

# Patient safety in nursing technician training

*Segurança do paciente na formação de técnicos de enfermagem*

*Seguridad del paciente en la formación de técnicos de enfermería*

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## ABSTRACT

**Objectives:** to analyze the contents on patient safety in the training of nursing technicians. **Methods:** a documentary study, conducted in three technical nursing courses at a public university in northeastern Brazil, based on the Multi-Professional Patient Safety Curriculum Guide, published by the World Health Organization. **Results:** we found that, of the 26 subjects in each course, the tracking terms were found in 22 subjects in the A/C courses, 23 in the B course. The topics of the guide with the highest number of terms were the improvement in medication safety, with 85 terms (22.6%), and Infection prevention and control, with 75 terms (20%). The contents do not express the comprehensiveness of patient safety education; some subjects had this focus, while others did not. **Conclusions:** the documents revealed gaps in the contents related to patient safety and demonstrated that they are addressed only in the course syllabus and discipline plans.

**Descriptors:** Nursing Technicians; Patient Safety; Nursing Education; Nursing Technical Education; Curriculum.

## RESUMO

**Objetivos:** analisar os conteúdos sobre segurança do paciente na formação de técnicos de enfermagem. **Métodos:** estudo documental, realizado em três cursos técnicos de enfermagem de uma universidade pública do Nordeste brasileiro, com base no *The Multi-professional Patient Safety Curriculum Guide*, publicado pela Organização Mundial da Saúde. **Resultados:** constatou-se que, das 26 disciplinas em cada curso, os termos rastreadores encontraram-se em 22 disciplinas nos Cursos A/C; 23 no Curso B. Os tópicos do guia com maior quantidade de termos foram: Melhora na segurança da medicação, com 85 termos (22,6%); e Prevenção e controle da infecção, com 75 termos (20%). Os conteúdos não expressam a integralidade do ensino de segurança do paciente; algumas disciplinas tinham esse enfoque, enquanto outras, não. **Conclusões:** os documentos revelaram lacunas quanto aos conteúdos relacionados à segurança do paciente e demonstraram que são abordados apenas nos ementários e planos de disciplina.

**Descritores:** Técnicos de Enfermagem; Segurança do Paciente; Educação em Enfermagem; Educação Técnica em Enfermagem; Currículo.

## RESUMEN

**Objetivos:** analizar contenidos sobre seguridad del paciente en la formación de técnicos de enfermería. **Métodos:** estudio documental, realizado en tres cursos técnicos de enfermería de universidad pública del Nordeste brasileño, basado en *The Multi-professional Patient Safety Curriculum Guide*, publicado por la Organización Mundial de la Salud. **Resultados:** constató que, de las 26 asignaturas en cada curso, los términos rastreadores encontraron en 22 asignaturas en los Cursos A/C; 23 en el Curso B. Tópicos del guión con mayor cantidad de términos fueron: Mejora en la seguridad de la medicación, con 85 términos (22,6%); y Prevención y control de la infección, con 75 términos (20%). Los contenidos no expresan la integralidad de educación de seguridad del paciente; algunas asignaturas tenían ese enfoque, mientras otras no. **Conclusiones:** documentos revelaron lagunas cuanto a los contenidos relacionados a la seguridad del paciente y demostraron que son abordados apenas en los sumarios y planes de asignatura.

**Descriptorios:** Enfermeros no Diplomados; Seguridad del Paciente; Educación en Enfermería; Graduación en Auxiliar de Enfermería; Currículo.

## INTRODUCTION

Health professionals have responsibilities on carrying out procedures in patient care, since any malpractice can prolong the time of hospitalization or cause irreversible damage. Worrying data, raised by the World Health Organization (WHO), estimates that 4% to 16% of patients hospitalized in developed countries are subject to malpractices. In an attempt to reduce these rates, the WHO created the World Alliance for Patient Safety in 2004, now called The Patient Safety Program, which established proposals to health professionals to reduce the risk of harm to an acceptable minimum<sup>(1-2)</sup>.

