

PATIENT SAFETY IN CLINICAL PRACTICE OF NURSING STUDENTS: KNOWLEDGE AND ATTITUDES

SEGURANÇA DO PACIENTE NA PRÁTICA CLÍNICA DOS ESTUDANTES DE ENFERMAGEM: CONHECIMENTOS E ATITUDES

SEGURIDAD DEL PACIENTE EN LA PRÁCTICA CLÍNICA DE LOS ESTUDIANTES DE ENFERMERÍA: CONOCIMIENTOS Y ACTITUDES

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Objective: to measure the knowledge and attitudes of nursing students about patient safety in fields of practice developed in hospital units. **Method:** cross-sectional and quantitative research, conducted in a private university center in the capital of Paraná. The Latino Students Patient Safety Questionnaire was applied to 26 students between June and August 2022. Data were analyzed by descriptive statistics. Items/questions with ≥ 4 points score indicate satisfactory result. **Results:** of the 21 statements, 57.1% were considered unsatisfactory. Awareness of individual error, safety standards adopted by the institution and the impossibility of avoiding most clinical errors obtained the lowest averages (2.7 each). The items of the proactive attitude dimension to avoid safety risk were satisfactory (≥ 4 points). **Conclusion:** students present a proactive attitude to avoid safety risk, although there are gaps in knowledge about patient safety in practical fields.

Descriptors: Knowledge. Students, Nursing. Patient Safety. Hospitals. Clinical Clerkship.

Objetivo: mensurar os conhecimentos e atitudes de estudantes de enfermagem sobre segurança do paciente em campos de prática desenvolvido em unidades hospitalares. *Método:* pesquisa transversal e quantitativa, realizada em um centro universitário privado da capital paranaense. Foi aplicado o Latino Students Patient Safety Questionnaire a 26 estudantes entre os meses de junho e agosto de 2022. Os dados foram analisados por estatística descritiva. *Itens/questões com escore ≥ 4 pontos indicam resultado satisfatório* Resultados: das 21 afirmativas, 57,1% foram consideradas insatisfatórias. A consciência do erro individual, das normas de segurança adotadas pela instituição e da impossibilidade de evitar a maioria dos erros clínicos obtiveram as menores médias (2,7 cada). Os itens da dimensão atitude proativa para evitar risco à segurança apresentaram-se satisfatórios (≥ 4 pontos). *Conclusão:* os estudantes apresentam atitude proativa para evitar risco à segurança, embora haja lacunas de conhecimento acerca da segurança do paciente em campos práticos.

Descritores: Conhecimento. Estudantes de Enfermagem. Segurança do Paciente. Hospitais. Estágio Clínico.

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Objetivo: medir los conocimientos y actitudes de estudiantes de enfermería sobre seguridad del paciente en campos de práctica desarrollado en unidades hospitalarias. Método: investigación transversal y cuantitativa, realizada en un centro universitario privado de la capital paranaense. Se aplicó el Latino Students Patient Safety Questionnaire a 26 estudiantes entre los meses de junio y agosto de 2022. Los datos fueron analizados por estadística descriptiva. Ítems/cuestiones con puntaje ≥ 4 puntos indican resultado satisfactorio Resultados: de las 21 afirmativas, 57,1% fueron consideradas insatisfactorias. La conciencia del error individual, de las normas de seguridad adoptadas por la institución y de la imposibilidad de evitar la mayoría de los errores clínicos obtuvieron las menores medias (2,7 cada una). Los ítems de la dimensión actitud proactiva para evitar riesgo a la seguridad se presentaron satisfactorios (≥ 4 puntos). Conclusión: los estudiantes presentan actitud proactiva para evitar riesgo a la seguridad, aunque hay lagunas de conocimiento acerca de la seguridad del paciente en campos prácticos.

Descriptor: Conocimiento. Estudiantes de Enfermería. Seguridad del Paciente. Hospitales. Prácticas Clínicas.

