface for an extended period. (1-2)

Regarding its incidence, scholars on the subject argue that PI mainly affect hospitalized patients, as they are often exposed to risk factors. Added to this, the deficiency of preventive interventions for this pathology, which represents one of the main complications in the hospital context. Among the patients most affected by this problem are those admitted to the Intensive Care Unit (ICU), quadriplegics and elderly people with femoral neck fractures. (3-4)

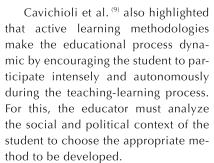
Regarding risk factors, studies on the subject allow us to observe that the development of PI is characterized as a complex multifactorial phenomenon that includes factors related to the patient and the external environment.

The nursing team is of fundamental importance in the process of prevention and treatment of PI, since it remains fully at the side of the patient, with the opportunity to develop preventive actions and, when already installed, treatment. However, the incidence of PI is still very high and knowledge about the severity of PI, especially in ICUs, is very low, which compromises the quality of care. Thus, to minimize the occurrence of PI and expand the knowledge of nursing professionals in relation to their prevention, active learning methodologies have been used in training and qualification programs. (7)

According to Rohrs et al. (8), teaching methodologies based on Problem-Based Learning (PBL), it enables the student to experience formative experiences in different clinical situations based on facts and in a safe environment, enabling the development of clinical reasoning, practical performance, acquisition of skills and improvement in communication between the multiprofessional team and the patient.



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Considering the above, the objective of this study is to analyze the scientific literature produced on the use of active learning methodologies in the training of nursing professionals for the prevention of PI, and to identify the main practices used for this purpose, as well as to demonstrate the benefits of using this teaching modality for the prevention of PI.

METHOD

The method adopted for the development of this study was the Integrative Literature Review which, considering its objectives, is classified as a descriptive study with a qualitative and quantitative approach. Integrative Review Studies aim to gather and summarize research results on a particular topic in question, making readers gain more in-depth knowledge about the subject addressed. (10)

Search strategy and databases used

For the elaboration of the research question, the PICO strategy (acronym for patient, intervention, comparison, outcomes) was used. Resulting in the following question: Does the use of active learning methodologies contribute to the training of nursing professionals in the prevention of PI?

The literature search was performed in Medline, Lilacs, Bdenf and Scielo databases. For this, the controlled descriptors in Portuguese and English found in DeCS and Mesh were used, which were: Lesão por pressão, Úlcera por pressão, Educação em en-



fermagem, Métodos de ensino, Aprendizagem baseada em problemas, Nursing Education, Pressure Injuries, Methods, Problem-Based Learning. For the search strategy adopted, the Boolean operators AND and OR were used, combined with the descriptors found and keywords.

Eligibility criteria and screening of studies

Articles published from January 2015 to December 2020, in Portuguese and English, were included, according to the fluency of the researchers. The exclusion criteria were: articles that did not address the active learning methodology as a tool in the training carried out to the target audience.

The screening was performed by two researchers independently, with the reading of titles and abstracts. After the initial exclusion, the selected studies were included for full reading.

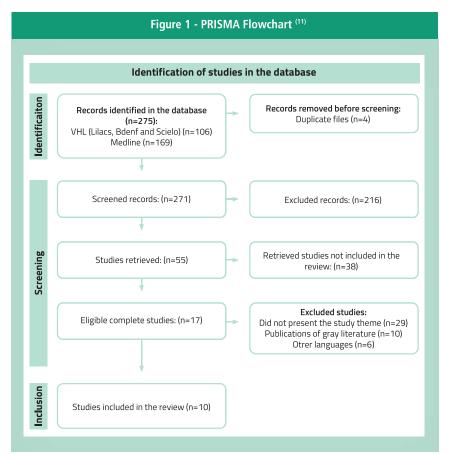
Data analysis

The publications included were submitted to full reading, then an analytical reading was performed in order to understand and categorize the data extracted from the studies into thematic groups, favoring the identification of variables of interest and key concepts. (10) After the organization of the thematic groups, the analysis and synthesis of the data was performed in a descriptive way.

RESULTS

The search in the databases resulted in a total of 275 publications. After evaluation according to the eligibility criteria of this study, 10 articles were included. Figure 1 illustrates the process of searching, screening and selecting the articles included in this review.

Regarding the year of publication, there is an increasing trend in the number of publications compared to



Source: http://prisma-statement.org/prismastatement/flowdiagram.aspx

the years 2016 to 2019, distributed as follows: 10% in 2016, 10% in 2017, 20% in 2018 and 60% in 2019. It is also noted that there were no publications from the year 2015 and 2020. Regarding the study design, one study is longitudinal (10%), 2 cross-sectional (20%), one exploratory (10%), three descriptive (30%) and three of an experimental or quasi-experimental nature (30%). The topics addressed were: in two articles (20%) problem-based learning in the training of nursing professionals and 8 articles (80%) specifically on the use of active learning methodologies in the prevention and treatment of PPL. Figure 2 presents the methodological and results synthesis of the studies included in this review.