In the Brazilian context, the Ministry of Health published Ordinance No. 529 on April 1, 2013, which instituted the National Patient Safety Program (PNSP), intending to provide qualified assistance at the various levels of health care. One of the implementation strategies of this ordinance aims to include the topic "patient safety" in the curricula of Health Professionals of Technical, Higher, and postgraduate level, although it does not present details or strategies of how to operationalize this inclusion<sup>(3)</sup>.

Considering this concern, the World Health Organization has developed the Multiprofessional Patient Safety Curriculum Guide, a multi-professional guide that has strategies to insert the topic of patient safety in the pedagogical proposals of educational institutions. In this guide, we find information that serves as a design for teachers to reformulate the curricular proposal of the courses<sup>(4)</sup>.

The literature determines the need to include the topic "patient safety culture" in the curricula of health courses, especially nursing, although these publications concern higher-level courses: Nursing, Medicine, Physiotherapy, Pharmaceutical, Speech Therapy and Dentistry<sup>(5-8)</sup>.

A cross-sectional study conducted with practical nurses in Canada showed the need for patient safety education for professionals of this level<sup>(9)</sup>. However, the publications that deal with this issue and are aimed at middle-level professionals, specifically nursing technicians, are scarce, so there is no discussion about the problem at this level of Education.

This problem deserves to be highlighted due to the evidence that the nursing team is mostly made up of nursing technicians and assistants (77%), who are in direct care to patients and, therefore, have responsibility for quality in health<sup>(10)</sup>. Thus, nursing technicians are protagonists in actions that favor patient safety due to the fundamental and uninterrupted participation in care processes<sup>(11)</sup>.

For this reason, the following guiding question emerged: "How is patient safety addressed in the training of nursing technicians?" The study about the instruction on patient safety for this professional category is sustained by the possibility of listing gaps in the training process. Also, we consider that the nursing technical professional, besides the technical skills, needs to have the technical and scientific framework for the benefit of good care practices to reduce adverse events<sup>(11)</sup>.

## OBJECTIVES

To analyze the contents on patient safety in the training of nursing technicians.

## METHODS

### Ethical aspects

The study was approved by the Research Ethics Committee of the proposing institution, observing the ethical principles and postulates, following the resolution of the National Health Council (CNS) No.466/2012. In this study, the courses were identified by the letters A, B, and C, to maintain anonymity and secrecy regarding the identity of the institutions.

### Design, period and place of study

A documentary study was conducted from January to June 2019 in three technical nursing courses linked to a public university in the Northeast region of Brazil. For this purpose, we developed a document research protocol based on a reference framework<sup>(12)</sup> composed of the following strategies: reading the course documents, search for tracer terms, correlation of the terms identified in the records with the 11 topics of the WHO Guide, Multi-Professional Patient Safety Curriculum Guide, investigation of the presence or absence of tracer terms in the analyzed documents, and interpretative synthesis.

### Population or sample; criteria of inclusion and exclusion

We constituted the following documents as the population of this study: pedagogical project (PP), course syllabus, menus, and discipline plans. Through tracer terms, we sought mentions of the topic "patient safety" in this documentation for the composition of the sample for this study.

To select the documents, we carried out a careful analysis of the items to ensure research, authenticity, and reliability, that is, to present information in the study that represented the reality of the subjects regarding the object of analysis.

### Study protocol

We collect the material formally requesting it directly with the Coordination of the courses, in an official letter to the educational institutions. We found the PPs on the website of the educational institution responsible for the colleges, and the discipline plans and course syllabus obtained in the course coordination team.

