



## REVISIONES

### Teaching patient safety in nursing: integrative review

Ensino da segurança do paciente na enfermagem: revisão integrativa

Enseñanza de la seguridad del paciente en enfermería: revisión integrativa

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### ABSTRACT:

**Objective:** To identify scientific evidence in the literature on how the teaching of patient safety takes place in Nursing.

**Methodology:** It was an integrative review of the literature conducted in the following databases: LILACS, MEDLINE, BDNF, IBECs, CINAHL, Web of Science, and Scopus.

**Results:** 11 articles published from 2007 were selected, predominantly in the United States, descriptive and of intervention type, in which the most papers used strategy for teaching patient safety in Nursing was simulation and in research, the problem-based learning method.

**Conclusion:** Teaching patient safety in Nursing has been carried out most of the time through simulation, but it remains little-known in Brazil. Therefore, it is essential to include this topic in Nursing curricular programs from the beginning of the course and the use of strong teaching methods and strategies.

**Key words:** patient safety; teaching; education; nursing.

### RESUMEN:

**Objetivo:** Identificar en la literatura evidencias científicas sobre cómo se realiza la enseñanza de seguridad del paciente en la Enfermería.

**Metodología:** Revisión integrativa de la literatura, realizada en las bases de datos: LILACS, MEDLINE, BDNF, IBECs, CINAHL, Web of Science y SCOPUS.

**Resultados:** Se seleccionaron 11 artículos publicados a partir de 2007, predominantemente en los Estados Unidos, descriptivos y de intervención, cuya estrategia para enseñanza de seguridad del paciente en la enfermería más utilizada fue la simulación y, en una investigación, el método del aprendizaje basado en el problema.

**Conclusión:** La enseñanza sobre seguridad del paciente en la enfermería ha sido realizada en la mayoría de las veces por medio de simulación, pero es poco difundido en Brasil. Por lo tanto, es

fundamental la inclusión de esta temática en las matrices curriculares de Enfermería desde el inicio del curso y el uso de métodos y estrategias robustos de enseñanza.

**Palabras clave:** seguridad del paciente; enseñanza; educación; enfermería.

## RESUMO:

**Objetivo:** Identificar na literatura evidências científicas sobre como é realizado o ensino de segurança do paciente na Enfermagem.

**Metodologia:** Revisão integrativa da literatura realizada nas bases de dados: LILACS, MEDLINE, BDNF, IBICS, CINAHL, Web of Science e SCOPUS.

**Resultados:** Foram selecionados 11 artigos publicados a partir de 2007, predominantemente nos Estados Unidos, descritivos e de intervenção, cuja estratégia para o ensino de segurança do paciente na Enfermagem mais utilizada foi a simulação e em uma pesquisa o método da aprendizagem baseada em problema.

**Conclusão:** O ensino sobre segurança do paciente na Enfermagem tem sido realizado na maioria das vezes por meio de simulação, mas é pouco difundido no Brasil. Portanto, é fundamental a inclusão desta temática nas matrizes curriculares de Enfermagem desde o início do curso e uso de métodos e estratégias robustos de ensino.

**Palavras-chave:** segurança do paciente; ensino; educação; enfermagem.

## INTRODUCTION

Patient safety is a priority issue in the health area and is directly related to the quality of care provided. It is challenging for health institutions, because even in the face of efforts to improve care, the number of errors and adverse events that occur is still considerable. In this way, patient safety is established as a serious problem that occupies a primary role in public policies and is a challenge.

The World Health Organization (WHO) has established patient safety as a reduction, to an acceptable minimum, of the risk of unnecessary harm associated with health care. With the intention of tackling the various problems involving patient safety, this topic was defined as high priority, recognizing the need to promote it as a fundamental principle for the entire health system, suggesting that the contents on the theme should be inserted in the matrix curriculum of courses in this area <sup>(1,2)</sup>.