Introduction

Patient safety (PS) is conceptualized as a set of coordinated activities that facilitate the construction of cultures, processes, procedures and safe behaviors among health professionals. It is supported by technologies and environments in which strategies are applied to consistently and sustainably reduce risks, errors and adverse events to the minimum acceptable⁽¹⁾. It is one of the attributes of the quality of care and gained notoriety after the publication of the report To Err is Human, of the Institute of Medicine (IOM), which estimated 44,000 to 98,000 deaths from errors during patient care, mostly preventable⁽²⁻³⁾.

Thus, actions were imposed to raise awareness and evaluate safety tactics for health facilities⁽⁴⁾. However, ensuring safe practices has been an arduous task and a global challenge, even with the support of the World Health Organization (WHO) and its States member, after the creation of the World Alliance for PS⁽²⁾. It is estimated that, in high-income countries, one in 10 patients suffer adverse events during hospital care. About 134 million events occur in hospitals located in low- and middle-income countries, contributing to approximately 2.6 million deaths annually. The social cost of harm to the patient can be evaluated between US\$ 1 to 2 trillion per year⁽¹⁾.

Based on the above, it is assumed that, to reduce errors and adverse events, investments are necessary to train/qualify health professionals to build safety culture at individual and collective level, with a view to transforming behaviors and attitudes that may contribute to reducing clinical

risk and, successively, negative outcomes for hospitalized patients⁽⁵⁾. Nevertheless, it is observed that the teaching of PS does not contemplate the contents in a structured, objective, comprehensive and standardized way, which denotes important learning gaps, especially because it is considered a cross-sectional content of the other curricular components⁽⁶⁾.

In the process of training health professionals, including nursing professionals, there is an incipience of incorporating key concepts, attitudes and skills necessary to safely practice procedures and stimulate care improvements⁽⁷⁾. The development of skills of nurses for risk management and PS, such as teamwork and collaboration, leadership and patient-centered care are increasing demands to minimize the probability of care error⁽⁵⁾. Nursing education institutions are jointly responsible for instilling skills in PS to nursing students, whose purpose is to induce them to offer good care practices and ensure safe and quality care⁽⁸⁾.

In Brazil, through Ordinance n. 529/2013, the Ministry of Health launched the National Program of PS (NPPS), and one of its objectives is the inclusion of the theme in the teaching-learning process of health professionals⁽⁹⁻¹⁰⁾. In the meantime, some strategies are undertaken to assist the inclusion of the theme in nursing curricula. One of them was the publication by the WHO of the PS Curriculum Guide: Multiprofessional Edition, designed to help educational institutions to implement educational

practices for the training of students, whose objective is to encourage them to become qualified professionals, future providers and leaders in health services⁽¹¹⁾.

The PS Global Action Plan⁽²⁰²¹⁻²⁰³⁰⁾ reinforces the need to train and develop health team skills as a way to build safer health and nursing systems and care⁽⁴⁾. Although the teaching-learning process in the theme needs to involve all professional categories, it is recognized that the nursing team concentrates the largest number of workers in health services⁽¹²⁾, being relevant to assess knowledge and attitudes about PS acquired by nursing students who are in practical fields of the hospital area. Its purpose is to propose continuous improvements in the training process and to protect patients against potential damages arising from clinical care practice⁽¹³⁾.

Therefore, the following question arose: What is the knowledge and attitude about patient safety of nursing students in hospital practice fields?

The objective of this research was to measure the knowledge and attitudes of nursing students about patient safety in fields of practice developed in hospital units.

Method

This is a cross-sectional research with a quantitative approach, conducted in a private university center in Curitiba, between the months of June and August 2022. The curricular matrix of the nursing course is five years and the content about PS is addressed transversally in the curriculum, added to the offer of lectures and extracurricular courses in the theme.

The target population consisted of 40 students enrolled in the 10th period of the graduate course, identified through a list provided by the coordination of the course, consisting of the name and e-mail of the students. All were invited to participate in the research, corresponding to an intentional and non-probabilistic sample.

Inclusion criteria were: being a student of the course regularly enrolled at night, being

attending the compulsory curricular internship in urgency and emergency and/or intensive care unit and/or child and adolescent health and/or health management and nursing, of the respective curricular matrix of the course. Those absent or who had some physical and/or digital limitation self-declared to answer the questionnaire were excluded. After applying the established criteria, 26 students accepted to participate in the study and none were excluded from the analysis.