The collection of patient safety themes occurred through the identification of tracer terms contained in the documents and marked by a checklist, translated and validated by educators and health researchers<sup>(12)</sup>, in light of the theoretical framework provided in the Multi-Professional Patient Safety Curriculum Guide<sup>(4)</sup>, with adequacy and pertinence of the terms, contents and tracer terms. We aggregated these terms for each of the 11 topics in this guide, totaling 153 tracking terms — likely topics addressed in patient safety teaching<sup>(5)</sup>.

To achieve this phase, we followed the same strategy proposed by the author of the checklist<sup>(12)</sup>, in which we initially carried out a detailed reading of the content of the selected documents to identify the tracking terms.

## Analysis of results and statistics

For analysis of the material, we prepared a sheet to specify the type of document analyzed and the result found. In case the document was available in the format .doc, it was accessed through Microsoft Word®, and, in the case of Portable Document Format (PDF), through Adobe Acrobat®. We applied the search tool "Find" to the 153 tracking terms and their variations, such as singular and plural spelling, compound words with conjugated search<sup>(12)</sup>.

In the Microsoft Excel® program, we did a manual organization, followed by double-entry typing. The data was then exported to the statistical software Statistical Package for the Social Sciences – SPSS, for Windows (version 21.0). We performed the descriptive statistics with a relative and absolute frequency of terms. The results were discussed based on the Multi-Professional Patient Safety Curriculum Guide, published by the World Health Organization<sup>(4)</sup> in 2011, emphasizing the 11 topics of the guide.

## RESULTS

After searching for the tracking terms, we found mentions of the topic "patient safety," specifically in the course syllabus and discipline plans. The analysis indicated that the topic was not considered a skill to be developed in the pedagogical projects and curricular matrices of the three courses evaluated.

Table 1 presents the distribution of absolute and relative frequencies identified in the documents analyzed of the nursing technical courses. Overall, of the 26 subjects in each course, we found the tracking terms in 22 subjects in the A/C courses, and 23 subjects in the B course. Regarding distribution, the topics that presented the highest number of terms in the three courses were number 11 (improvement in medication safety), with 85 terms (22.6%) in total, and number 9 (Prevention and control of infection), with 75 terms (20%) in the three courses.

Of the 26 subjects analyzed in Course A, those of Anatomy and Human Physiology, First Aid, Research Notions, Technical

**Table 1** - Absolute and relative frequencies of the 11 topics of the Curriculum Guide of the World Health Organization (2011) on patient safety, in the disciplines of nursing technical courses

Guide topics	Course A n = 127		Course B n = 139		Course C n = 109		Total N = 375	
	n	%	n	%	n	%	n	%
1 - What Is Patient Safety?	5	3.9	6	4.3	4	3.7	15	4.0
2 - Reasons why the application of human factors are important for Patient Safety	2	1.6	10	7.2	6	5.5	18	4.8
3 - Understanding of systems and the effect of complexity on patient care	14	11.0	16	11.5	8	7.3	38	10.1
4 - Be a participant of an effective team	18	14.2	10	7.2	14	12.8	42	11.2
5 - Learning from mistakes to avoid damage	0	0	1	0.7	0	0	1	0.3
6 - Understanding and managing clinical risks	12	9.4	23	16.5	6	5.5	41	10.9
7 - Use of quality improvement methods to improve care	2	1.6	1	0.7	2	1.8	5	1.3
8 - Interaction with patients and caregivers	12	9.4	6	4.3	12	11.0	30	8.0
9 - Infection prevention and control	26	20.5	19	13.7	30	27.5	75	20.0
10 - Patient safety and invasive procedures	9	7.0	20	14.4	6	5.5	35	9.3
11 - Improved medication safety	27	21.3	27	19.4	21	19.3	85	22.6

Portuguese did not mention the topic "patient safety." We observed that, of the 11 topics of the Multi-Professional Patient Safety Curriculum Guide, topics 9 (Infection prevention and control) and 11 (improvement in medication safety) were the most widespread in the disciplines. Topic 5 (learning from mistakes to avoid harm) was the only one not included in the disciplines according to Chart 1.