DISCUSSION

Although in the period covered by the present study the number of publications found was not so expressive, the concern of scholars on the subject regarding the use of active learning methodologies in the training of nurses for the prevention of pressure injuries is visible. (12-14) Studies show that the use of active methodologies is not yet a common practice in nursing education, and that, for the most part, this method has been applied experimentally, in a curriculum subject, a module or some specific theme. In some cases, it is associated with other teaching strategies or supported by some theory. (15)

Active learning methodologies are considered of great relevance, as they are based on a situational approach



Figure 2 - Methodological synthesis and results of the studies included in this review:

N°	Objectives	Types of study	Research Procedures	Results
1	To compare the scores of knowledge about pressure ulcers of teams that participated or not in educational interventions	Study with experimental design	Data collected through a validated questionnaire. A total of 71 people participated in this study, including nurses and nursing technicians from three intensive care units, divided into an intervention group and a control group.	Educational interventions on staging, assessment and prevention of pressure ulcers would significantly contribute to the increase in the correct score in the knowledge test of the intervention group and improved knowledge on the subject.
2	To describe the presence and operationalization of educational strategies with the nursing team to support the implementation of pressure ulcer prevention programs in acute care hospitals in a large ()	Cross- sectional study	The paper case is carried out in a small group of 12-15 students and a teacher/facilitator in two meetings. In the first moment called "opening the case", the problem situation is triggered and the learning questions are defined, which will suitsidize the search for references for the construction of a synthesis of the following meeting, called closing. Four meetings were followed, between openings and closings.	Educational organizational strategies to support the implementation of pressure ulcer prevention are still insufficient and do not allow favorable and consistent results
3	To evaluate the contribution of educational technology on pressure injuries in care quality indicators	Quasi- experimental study	A design was carried out before and after an educational intervention, related to an online course on pressure injuries. Data collection correlated of three stages: collection of indicators on pressure injuries, application of the educational intervention and post-intervention patient assessment.	Risk assessment and skin description at admission showed higher values after educational intervention Description of preventive measures was higher in the post-educational intervention group.
4	To assess the perception of impact on amplitude and support for the transfer of online training on pressure injury prevention.	Exploratory/ descriptive study	A total of 97 nurses who worked in units with patients at higher risk of developing pressure injuries participated in the study. In addition, two instruments were applied to assess transfer support and impact perception.	The results of the evaluations show that online training adds knowledge to nurses and contributes to the implementation of new educational technologies in permanent training and development actions for nursing professionals.
5	To verify the effectiveness of the educational intervention through the assessment of nurses' knowledge about pressure injury prevention.	Quasi- experimental study	Study carried out with a single group of 95 nurses from a teaching hospital. As an educational strategy, active methodology and hybrid teaching were used, based on the reference of the	The average number of correct answers obtained by the nurse was 78.8% in the pre-test and 88.8% in the post-test, with a statistically significant difference (p < 0.001). The educational intervention developed was effective, as it contributed to the improvement of nurses' knowledge.
6	To describe the development of a virtual learning platform with situational problem solving as an innovative tool for teaching pressure injury prevention	Methodological study of descriptive approach	The methodological feelign adopted forespect the development of the following states: 1st stage -course presentation and postless reacturing states - 1st stage -course presentation and postless reacturing - and stage - situation reading - problem and problem affaithors reacturing - 3rd stage - reacturing in distabless and discussion forum; 4th stage - graphic and audiovisual presentation of producing classification of the developed postless reacturing the stage - evaluation of the developed product.	The incorporation of the methodology of distance education and problem solving are extremely relevant to the development of critical thinking - reflective in the qualification and professional updating in health.
7	To analyze the incidence of pressure injuries in a Special Care Unit	Quantitative, descriptive and exploratory study	Educational intervention, in a medium-sized public hospital, carried out with 10 participants. The data collection technique was chosen through direct non-participant observation, and the results were presented in the form of tables.	90% of the employees made mistakes related to the current classification of pressure injuries, however, 90% were able to identify possible preventive ways.
8	To compare the knowledge of intensive care nurses about pressure injuries before and after an educational intervention	Longitudinal study	The intervention was applied to nurses from the clinical intensive care unit, as it is the unit with the highest prevalence of pressure injuries in the institution, which is associated with the severity of the patients.	The average of correct answers was 81.1% and 84.8% in the pre- and post-intervention assessment, respectively. As for prevention, there was an average of 25.11 (78.5%) correct answers before the intervention and 26.22 (81.9%) after the course.
9	Assess nurses' knowledge of pressure injuries in order to gather baseline data, identify knowledge gaps and, based on the results, implement educational strategies to improve practice.	Cross- sectional study	The survey was advertised throughout the hospital by strategically placed posters, computer screen savers within the hospital and emails. Responders fitted out paper a cuestion-raines and calls was minurally enforced critical posters of the cuestion-raines and calls was minurally enforced critical posters of the cuestion of the cues	Our results identified deficits in knowledge about pressure injuries, reinforcing the importance of educational strategies to expand nurses' knowledge.
10	Assess nurses' leavisedge of pressure injuries in order to gather baseline data, identify knowledge gaps and, based on the results, implement educational strategies to improve practice.	Methodological study of descriptive approach	We describe a two-step care package development: Step 1 used the Nominal Group technique to gain consensus on the elements to be included in the care package. Step 2 followed the processes of: Behavior change wheel to facilitate the development of the implementation plan for the care package.	The development of care packages by professionals is characterized as an important instrument, as it enables critical, reflective development and the adoption of best practices in the prevention and treatment of injuries.