The recruitment of the participants took place online, carried out by the main researcher, with the sending of a single and individual invitation by e-mail, in order to inform them about the purpose, objective and method used in the research. To those who expressed interest in participating in the research, an electronic form was made available by the Google Forms[®] platform, composed of two parts: Informed Consent Form (ICF) and the data collection instrument.

The opening of the form contained a link that gave the participant access to the ICF (part A), with the possibility of downloading the form. After clarification of doubts, the assent/consent was performed when the participant selected the option *I agree to participate voluntarily in the research*, allowing the participant to access and continue in the research (part B).

Part B consisted of a questionnaire containing sociodemographic variables (sex, age, professional occupation and time of work) and the Latino Students Patient Safety Questionnaire (LPSSQ)⁽¹⁴⁾, translated and validated in its content for use in Brazil⁽¹³⁾. The LPSSQ is a self-administered questionnaire, composed of 21 statements aimed at measuring knowledge, attitudes and practices developed during training and hospital internship, distributed in five dimensions: Openness in communication with patients; Proactive attitude to avoid safety risk; Awareness of error; Understanding the human factor; and Complexity of systems and their interrelationships. The questions are answered by a five-point Likert scale: ⁽¹⁾ strongly disagree; ⁽²⁾ disagree; ⁽³⁾ neither agree, nor disagree; ⁽⁴⁾ agree; and ⁽⁵⁾ strongly agree⁽¹³⁻¹⁴⁾.

Each dimension of the LPSSQ is evaluated by the mean score of the statements that compose it, and values ≥ 4 points indicate a satisfactory result⁽¹³⁻¹⁴⁾. The data was exported to a spreadsheet in the Microsoft Office Excel® 2016 program. After analysis of possible inconsistencies, the data were analyzed by descriptive statistics, in which the quantitative variables were described by mean and standard deviation (SD), and the qualitative variables, by absolute frequency (n) and relative frequency (%).

To comply with Resolution n. 466/2012, the research was approved by the Research Ethics Committee of the Paraná Institute of Otorhinolaryngology, under Opinion n. 5,486,554. To ensure anonymity, nursing students were identified as the letter E, followed

by the numeral for the delivery of the online questionnaire (E1, E2...E26).

Results

The participants were 26 nursing students, all female and mean age, in years, of 28.7 (SD \pm 8.9). Eleven (n=42.3%) had no professional experience in the health area, and, in relation to those who were already inserted in health services, 30.8% (n=8) reported performing paid extracurricular internship, 23.1% (n=6) were nursing technicians and 3.8% (n=1), pharmacy assistant.

Half of the participants reported having participated in discussions and contextualization about PS during the training process. Table 1 shows the distribution of knowledge and attitudes of students about PS during training and in practical fields of the hospital area.

Table 1 – Distribution of knowledge and attitudes of nursing students inserted in practical fields in the hospital area, according to patient safety dimensions. Curitiba, Paraná, Brazil, 2022. (N=26)

(continued)

| Dimension | % of answers | | | | |
|--|--------------|--------------------|-----------------------------|-----------------------------------|----------------------------|
| | Mean | Standard Deviation | Agree/ Strongly agree n (%) | Disagree/ Strongly disagree n (%) | Neither agree nor disagree |
| Frankness in communicating with patients | | | | | |
| I learned the correct way to provide information to patients who have suffered harm or injury because of an error. | 3.5 | 0.9 | 18 (69.2) | 6 (23.1) | 2 (7.7) |
| During the internship, I learned to assess risks that could compromise patient safety. | 4.0 | 0.7 | 24 (92.3) | 2 (7.7) | - |
| In the internship, I learned what I should do if I make a mistake. | 3.5 | 1.0 | 19 (73.1) | 5 (19.2) | 2 (7.7) |
| During the internship, I had the opportunity to discuss with my tutors or preceptors any unsafe conditions that I may have observed. | 3.6 | 1.2 | 19 (73.1) | 4 (15.4) | 3 (11.5) |
| During my training, I acquired skills on how to correctly report an error to my co-workers and superiors. | 3.3 | 1.0 | 13 (50) | 5 (19.2) | 8 (30.8) |
| During my training, I worked on the feelings I might experience in case I make a mistake. | 3.4 | 0.9 | 15 (57.7) | 5 (19.2) | 6 (23.1) |
| I learned how to communicate better with patients to avoid medication errors. | 4.0 | 0.6 | 22 (84.6) | - | 4 (15.4) |