**Chart 1** - Characterization of the content "patient safety" in the subjects of course A

Disciplines	Period	Content found in document analysis based on tracking terms	Guide Topics*
Human Anatomy and Physiology	I	-	-
Education for Self-care	I	32, 89, 111	3, 8, 9
Research Notions	I	-	-
Fundamentals of Nursing I	I	27, 111, 119, 133, 134, 147	3, 9, 11
Organization of the Work Process in Nursing	I	22, 34, 35, 39, 42, 68, 90, 95, 127	2, 4, 6, 8, 10
Collective Health I	I	25, 103, 104, 10	3, 9
Microbiology, Parasitology and Immunology	I	102, 106, 114, 118, 135	9, 11
Technical Portuguese	I	-	-
Fundamentals of Nursing II	II	1, 12, 13, 27	1, 3
Collective Health II	II	103, 105, 118, 140, 144	9, 11
Epidemiology	II	25, 35, 76, 127	3, 4, 7, 10
Adult Health I	II	27, 42, 68, 90	3, 4, 6, 8
Notions of Pharmacology	II	4, 133, 134, 136, 140, 143, 145, 146, 147	1, 11
First Aid	II	-	-
Women's Health	III	21, 27, 100, 101, 102	2, 3, 9

To be continued

Chart 1 (concluded)

Disciplines	Period	Content found in document analysis based on tracking terms	Guide Topics*
Perioperative Assistance I	III	26, 27, 30, 42, 68, 90, 107, 112, 116, 120, 132	3, 4, 6, 9, 10
Occupational Safety and Health	III	34, 56, 60, 64	6
Adult Health	III	145	11
Neonatal Unit	III	27, 42, 68, 90, 118, 134, 147	3, 4, 6, 8, 9, 11
Notions of Administration in Health Services	III	26, 34, 35, 39, 40, 44, 76, 89, 128,	3, 4, 7, 8, 10
Patient in Serious Condition	IV	64, 134	3, 6, 11
Health of the Elderly	IV	42, 68, 90, 95, 111	4, 6, 8, 9
Urgency and Emergency	IV	25, 54, 134, 147	3, 6, 11
Mental Health	IV	35, 42, 68, 90, 95, 134, 140, 147, 146	4, 6, 8, 11
Perioperative Assistance II	IV	4, 101, 102, 106, 111, 122, 123, 121, 132, 134, 140, 147	1, 9, 10, 11
Child and Adolescent Health	IV	26, 42, 68, 90, 118	3, 4, 6, 8, 9

\* 11 topics from the Multi-Professional Patient Safety Curriculum Guide.

Of the 26 subjects analyzed in course B, First Aid, Technical Portuguese, and Notions of Research and Nursing did not mention the topic "patient safety." The other disciplines highlighted more the safety of the medication and the understanding and management of clinical risks. Most of the topics of the guide were

covered, although those of number 5 (learning from mistakes to avoid damage) and 7 (using quality improvement methods to improve care) were cited only once. The most cited topics were 11 (improvement in medication safety) and 6 (understanding and management of clinical risks), according to Chart 2.

Chart 2 - Characterization of the content "patient safety" in the subjects of course B