In developing countries, one in 10 patients is harmed when receiving hospital care. In addition, the risk of infection associated with healthcare in these countries is up to 20 times greater than in developed countries <sup>(3)</sup>. Given this reality, the Ministry of Health (MS), through Ordinance No. 529, launched the National Patient Safety Program, aiming, among other objectives, to promote and to support the implementation of patient safety initiatives, in addition to promoting inclusion of the theme in technical education, undergraduate and graduate courses in health <sup>(4)</sup>.

Thus, the National Patient Safety Program is structured in four axes, and it is observed mainly from axis 3 that it is of great relevance to introduce contents that contemplate patient safety in the curricular matrix of health courses, improving knowledge, skills and attitudes on the part of the students, resulting in better training, in favor of safe care provided to the patient <sup>(5,6)</sup>.

In this sense, continuous learning is necessary for the patient safety landscape to undergo significant changes. Some measures that can be implemented are: notifying adverse events and analyzing their real causes, improving the quality of teaching in

training institutions, using clinical protocols and adopting strategies to more than avoid errors, promoting a culture of safety in the place of professional practice <sup>(7,8)</sup>.

Inserted in this context, Nursing, among the different classes of health professionals, has an important role in the processes that aim to guarantee and improve the quality of the assistance provided and, consequently, provide safety to the patients under their care <sup>(9,10)</sup>. For having a primary role in health care, this professional needs training for patient safety <sup>(11)</sup>.

Few studies address the teaching of patient safety in Nursing and there is no integrative literature review on how it is performed, so this study is necessary <sup>(12-14)</sup>. It becomes relevant, since the scientific knowledge focused on this topic is incipient, with bibliographic scarcity, mainly in Brazil. It is intended, therefore, to contribute to the dissemination of the results obtained by stimulating new research on the teaching of patient safety, supporting the reflection and planning of nursing training for the construction of essential skills and abilities with a view to safe care. Given the above, this study aimed to identify scientific evidence in the literature about how patient safety teaching in Nursing is carried out.

## METHODOLOGY

It is an integrative literature review and for its elaboration, the following steps were adopted: identification/formulation of the problem; literature search/data collection; data evaluation; analysis of the findings of the articles included in the review and presentation and interpretation of results <sup>(15)</sup>.

In the first, available knowledge about teaching patient safety in Nursing was listed. Thus, this study was guided by the following research question: what evidence is available in the literature on how the teaching of patient safety in nursing is carried out? For its elaboration, the PICo strategy was adopted, in which P corresponds to the Participants, I to the phenomenon of Interest and Co to the context of the study (Chart 1) <sup>(16)</sup>.

**Chart 1** - Research question according to the PICo strategy

Description	PICo	Components	Descriptor	Type
Participants	P	Nursing students	Enfermagem Nursing students	DeCS MeSH Títulos CINAHL
Phenomenon of interest	I	Patent safety	Segurança do paciente Patient safety	DeCS MeSH Títulos CINAHL
Context of study	Co	Teaching methods/Teaching	Educação Ensino Teaching methods Teaching	DeCS MeSH Títulos CINAHL

P- participants; I-phenomenon of interest; Co-Context of study; MeSH = controlled vocabulary from the Pubmed database; CINAHL titles = controlled vocabulary from the CINAHL database; DeCS = controlled vocabulary from the LILACS database

Source: Research data, 2018.

The search for the articles was carried out in December 2017 in the databases: Latin American and Caribbean Literature in Health Sciences (LILACS), Bibliographical Index Español en Ciencias de la Salud (IBECS) and Nursing Database (BDENF), via Virtual Health Library (VHL). Index to Nursing and Allied Health Literature (CINAHL), Medline (International Literature in Health Sciences), via Pubmed, Web of Science and SCOPUS, through the Journals Portal of the Coordination for the Improvement of Higher Education Personnel (CAPES), in area with recognized Internet Protocol (IP).