Table 1 – Distribution of knowledge and attitudes of nursing students inserted in practical fields in the hospital area, according to patient safety dimensions. Curitiba, Paraná, Brazil, 2022. (N=26)

(continued)

| Dimension | % of answers | | | | |
|--|--------------|--------------------|--------------------------------------|--|-------------------------------------|
| | Mean | Standard Deviation | Agree/ Strongly agree n (%) | Disagree/ Strongly disagree n (%) | Neither agree nor disagree |
| At the hospital where I did my internship, a non-punitive culture was promoted, so that, if an error occurred, we knew how to prevent it from happening again. | 3.0 | 1.0 | 7 (26.9) | 8 (30.8) | 11 (42.3) |
| Proactive attitude to avoid safety risks | | | | | |
| During my studies, I received explanations about what I should do to avoid the most frequent mistakes and ensure patient safety. | 4.1 | 0.5 | 24 (92.3) | - | 2 (7.7) |
| During my internship, I learned that when a mistake happens, measures must be taken to ensure it does not happen again. | 4.0 | 0.9 | 22 (84.6) | 2 (7.7) | 2 (7.7) |
| Professors discuss the most common mistakes in class and show us ways to avoid them. | 4.2 | 0.4 | 26 (100) | - | - |
| During my training, professors explained to us the objectives and priorities for making healthcare safer. | 4.2 | 0.5 | 24 (92.3) | - | 2 (7.7) |
| Awareness of error | | | | | |
| During my internship, on at least one occasion, I did something that was not safe for the patient. | 2.7 | 1.3 | 9 (34.6) | 15 (57.7) | 2 (7.7) |
| During my internship, I saw a co-worker do something that was not safe for the patient. | 3.3 | 1.2 | 17 (65.4) | 8 (30.8) | 1 (3.8) |
| During my internship, I saw professionals do something that was not safe for the patient. | 4.0 | 1.1 | 20 (77) | 3 (11.5) | 3 (11.5) |
| Understanding the human factor | | | | | |
| In the health services, where I carried out my internships, they explained to me the safety standards adopted for patients. | 2.7 | 1.0 | 6 (23.1) | 12 (46.1) | 8 (30.8) |
| Professors emphasized the importance of following protocols for better health care. | 4.1 | 0.7 | 24 (92.3) | 2 (7.7) | - |
| During the internship, the importance of making adequate use of therapeutic resources was emphasized for patient safety. | 3.5 | 0.9 | 15 (57.7) | 4 (15.4) | 7 (26.9) |
| Professors emphasized the importance of washing the hands. | 4.3 | 0.6 | 24 (92.3) | - | 2 (7.7) |
| The complexity of systems and their interrelationship | | | | | |
| During my internship, I observed that it is impossible to avoid most clinical errors. | 2.7 | 1.0 | 7 (26.9) | 14 (53.9) | 5 (19.2) |

Table 1 – Distribution of knowledge and attitudes of nursing students inserted in practical fields in the hospital area, according to patient safety dimensions. Curitiba, Paraná, Brazil, 2022. (N=26)

(conclusion)

| Dimension | % of answers | | | | |
|---|--------------|--------------------|--------------------------------------|--|-------------------------------------|
| | Mean | Standard Deviation | Agree/ Strongly agree n (%) | Disagree/ Strongly disagree n (%) | Neither agree nor disagree |
| During my internship, I observed that the protocols applied to ensure patient safety are outdated (obsolete). | 3.0 | 1.0 | 7 (26.9) | 9 (34.6) | 10 (38.5) |

Source: Created by the authors.

Note: Conventional sign used:

- Numerical datum equal to zero not resulting from rounding.