Disciplines	Period	Content found in document analysis based on tracking terms	Guide Topics*
Organization of the Work Process in Nursing	I	21, 27, 36	2, 3, 4
Human Anatomy and Physiology	I	16	2
Education for Self-care	I	32, 89	3, 8
Collective Health I	I	25, 101, 103, 105	3, 9
Microbiology, Parasitology and Immunology	I	103, 104, 105, 118, 144	9, 11
Notions of Nursing Research	I	-	-
Technical Portuguese	I	-	-
Basic Fundamentals of Nursing I	I	1, 13, 21, 26, 33, 64, 124, 136, 137, 140, 147, 152, 153	1, 2, 3, 6, 10, 11
Collective Health II	II	22, 34, 68, 89, 95, 118	2, 6, 4, 8, 9
Epidemiology	II	34, 35, 36	4
Basic Fundamentals of Nursing II	II	21, 151	1, 2, 11
First Aid	II	-	-
Adult Health I	II	22, 26, 42, 55, 58, 59, 63, 68, 120	2, 3, 4, 6, 8, 9
Notions of Pharmacology	II	4, 133, 134, 138, 139, 140, 143, 147, 151	1, 11
Perioperative Assistance I	III	27, 102, 123, 132	3, 9, 10
Notions of Administration in Health Services	III	26, 27, 32, 33, 40, 42, 55, 63, 64, 66	2, 3, 4, 6
Adult Health II	III	100, 101, 102, 106, 110, 117, 120	9, 10
Occupational Safety and Health	III	19, 27, 44, 63, 64, 111	2, 3, 4, 6, 9
Neonatal Unit	III	22, 30, 42, 54, 59, 63, 66, 68, 118	2, 3, 4, 6, 9
Women's Health	III	27, 120, 121, 122, 123, 128	3, 9, 10
Perioperative Assistance II	IV	18, 112, 120, 121, 122, 123, 128, 129, 130	2, 9, 10, 11
Assistance to patients in serious condition	IV	14, 30, 55, 58, 59, 100, 120, 122, 128, 137, 140, 146, 153	1, 3, 6, 9, 10, 11
Mental Health	IV	4, 14, 52, 95, 136, 137, 138, 140, 151, 153	1, 5, 8, 10, 11
Urgency and Emergency	IV	27, 134	3, 11
Health of the Elderly	IV	68, 79, 90	6, 7, 8
Child and Adolescent Health	IV	20, 68, 90	1, 3, 6, 8

\* 11 topics from the Multi-Professional Patient Safety Curriculum Guide.

**Chart 3** - Characterization of the content "patient safety" in the subjects of the course C

Disciplines	Period	Content found in document analysis based on tracking terms	Guide Topics*
Microbiology, Parasitology and Immunology	I	64, 114, 135, 103, 105, 118	6, 9, 11
Basic Fundamentals of Nursing I	I	26, 64, 1, 148, 93, 101, 109, 119, 112	1, 6, 8, 9
Notions of Nursing Research	I	-	-
Organization of the Work Process in Nursing	I	118, 101, 34, 35, 39, 93, 95, 127, 22, 42, 68, 90	3, 4, 6, 8, 10
Education for Self-care	I	32, 111, 100, 101, 102, 106	3, 9
Human Anatomy and Physiology	I	-	-
Collective Health I	I	93, 89, 101, 104, 109, 103, 105	8, 9
Occupational Safety and Health	I	111, 17, 1, 13	1, 2, 9
Technical Portuguese	I	-	-
Epidemiology	II	76	7
Adult Health I	II	26, 42, 85	3, 4, 8
Basic Fundamentals of Nursing II	II	93, 147, 21	2, 8, 11
First Aid	II	-	-
Collective Health II	II	118, 103, 105, 89	8, 9
Notions of Pharmacology	II	147, 140, 134, 139, 142, 143, 144, 146	11
Notions of Administration in Health Services	III	77, 64, 34, 127, 43, 26, 40, 44	3, 4, 6, 7, 10
Adult Health II	III	-	-
Neonatal Unit	III	26, 42, 133, 147, 118, 21	2, 3, 4, 9, 11
Perioperative Assistance I	III	129, 26, 112	3, 9, 10
Women's Health	III	86	8
Child and Adolescent Health	IV	54, 42	4, 6
Health of the Elderly	IV	42	4
Mental Health	IV	95, 42, 133, 140, 147	4, 8, 11
Assistance to the Patient in Serious Condition	IV	26, 21, 133	2, 3, 11
Perioperative Assistance II	IV	121, 122, 123, 100, 101, 106, 133, 147, 111, 4, 140	1, 9, 10, 11
Urgency and Emergency	IV	26, 64, 42, 22, 94, 134	2, 3, 6, 8, 11

\* 11 topics from the Multi-Professional Patient Safety Curriculum Guide.