Controlled descriptors (Descriptors in Health Sciences - DeCS, Medical SubjectHeadings - MeSH and CINAHL Titles) were used and to ensure wide search, descriptors were selected from the controlled vocabularies of each database, using the Boolean operators “AND” and “ OR ”. Considering that each base has its particularities, different search strategies were chosen in each of them (Chart 2).

**Chart 2 – Search strategies on database**

<b>Database</b>	<b>Crossings</b>
LILACS/BDENF	“segurança do paciente” AND ensino OR educação AND enfermagem
MEDLINE via PUBMED	“patient safety” AND teaching AND “students, nursing”
CINAHL	“patient safety” AND “teaching methods” AND “nursing students”
WEB of SCIENCE	patient safety AND teaching AND students, nursing
SCOPUS	students, nursing AND “patient safety” AND teaching

Source: Research data, 2018.

The inclusion criteria were: articles published in journals that addressed the teaching of patient safety in Nursing, in English, Portuguese or Spanish. The following were excluded: book chapters, news, reply letter, editorials, doctoral theses, master's dissertations, technical reports, review articles, those studies in duplicate and that did not answer the research question. It should be noted that there was no limitation on the year of publication of the articles.

Selection was made by reading the title and summary of publications, excluding those that clearly did not address the issue in this review and maintaining those in which there was certainty or doubt. After exhaustive reading of each publication in its entirety, those that definitely did not address the issue of this review were excluded.

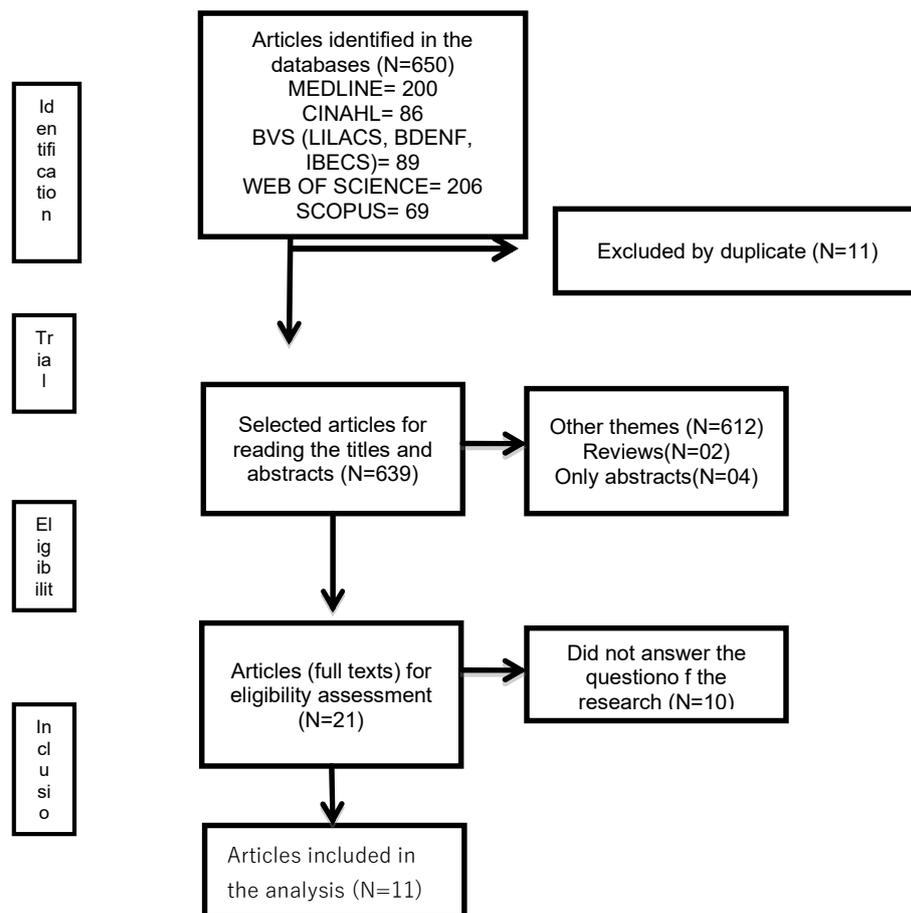
For data extraction, a form containing the variables of interest was used: database, journal, authors, article title, year of publication, language, country of origin of the publication, objective, method, results, conclusions and level of evidence.