Discussion

The data showed that the only dimension strengthened with all items with a score ≥ 4 was the proactive attitude to avoid safety risk, similar to that found in an investigation with 786 medical and nursing students in clinical training in Spain and in four Latin American countries (Chile, Colombia, El Salvador and Guatemala), which showed satisfactory knowledge in this field⁽¹⁴⁾.

In this research, a favorable result in issues related to the prevention of human errors and adverse events with the adoption of actions that aim to avoid the occurrence of these injuries in health services, possibly is the result of the commitment of professors to teach PS theoretical-practical content in a cross-sectional way, specifically in professional disciplines and contemplated in the current curricular matrix. This finding is an important advance for the training of the generalist nurse, because previous research carried out in the same educational institution, in 2019, showed weaknesses in conceptual and attitudinal aspects related to human error and PS among nursing students⁽¹⁵⁾.

Moreover, the execution of an extension course about the subject in 2020, in which there was the participation of all students in the investigated class, may have contributed to more favorable results in this dimension. It is

recognized that the inclusion of specific contents in the nursing graduate curriculum, in addition to meeting the recommendations of the WHO and the NPPS, contributes to the students' ability to learn skills, mature the safety culture and reduce the negative outcomes resulting from less safe and low-quality processes experienced in hospital internships and later in the professional career⁽¹⁶⁾.

There is scientific evidence that reinforces the need for a formal and equitable approach to content about PS in different curricular units during nurse training, including the application of interdisciplinary strategies by all professors⁽¹⁷⁾, including among the preceptors of the area. Despite this, in this research, there was little communication/discussion between students and preceptors in the identification of any condition of insecurity observed in the practical fields. This fact is corroborated by a cross-sectional study, conducted with 139 nursing students from a Community University in Southern Brazil, which showed that less than half of the participants answered that they communicate to the professor about the presence of conditions that may lead to error⁽¹⁸⁾.

Given the different risk scenarios of the hospital environment, it is appropriate to improve communication between professors, preceptors and students, given that it is a promoter element for the dissemination of risk and adverse events,

as a way to subsidize decision-making, adopt corrective measures to avoid recurrence of the disease and promote the provision of excellent care. This circumstance should be considered in the nursing training curricula, as well as the importance of the elaboration, updating and appropriate use of manuals, guidelines, protocols of safety tools that aim to ensure quality of care and develop effective behaviors and attitudes for a safe practice⁽¹⁹⁾.

The professors in the classroom discuss the prevalent errors, point out measures to prevent them, discuss objectives and priorities to make health care safer and emphasize the importance of following protocols to improve care. However, there is a distancing of nursing students about knowledge and previous explanations by preceptors in relation to the protocols and standards of PS of the internship granting units, which reinforces the challenge and the need to approach and integrate academia and health services, in particular sectors such as continuing education and the Patient Safety Center (PSC), so that actions that enhance the advancement of safety and quality of care be articulated⁽¹⁹⁾.

PS standards/protocols are measures aimed at ensuring quality care, promoting improvements in health care and encompassing actions to reduce risks to the patient. The student must have knowledge about the norms and put them into practice. Given that these students will be responsible for maintaining the PSC, it is necessary to approach them to the protocols and institutional manuals, from the period of vocational training, to design quality care, with a view to adopting a safe culture in practical fields and in the course of their future careers⁽²⁰⁾.

Moreover, such training will encourage them to be more involved and aware of the process and activities relevant to the chosen profession and to recognize their leadership role and multiplier of proactive ideas to promote PS. In addition, it allows these students to reflect on the facilitators and the barriers to adherence of these protocols by health institutions, especially in view of the difficulties encountered in the operationalization of strategies to promote quality of care in

Brazilian hospitals, such as inadequate staffing and lack of support from senior management in policy directives to the theme⁽²¹⁾.

Unfavorable results were found in items related to the correct form of reporting errors and adverse events to patients to other health workers and managers, in line with what was found among medical students from Pakistan⁽²²⁾. Socializing the occurrence of an error or adverse event to the patient, professionals and family is an arduous task, especially in environments with a preponderant guilt and punitive culture.