Of the 26 subjects analyzed in course C, Human Anatomy and Physiology, Technical Portuguese, Research Notions, Adult Health II, and First Aid did not have any mention of the topic "patient safety." Topic 7 (Use of quality improvement methods to improve care) was cited twice among the subjects of course C. The most-reported were: 9 (Infection prevention and control) and 11 (Patient safety and invasive procedures). Topic 5 (Learning from mistakes to avoid harm) was not referenced in the subjects of this course (Chart 3).

## DISCUSSION

The data showed that Patient Safety has not yet been fully incorporated into the training of nursing technicians, mainly due to the absence of the topic in the PPs and course syllabus identified in the three courses evaluated. We considered that patient safety is a transversal topic that must permeate all the training of nursing professionals<sup>(13)</sup>, and its non-approach in PPs compromises the conceptual deepening of this topic, making each discipline/teacher value only those aspects that it considers specific to the training it wants to offer<sup>(8)</sup>.

Even in the documents in which we identified the approach to patient safety (Course Syllabus and Discipline plans), the training

of nursing technicians showed to be indirect and fragmented. Therefore, the results showed that this topic is not explicitly addressed in the documents in due breadth and depth, i.e., the tracking terms refer only indirectly to the topic.

Given the impact on global discussions, particularly in the last two decades, patient safety is manifested discreetly in health curricula, requiring attention regarding the training of these professionals<sup>(14-17)</sup>. This deficiency constitutes incompatibility concerning the principles of curriculum construction and even concerning the description in the code of ethics of nursing professionals<sup>(18)</sup>.

The implicit and fragmented way and the limited reference to patient safety in the documentation investigated may compromise the professional profile of the students since the curricula must ensure the appropriate conditions to achieve the standards of clinical performance<sup>(4,16,19)</sup>. These aspects are necessary for the training of nursing technicians to prioritize care as safely as possible.

Thus, this insufficiency is not acceptable since the Unified Health System (SUS) is currently guided by the Reference Document of the National Patient Safety Program, based on the Patient Safety Curriculum Guide about the duty to train health professionals sensitive to this topic<sup>(3)</sup>.

The 11 topics of the WHO Curriculum Guide obtained heterogeneous representations in the courses, highlighting the items related to clinical and technical aspects, concerning the topics "Infection control" and "Safety in drug administration." The terms related to management and mistakes obtained the lowest percentages, demonstrating a gap in these aspects so important to ensure quality and safety in care.

We found that nursing technical training in Brazil has presented weaknesses, both in the specific aspects related to patient safety and in the general scope. As evidence, a study conducted in public and private institutions in the states of Rio de Janeiro and São Paulo that offer the nursing technical course showed that the training of this professional has a technical direction, distancing itself from the principle of humanization in care<sup>(20)</sup>. In this perspective, we observed that the technical teaching in nursing turned its attention basically to the preparation of graduates to perform technical procedures<sup>(21)</sup>.

Regarding the characterization of patient safety content in the disciplines of each course, the findings demonstrated convergences of disciplines in which the terms were not recorded. The subjects First Aid, Notions of Research, Technical Portuguese did not obtain a reference to a term tracker in the three technical courses while Anatomy and Human Physiology did not obtain a term tracker in courses A and C. In turn, Adult Health II did not obtain a reference in course C.

The fact that we do not find tracer terms in the disciplines Notions of Research and Technical Portuguese can be expected due to the specificities of these and because they are introductory. However, concerning the disciplines First Aid and Adult Health II, the absence of tracking terms on Patient Safety revealed the need to review and insert topics in these course syllabus, more urgently and effectively, since these work aspects related to direct care with patients, from the perspective of maintaining life and minimizing complications<sup>(22)</sup>. In addition, we emphasize that the topic "patient safety" should be transversal in the curricula of health professionals, i.e., for this, all disciplines should address the topic<sup>(23)</sup>.