With regard to the underlying concepts, it is noteworthy that the teaching method was defined in this study as actions by the teacher by which teaching activities and students are organized to achieve teaching work objectives in relation to a specific content <sup>(17)</sup>; and that the definition of strategy was established as the art of applying or exploring the favorable and available means and conditions, with a view to achieving specific objectives <sup>(18)</sup>.

The classification of the level of evidence suggested by Melnyk and Fineout-Overholt<sup>(19)</sup> was used, which considers: I - evidence from systematic review or meta-analysis of trials from relevant randomized clinical trials or from clinical guidelines based on systematic reviews of clinical trials controlled randomized trials; II - evidence from at least one well-designed randomized controlled clinical trial; III - evidence from well-designed clinical trials without randomization; IV - evidence from well-designed cohort and case-control studies; V - evidence from a systematic review of descriptive and qualitative studies; VI - evidence from a single descriptive or qualitative study; VII - evidence from the opinion of authorities and/or the report of expert committees.

The publication selection process was carried out in three stages. In the first stage, there was the exclusion of duplicate publications in the databases, giving preference to the inclusion of the article in the first database in which it was found; thus, out of the total 650, 11 were removed. In the second stage, the titles and abstracts of the remaining 639 publications were read, excluding those ones that clearly did not address the issue of this review and maintaining those in which there was certainty or doubt. In this stage, 21 articles remained. In the third stage, after exhaustive reading of each remaining publication in its entirety, those ones that definitely did not address the issue of this review are excluded, so that the final sample consisted of 11 articles. Figure 1 illustrates the selection process of the articles in this integrative review, which followed the PRISMA recommendations <sup>(20)</sup>.

**Figure 1** - Flowchart of identification, screening, eligibility and inclusion of articles in the integrative literature review



Source: Research data, 2018.

The analysis and synthesis of the data extracted from the articles was carried out in a descriptive manner, thus, making it possible to observe, to count, to describe and to classify the data, in order to gather the knowledge produced on the theme explored in the review <sup>(15)</sup>. The articles included in this review were classified into two thematic categories: method and strategy for teaching patient safety in Nursing and the importance of knowledge and inclusion of the topic in the curriculum of Nursing courses.

The study was not submitted to the Research Ethics Committee, as it does not deal with research involving human beings.

## RESULTS

Out of the 11 articles analyzed, five (46%) are from the United States <sup>(21,22,24,25,29)</sup>, three (27%) from the United Kingdom, two (18%) from Australia, one (9%) from the South Korea. Regarding the language, eleven (100%) are in English. The most frequent designs were: quantitative descriptive, qualitative descriptive and intervention. The articles were published between 2007 and 2017, with publications prevailing in the years 2014 and 2016, three and four in each year, respectively. With regard to the bases, both CINAHL and SCOPUS had four articles analyzed each, followed by WEB OF SCIENCE with two, MEDLINE with only one. It should be noted that after the article selection process, the IBECS, BDNF and LILACS databases did not have articles included in the final sample. The level of evidence for most articles was VI (Chart 3).

**Chart 3** – Characteristics of the articles included in the review

<b>Article/Author (Year)</b>	<b>Database/Country of origin</b>	<b>Type of study/Level of evidence</b>	<b>Objective</b>	<b>Method and Strategy for teaching patient safety in Nursing</b>
A1- Cantrell MA, Mariani B, Meakim C (2016) <sup>(21)</sup>	WEB OF SCIENCE (United States)	Intervention Study (Level III)	To enhance students' knowledge about safety principles through simulation.	Simulation
A2 - Maxwell KL, Wright VH (2016) <sup>(22)</sup>	CINAHL (United States)	Control group study (pre-test and post-test) (Level IV)	To evaluate educational strategies for teaching quality and safety for nursing students	Online and flipped classroom modules
A3 - Mansour M, Skull A, Parker M(2015) <sup>(23)</sup>	SCOPUS (United Kingdom)	Control group study (pre-test and post-test) (Level IV)	To assess the impact of teaching on the Patient Safety Curriculum Guide on the knowledge and attitudes of Nursing students.	Lectures and group discussion