The difficulty of the health team to admit a mistake and have awareness about their own mistakes is evident, including during the training process, as evidenced in this research, where students have more easily recognized the less safe practices of peers and professionals than their own individual behaviors. Educating nursing students about the recognition of errors is essential to promote a safety notification culture, enabling them to actively participate in the resolution of systemic problems after graduation, as a way of contributing to safe assistance⁽²³⁾.

Nursing schools collaborate with cultural change, replacing punishment with a just and learning culture⁽²⁴⁾. In fact, they are essential to prepare students with skills necessary to minimize the occurrence of errors and incidents, and, if they occur, provide satisfactory knowledge, so that they are aware of what happened and the correct way to explain the problem to all victims.

However, the disclosure of errors and adverse events to patients and relatives is little explored in the curricula of training of health professionals. One of the strategies to improve this aspect is the multimodal educational simulation, with the objective of instructing the team in relation to the disclosure of errors⁽²⁵⁾. Furthermore, appropriating the use of active methodologies can be useful, mainly, to understand the complexity of health services and the expressive need for behavioral changes of nurses to minimize the gap between the real care and the ideal, considering that the traditional model of nursing education barely meets these contemporary demands of professional training⁽²⁶⁾.

As evidenced in this research, the fact that students have low awareness of their own mistakes and have difficulties to report them can be a reflection of how these contents are incorporated in the institutional pedagogical project and how they are worked in the various disciplines by different professors. Considering that this knowledge gap directly interferes with the voluntary notification of incidents, essential for the maturation of the culture of learning after the occurrence of these problems, the need to advance in this regard and specifically insert approaches that address this issue in the training of professors and in the training curriculum of nurses.

In the meantime, the need to overcome the fragmentation of disciplinary knowledge strongly marked in nursing teaching in traditional principles is reinforced. Incorporating the integrated curriculum is imperative, because it is a structured model, in which basic and professional knowledge dialogue with each other and between their peers (teaching, service and community), enhancing the implementation of an integrated, interdisciplinary and consolidated training base to transform nursing practice⁽²⁷⁾.

Working the content in a contextualized way with interdisciplinary and/or transdisciplinary focus and structuring, in a continuous and systematized way, realistic simulation activities with integration of theoretical and practical contents allow providing meaning to complex knowledge, enrich the training process and expressively build critical students facing the health demands experienced by the population and the structural and care problems of labor practice.

In addition, to strengthen the relations between academia and health services in which students develop their curricular internships, especially with nurses and other professionals who work in PSC and continuing education, can contribute to the restructuring of pedagogical policy projects, in order to provide the future nursing professional with the necessary skills to provide safer, patient-centered care and the principles of the Unified Health System.

The limitations of this research focus on the study in a single reality of professional training and in relation to the limited number of participants, preventing generalizing the results obtained. Despite these limits, the results indicate the need to invest in content that encompasses the PS during academic training in the institution researched from the basic disciplines, because there are still weaknesses in the teaching process learning in important issues to promote the quality of health care and nursing.

This research contributes to highlight the need to rethink the process of training the generalist nurse in issues relevant to PS within the mold of traditional education. Since it is a cross-sectional content in most nursing training curricula, the lack of specific theoretical and methodological reference that can guide the teaching-learning process of professors, preceptors and students in the subject collaborates to educational challenges and less translation of this specific knowledge into clinical practice.

Conclusion

The knowledge of nursing students was favorable to the *Proactive attitude to avoid risk to safety* dimension. However, there were gaps in teaching and learning, especially awareness of individual error, perception before the impossibility of avoiding most clinical errors, and the lack of approximation with the safety standards adopted by the institution and the insipidity of information about the correct way of reporting errors and adverse events to the patient and family members.

Collaborations:

- 1 – conception and planning of the project: Karina da Silva Parise and Josemar Batista;
- 2 – analysis and interpretation of data: Karina da Silva Parise and Josemar Batista;
- 3 – writing and/or critical review: Karina da Silva Parise and Josemar Batista;
- 4 – approval of the final version: Karina da Silva Parise and Josemar Batista.

Competing interests

There are no competing interests.