Considering the documents examined (Table 1) regarding the identification of terms in correlation with the 11 topics recommended by the WHO curriculum guide, it was evident in Courses a and C that items 9 and 11 ("prevention and control of infection" and "improvement in medication safety," respectively) were the most widespread in the disciplines. Topic 5 (Learning from mistakes to avoid harm) was not covered in the subjects of courses A and C. Given these findings, we understand that the more frequent identification of the items on "infection prevention and control" and "drug safety" is because they are topics that are part of the activities with which nursing technicians are directly involved and for which they should receive training<sup>(7,24-26)</sup>.

On the other hand, the fact that the topic of learning from mistakes has not been referenced by the courses cited may have outcomes in how nursing technicians perceive mistakes, analyze adverse events, and classify the types of mistakes, which may contribute to practice the punitive patient safety culture. Therefore, we must think about including this item in the training of these future professionals<sup>(13,27-28)</sup>.

These data corroborate findings of research conducted to study the curricula of four courses in the health area of the Federal

University of São Paulo to identify convergences and divergences regarding the content on patient safety. In this study, the most explored topic was "Infection prevention and control," present in 37 (15.4%) curricular units, for a total of 240. In addition, the tracking terms related to the fifth topic, "learning from mistakes to avoid damage," were also not identified in the analyzed PPs<sup>(12)</sup>.

As for Course B, the most cited topic was the 11 (Improvement in medication safety), with 27 (19.4%) references. Topic 5 (Learning from mistakes to avoid damage) was mentioned once, obtaining the lowest index when compared to the other topics in the course. There is a positive aspect regarding the prevalent quantitative of topic 11 in the PP evaluated. Such recurrence is fundamental since the nursing technician, in particular, is the professional category with greater involvement in the manipulation of the drug administration process for it has a greater possibility of acting in the Prevention of complications<sup>(29)</sup>.

On the other hand, the insufficient identification of the fifth topic brings once again the reflection on the importance of inserting mistake-based learning to promote an efficient safety culture so that professionals are aware of the role they play in reducing harm<sup>(30)</sup>.

The result found in the analysis of this topic is worrying since there was no allusion to the essential components for mistake recognition. Thus, it is necessary that such contents are better disseminated and effectively processed in the analyzed courses so that students can have a clear view of the systemic component of mistakes in training and be able to prevent them. And, if they occur, that they can use them as learning to avoid harmful situations in the future. Therefore, as this aspect presented fragility, it should be explored by teachers and students.

### Limitations of the study

The study has limitations in terms of the sample, as we included documents referring to the technical nursing course from only one educational institution. Therefore, it is necessary to carry out future work that includes analysis of records of educational institutions with other characteristics, in addition to studies with documents from institutions that have this content foreseen in the training of nursing technicians.

### Contributions to the area

The topic explored in this research is recent, so there are few studies published on students of Nursing and patient safety technical courses. Thus, the knowledge produced in this work can contribute to the training of future nursing technicians, making them promoters of safety culture. In addition, this research can encourage discussions about teaching patient safety, supporting the reflection and planning of nursing technical education, and the construction of essential skills for a safe and quality care.

### CONCLUSIONS

The analysis of the documents revealed gaps in the training of nursing technicians regarding the contents related to patient safety. Moreover, it showed implicit, punctual, and disjointed approach. Thus, we noted the need for transversality of the topic,

as well as an articulation of knowledge, especially concerning teaching, research, and extension.

Therefore, an interdisciplinary approach in the nursing technical course can minimize the weaknesses and difficulties in training

related to patient safety. To this end, it is essential to contribute to the preparation of sensitive and aware professionals about the topic presented, which will have a direct reflection on the quality of the assistance provided.

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