<b>Article/Author (Year)</b>	<b>Database/Country of origin</b>	<b>Type of study/Level of evidence</b>	<b>Objective</b>	<b>Method and Strategy for teaching patient safety in Nursing</b>
A4 - Henneman, EA, Cunningham, H, Roche, JP, Curnin, ME (2007) <sup>(24)</sup>	SCOPUS (United States)	Experimental Study (Level II)	To expose nursing students to a variety of clinical safe environments.	Simulation
A5 - Von der Lancken S, Levenhagen K(2014) <sup>(25)</sup>	MEDLINE (United States)	Qualitative approach study (Level VI)	To describe a model for promoting patient safety among students	Simulation
A6 - Hewitt, J, Tower, M, Latimer, S (2015) <sup>(26)</sup>	CINAHL (Australia)	Qualitative approach study (Level VI)	To examine the effectiveness perceived by nursing students of educational intervention on errors and adverse drug events.	Problem-based learning / discussion
A7 - Lee, NJ, Jang, H, Park, SY. (2016) <sup>(12)</sup>	CINAHL (South Korea)	Quantitative approach study Descriptive study (Level VI)	To examine bachelor's degree programs in nursing to determine what patient safety education is like.	Simulation / lecture
A8 - Cresswell, K., Howe, A., Steven, A., Smith, P., Ashcroft, D., Fairhurst, K. et al. (2013) <sup>(14)</sup>	CINAHL (United Kingdom)	Qualitative approach study (Level VI)	To investigate the formal and informal ways that medical, nursing, pharmacy and physiotherapy students learn about patient safety.	Supervised practice with analysis of significant events
A9 - Steven, A, Magnusson, C, Smith, P, Pearson, P H. (2014) <sup>(27)</sup>	WEB OF SCIENCE (United Kingdom)	Exploratory descriptive study (Level VI)	To explore the formal and informal ways that nursing students learn about patient safety.	Observation

<b>Article/Author (Year)</b>	<b>Database/Country of origin</b>	<b>Type of study/Level of evidence</b>	<b>Objective</b>	<b>Method and Strategy for teaching patient safety in Nursing</b>
A10 - Latimer S, Hewitt J, Stanbrough R, McAndrew R(2017) <sup>(28)</sup>	SCOPUS (Australia)	Intervention study (Level III)	To describe teaching strategies aimed at increasing students' awareness of medication errors and prevention approaches.	Expository class / high fidelity simulation / e-learning packages / case studies / courses / videos
A11- Headrick, L. A., Barton, A. J., Ogrinc, G., Strang, C., Aboumatar, H. J., Aud, M. A et al. (2012) <sup>(29)</sup>	SCOPUS (United States)	Intervention study (Level III)	To improve patient safety in the curricula of medical schools and nursing.	Classroom learning activities/clinical practice/simulation

Source: Research data, 2018.

## DISCUSSION

The results of this review revealed that there are no Brazilian studies on how to teach patient safety in Nursing. This is justified by the fact that the insertion and attempt to unify the contents on patient safety are recent propositions in Brazilian schools and thus are not part (or were recently inserted) of the curricular matrix of Nursing courses<sup>(13)</sup>.

Regarding the language, it was observed that all were in English. This finding was related to the databases, in which the articles were found (SCOPUS, MEDLINE, CINAHL, WEB OF SCIENCE) which require articles in the English language and demonstrate that the subject should be more widespread in Spanish and Portuguese speaking countries.