References

- World Health Organization. Global Patient Safety Action Plan 2021-2030: towards eliminating avoidable harm in health care [Internet]. Geneva (CH); 2021 [cited 2022 Mai 22]. Available from: <https://iris.who.int/bitstream/handle/10665/343477/9789240032705-eng.pdf?sequence=1>
- Sousa AR, Silva HS, Santos NVC. Competencies with an emphasis on patient safety during nursing training. *REVISIA*. 2021;10(4):656-69. DOI: <https://doi.org/10.36239/revisa.v10.n4.p656a669>
- Pierre MS, Grawe P, Bergstrom J, Neuhaus C. 20 years after To Err Is Human: A bibliometric analysis of 'the IOM reports' impact on research on patient safety. *Saf sci*. 2022;147:105593. DOI: <https://doi.org/10.1016/j.ssci.2021.105593>
- Wegner W, Silva SC, Kantorski KJC, Predebon CM, Sanches MO, Pedro ENR. Education for culture of patient safety: Implications to professional training. *Esc Anna Nery*. 2016;20(3):e20160068. DOI: [10.5935/1414-8145.20160068](https://doi.org/10.5935/1414-8145.20160068)
- Dionisi S, DI Muzio M, Giannetta N, DI Simone E, Gallina B, Napoli C, et al. Nursing students' experience of risk assessment, prevention and management: a systematic review. *J Prev Med Hyg*. 2021;62(1):E122-31. DOI: [10.15167/2421-4248/jpmh2021.62.1.1698](https://doi.org/10.15167/2421-4248/jpmh2021.62.1.1698)
- Siqueira HCH, Cecagno D, Medeiros AC, Sampaio AD, Weykamp JM, Pedrosa VMS, et al. Insertion of teaching of safety in the academic training of nurses. *Rev enferm UFPE on line*. 2019;13:e239822. DOI: [10.5205/1981-8963.2019.239822](https://doi.org/10.5205/1981-8963.2019.239822)
- Wu AW, Busch IM. Patient safety: A new basic science for professional education. *GMS J Med Educ*. 2019;36(2):Doc21. DOI: [10.3205/zma001229](https://doi.org/10.3205/zma001229)
- Eskici GT, Kanig M, Ugur E, Seren AKH. The Turkish version of the Patient Safety Competency Self-Evaluation Tool: A validity and reliability study. *Nurse Educ Pract*. 2021;57:103229. DOI: [10.1016/j.nepr.2021.103229](https://doi.org/10.1016/j.nepr.2021.103229)
- Rute RCR, Bezerra MAR, Martins BMB, Nunes BMVT. Teaching patient safety in nursing: integrative review. *Enf Global*. 2021;20(4):700-43. DOI: [10.6018/eglobal.441691](https://doi.org/10.6018/eglobal.441691)
- Brasil. Ministério da Saúde. Portaria Nº 529, de 1º de abril de 2013. Institui o Programa Nacional de Segurança do Paciente (PNSP). [Internet]. Brasília (DF); 2013 [cited 2022 set 20]. Available from: https://bvsmis.saude.gov.br/bvsmis/saudelegis/gm/2013/prt0529_01_04_2013.html
- Pontifícia Universidade Católica do Rio de Janeiro. Guia curricular de segurança do paciente da Organização Mundial da Saúde: edição multiprofissional [Internet]. Rio de Janeiro: Autografia; 2016 [cited 2022 Mai 21]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/44641/9788555268502-por.pdf?sequence=32>
- World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership [Internet]. Geneva (CH); 2020 [cited 2023 Jul 10]. Available from: <https://www.who.int/publications/i/item/9789240003279>
- Menezes AC, Penha CS, Amaral FMA, Pimenta AM, Ribeiro HCTC, Pagano AS, et al. *Latino Students Patient Safety Questionnaire: adaptação transcultural para estudantes brasileiros de enfermagem e de medicina*. *Rev Bras Enferm*. 2020;73(Suppl 6):e20190621. DOI: [10.1590/0034-7167-2019-0621](https://doi.org/10.1590/0034-7167-2019-0621)
- Mira JJ, Navarro IM, Guilbert M, Poblete R, Franco AL, Jiménez P, et al. A Spanish-language patient safety questionnaire to measure medical and nursing students' attitudes and knowledge. *Rev Panam Salud Publica* [Internet]. 2015 [cited 2022 Dec 18];38(2):110-9. Available from: <https://scielosp.org/article/rpsp/2015.v38n2/110-119/>
- Moraes SL, Marcondes L, Almeida AE, Koller FJ, Silva DP, Batista J. Nursing students' knowledge regarding human error and patient safety. *Rev Enferm UFSM*. 2020;10:e84. DOI: [10.5902/2179769241144](https://doi.org/10.5902/2179769241144)
- Çiftcioglu Ş, Apaydin CV, Efe E. Student nurses' perceptions of a patient safety culture: A descriptive and cross-sectional study. *Perspect Psychiatr Care*. 2022;58(2):658-63. DOI: [10.1111/ppc.12830](https://doi.org/10.1111/ppc.12830)
- Garzin ACA, Melleiro MM. Safety in the training of health professionals. *Cienc Cuid Saude*. 2019;18(4):e45780. DOI: [10.4025/ciencuidsaude.v18i4.45780](https://doi.org/10.4025/ciencuidsaude.v18i4.45780)
- Greco PBT, Souza MM, Luz EFM, Ongaro JD, Almeida CS, Kirchoff RS, et al. Patient safety in