Source: Prepared by the authors, 2022

where the nursing professional meets the needs of clients from a critical and reflective teaching-learning process. (13,14,16) In general, some articles point out that the use of this methodology has been applied to address the following topics: cardiorespiratory arrest (CPA), medical-surgical nursing; in pediatrics; ethic; cardiorespiratory system; basic nursing care; surgical

center nursing; nursing diagnosis; health management; anatomy and physiology; reproductive health module and also in the care of children with bronchitis.(17,15) Although still little used in the education and training of nursing professionals, active learning methodologies are characterized as an important instrument in the teaching-learning process, being applied in the approach of different contents. (17,15)

Different studies report the experience and results obtained with the use of this practice in the training of nursing professionals for the prevention of PI. One of these included the participation of 97 nurses whose objective was to assess the perception of impact in amplitude and support for the transfer of online training on pressure injury prevention. The activities carried out were: tests with PI photos to classify the stages (multiple choice exercise with feedback); three case studies for the assessment of risk factors for the development of PI and three more for the application of the Braden Scale, based on real situations; elaboration of situational strategic planning of preventive measures; and forums for doubts regarding the training content. (18)

Based on the results obtained, the authors showed that online training from a problem-based approach, it adds knowledge to nurses and contributes to the implementation of new educational technologies in permanent training and development actions and contributes to improving patient care in relation to the occurrence of pressure injuries. (18)

Studies present other innovative strategies through active methodologies,

such as the realistic simulation for training nursing professionals in relation to the management of PI pointed out by Avelino et al ⁽¹⁹⁾, in this study, realistic simulation associated with scenic makeup was used in teaching wound assessment and dressing. The activity comprised a theoretical approach on the types of wounds, the healing process and tissues that may be present in the lesions, dressings and

the use of covers, through the lecture, followed by the presentation of realistic makeup to the public, so that they could develop clinical thinking about a lesion and be able to evaluate them in terms of: characteristics, type, tissue present, describe the adequate coverage for each case; in addition to performing a demonstration of instrumental debridement, with a scalpel blade.

Other study, (20) described the construction of a high-fidelity simulated clinical scenario regarding nursing care for patients with pressure injuries and found that the construction of planned simulated clinical scenarios, structured and validated, brings the learner closer to clinical practice, enabling the development of skills necessary for the prevention and treatment of pressure injuries.

The effectiveness of active learning methodologies in teaching pressure injury prevention was also evidenced in a quasi-experimental study, carried out with a group of 95 nurses from a teaching hospital in the interior of Minas Gerais, where active methodology and hybrid teaching were used, based on the framework of the Arch Method by Charles Maguerez, which consists of five stages: observation of reality, key positions, theorization, solution hypotheses and application to reality.

Based on the results obtained, the authors concluded that the use of blended learning and active methodology as a focus of educational intervention aimed at improving nurses in relation to the prevention of PI presented satisfactory results, since there was a statistically significant difference (p<0.001) when considering the average of correct answers before and after the intervention (from 78.8% to 88.8%).⁽²¹⁾

Given the above, it is understood that educational interventions using active learning methodologies are considered of great importance

in view of the complexity caused by the high incidence of pressure injuries in health institutions, therefore, they should integrate care actions and professional training to minimize their occurrence. (12,14,23,24)

In view of the complexity that PI present to health institutions and, in particular, to the quality of nursing care, it is considered necessary to train and encourage professionals to prevent PI. It is understood, therefore, that the use of this teaching modality enables the acquisition of knowledge, combining evidence-based theory with professional practice, and should therefore be considered as a fundamental tool for improving the quality of care and health safety. (13, 23)

CONCLUSION

This study analyzed and synthesized articles that presented the use of active learning methodologies in the training of nursing professionals for the prevention of PI, thus identifying the main practices used for the training of these professionals. It was found that the use of active learning methodologies contributes significantly to the training of nursing professionals in relation to the prevention and treatment of PI, being a tool that can help to minimize the occurrence of PI and expand the knowledge of nursing professionals in relation to their prevention.

The importance of the present study is highlighted as a guiding tool for nurses to use active learning methodologies in their daily practice to train their professionals in the prevention and treatment of PI. It is also noteworthy that nurses take advantage of opportunities to improve the service and offer safe, high-quality care. (25) However, more studies with greater amplitude of bibliographic search are necessary to show if there are more strategies used for this purpose.

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