Regarding the design, descriptive and intervention studies prevailed. All of them presented results of research carried out in higher education institutions in order to emphasize the quality of teaching patient safety, through questionnaires and analysis of relevant factors that involved the theme.

Another aspect observed, referred to the subjects addressed in the curricular matrix that involved the teaching of patient safety, such as: adverse events associated with surgical procedures and other invasive procedures, medication errors, prescription process, distribution and administration and use of technology to minimize them, among others<sup>(14,21-29)</sup>.

## Method and strategy for teaching patient safety in nursing

Simulation was the most used teaching strategy, evidenced by scenarios of sharing lessons learned that provide an opportunity for care management before reaching the patient <sup>(21)</sup>.

In an intervention study developed with 175 nursing students, simulation was used through a triple approach, involving the visualization of a pre-recorded scenario, in which safety practices were violated and another scenario of safe practices. In the evaluation of the students, the simulation was positive <sup>(21)</sup>.

In the United Kingdom, the research revealed that simulation is a key strategy for learning, as it combines theory and practice, offering students the opportunity to learn better through simulated experiences, in addition to helping students to act in difficult situations that can compromise the safety of patients in the practice field <sup>(23)</sup>. Qualitative study developed in the United States corroborated this information by highlighting simulation as a key element in the preparation of students, and its addition to the curriculum is valuable, reinforcing the meaning of developing collaborative relationships to promote safe care <sup>(25)</sup>.

Research in Australia observed a set of teaching strategies applied through videos that simulate clinical environments as a first experience for students, before the usual practice in a hospital environment. Thus, the authors highlighted that discussions by teachers are necessary to help students identify factors that contribute to patient safety as students <sup>(28)</sup>.

An experimental study carried out in the United States exposed students to a variety of simulation scenarios in order to raise their awareness of safe care. When used correctly, simulation offers a unique opportunity to teach nursing students important patient safety principles. It also found that there is little practical information available to help guide educators who are interested in adopting this technology <sup>(24)</sup>.

Learning through online modules and flipped classroom was also highlighted. The first intervention had a greater effect in increasing students' knowledge about improving the quality of patient safety <sup>(22)</sup>.

Still as an educational intervention, a survey conducted in South Korea with 206 students found that most of the respondents had received education on patient safety, but not in undergraduate subjects, only through lectures that were given during the course. This fact demonstrates that the insertion of the patient safety theme in the curriculum matrices is incipient <sup>(12)</sup>.

It is noticed that almost all articles (10/11) list teaching and learning strategies. The teaching method was mentioned only in the study carried out in Australia with 28 nursing students who used Problem Based Learning (PBL) to demonstrate complex and multidisciplinary factors of failures related to medication administration. This activity allowed an exchange of knowledge between educators and students, making them take their skills to clinical practice, making such resources effective in demonstrating the complexity of medication-related errors <sup>(26)</sup>.

Strategies such as simulation (12,21,24,25,28,29), conducting supervised practice with analysis of significant events, reflections on care practice (14), observation (27), videos (28), lectures, discussion (23,26), classroom exposure (28,29), online modules (22,28) were found in the analyzed articles. They disseminate the importance of these strategies for teaching patient safety regarding the inclusion of the theme in the curricula, demonstrating that in order to insert it, it is necessary to adopt measures that contribute to a better quality of teaching such as the use of active methods (12, 22,23,26,27).

### **The importance of knowledge and inclusion of the theme in the curriculum of nursing courses**

This category reveals that most of the articles exposed the importance of the knowledge of nursing professors and students and the inclusion of the theme in the curriculum of Nursing courses since the beginning of the academy (23).

In view of this, it was observed the relevance of the professionals' knowledge as teaching facilitators, as corroborated in a study carried out in South Korea with the objective of evaluating educators' competences for teaching patient safety. It found that educators had a relatively low level of skill and knowledge on the subject, in which participants reported educational needs about medication and infection prevention. Thus, this study emphasizes that professors must be qualified to teach patient safety to future nurses (30).