- understanding nursing students of a community university. *Rev Enferm Atenção Saúde*. 2021;10(2):e-202116. DOI: 10.18554/reas.v10i2.4382
19. Cauduro GMR, Magnago TSBS, Andolhe R, Lanes TC, Ongaro JD. Patient safety in the understanding of health care students. *Rev Gaúcha Enferm*. 2017;38(2):e64818. DOI: 10.1590/1983-1447.2017.02.64818
 20. Rezende H, Vitorio AMF, Morais AS, Garzin ACA, Nicole AG, Quadrado ERS, et al. Effectiveness of educational interventions to develop patient safety knowledge, skills, behaviours and attitudes in undergraduate nursing students: a systematic review protocol. *BMJ Open*. 2022;12(3):e058888. DOI: 10.1136/bmjopen-2021-058888
 21. Reis GAX, Oliveira JLC, Ferreira AMD, Vituri DW, Marcon SS, Matsuda LM. Difficulties to implement patient safety strategies: perspectives of management nurses. *Rev Gaúcha Enferm*. 2019; 40(esp):e20180366. DOI: 10.1590/1983-1447.2019.20180366
 22. Kamran R, Bari A, Khan RA, Al-Eraky M. Patient safety awareness among Undergraduate Medical Students in Pakistani Medical School. *Pak J Med Sci*. 2018;34(2):305-9. DOI: 10.12669/pjms.342.14563
 23. Song MO, Yun SY, Jang A. Patient safety error reporting program for future undergraduate nursing education: A scoping review protocol. *Plos One*. 2022;17(8):e0273737. DOI: 10.1371/journal.pone.0273737
 24. Palese A, Gonella S, Grassetti L, Mansutti I, Brugnolli A, Saiani L, et al. Multi-level analysis of national nursing students' disclosure of patient safety concerns. *Med Educ*. 2018;52(11):1156-66. DOI: 10.1111/medu.13716
 25. Krumwiede KH, Wagner JM, Kirk LM, Duval TM, Dalton TO, Daniel KM, et al. A Team Disclosure of Error Educational Activity: Objective Outcomes. *J Am Geriatr Soc*. 2019;67(6):1273-77. DOI: 10.1111/jgs.15883
 26. Furtado AF, Marcondes L, Lenhani BE, Batista J. Knowledge of nursing students about pressure injuries: challenge for patient safety. *Rev baiana enferm*. 2019;33:e34425. DOI: 10.18471/rbe.v33.34425
 27. Gomes DF, Cavalcante APS, Ponte Neto OA, Dias MSA, Vasconcelos MIO. Currículo integrado nos bacharelados na área da saúde: um estudo das evidências científicas. *Saúde Transform Soc [Internet]*. 2019 [cited 2023 Jul 15];10(1,2,3):209-17. Available from: <https://incubadora.periodicos.ufsc.br/index.php/saudeetransformacao/article/view/4479>

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