Therefore, nursing educators have a challenging task, not only to incorporate quality in safety education in their curricula, but also to develop skills in their students such as situational awareness, reasoning and clinical judgment, teamwork and effective interpersonal communication and, thus, clearly teaching preventive attitudes, helping to avoid something that may occur in the future (31). Thus, according to professional regulations, teaching should increasingly focus on efforts to ensure that professionals are competent and able to teach and practice safe care (14).

Corroborating, a study carried out in the United Kingdom pointed out that there must be an effort, on the part of nursing educators, in guaranteeing updated and relevant knowledge for students, and challenging them to consider safety in a holistic way, encouraging them to think beyond the patient safety checklist. In this way, such students are invited to reflect on the true risk for the patient and, in an effective way, to contribute to their safe care (32).

However, all health professionals must be qualified to offer patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, as well as, approaches that guarantee the improvement of the quality of care (29).

In order to improve the teaching of patient safety, it is necessary to insert the subject in the curricula of nursing courses. The teaching of patient safety is fragmented and lacks deepening and conceptual breadth, as recommended by the World Health Organization guide, requiring a revision of the curricula to contemplate an interdisciplinary and transdisciplinary approach to the development of this theme (12).

In view of the above, it is proposed that the nursing curricula should be revised and innovated based on the engagement of all actors involved (students, educators, health

leaders and managers), so that they strive to improve the culture of patient safety in teaching and learning environments <sup>(31)</sup>.

In a survey conducted in the United Kingdom, with the aim of exploring the formal and informal ways in which medical, nursing, pharmacy and physical therapy students learn about patient safety, they reported that it was not visible as a curricular theme, and thus it needs a greater relationship and dialogue between education and the organization of health services, so that an effective teaching-learning process can occur <sup>(14)</sup>.

However, it can be understood, through detailed analysis, that the articles only address the issue of teaching aimed at professionals and undergraduates, be they Nursing students or from other courses in the health area (Pharmacy, Physiotherapy and Medicine). It can be seen that the insertion of the subject in undergraduate curricula is important not only for nursing, but also for health courses, as patient safety involves a tangle of actions that include a multidisciplinary team in order to ensure safe care, free of damage to the patient in general <sup>(14)</sup>.

According to data from the “Nursing Profile in Brazil” survey, conducted in 2015, the nursing team is composed of 80% technicians and assistants and 20% nurses <sup>(33)</sup>. In this sense, the absence of studies involving the technical course in nursing is emphasized demonstrating an urgent need to expose the theme and studies that reveal how the scenario of teaching patient safety in this public, which represents the largest workforce, presents itself for Brazilian nursing and needs to have adequate training to exercise safe patient care.

## FINAL CONSIDERATIONS

It was found that there is a gap in national studies on the subject of this review. It was also possible to verify that the inclusion of patient safety in the curricular matrix contributes to a more solid formation of the Nursing student, guaranteeing subsidies for safe care. The strategies and methods such as: simulation, supervised practical classes with analysis of significant events, case studies, videos, discussion in the classroom help in the insertion of patient safety teaching in this process.

The study may contribute to planning methods and strategies for teaching patient safety in Nursing. It is suggested the insertion of this topic in the curricular matrix of Nursing courses, as well as the adoption of effective teaching methods and strategies to improve the quality of patient safety teaching, as it became evident that during graduation students have few subjects that focus on this topic. In addition, training for professionals in these courses should also be carried out, in order to enable them to discuss patient safety teaching with competence and quality.

As for the limitations, it was observed that the majority of the researches obtained level of evidence IV, in addition to the existence of few specific studies on teaching in professional training in Nursing, which hindered further comparisons and deepening on the subject. Further studies are recommended, allowing the expansion and production of reliable scientific evidence so that the subject can be carefully investigated and, consequently, there is an improvement in the quality of patient safety

education in professional nursing education through effective methods and strategies for learning.

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