DOI 10.18471/rbe.v36.45552 Original Article

PATIENT SAFETY SKILLS IN EDUCATION: PERCEPTIONS OF NURSING AND MEDICAL GRADUATE STUDENTS

COMPETÊNCIAS DE SEGURANÇA DO PACIENTE NA EDUCAÇÃO: PERCEPÇÕES DE GRADUANDOS EM ENFERMAGEM E MEDICINA

HABILIDADES DE SEGURIDAD DEL PACIENTE EN LA EDUCACIÓN: PERCEPCIONES DE LOS ESTUDIANTES DE PREGRADO EN ENFERMERÍA Y MEDICINA

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How to cite this article: Zugno RM, Tomaschewski-Barlem JG, Paloski GR, Stigger DAS, Silveira RS, Dalmolin GL. Patient safety skills in education: perceptions of nursing and medical graduate students. Rev baiana enferm. 2022;36:e45552.

Objective: to identify the perceptions of nursing and medical graduate students about patient safety competencies in the teaching-learning process. Method: this is a qualitative, exploratory-descriptive study, conducted from September to November 2019 with 24 graduate students in medicine and nursing, from a public university in southern Brazil. Data were collected through a semi-structured interview guide and analyzed by discursive textual analysis. Results: perceptions about patient safety competencies were related to the culture of safety, teamwork, effective communication, risk management, optimization of environmental and human factors, and conduct in the face of adverse events. Final considerations: students have satisfactory perceptions regarding the patient's safety competencies in their education; however, they demonstrated weaknesses in knowledge and its application in practice, especially in the action before errors.

Descriptors: Patient Safety. Competency-Based Education. Students, Nursing. Students, Medical. Interprofessional Education.

Objetivo: identificar as percepções de estudantes de graduação em enfermagem e medicina acerca das competências de segurança do paciente no processo de ensino-aprendizagem. Método: trata-se de estudo qualitativo, exploratório-descritivo, realizado de setembro a novembro de 2019 com 24 estudantes de graduação em medicina

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e enfermagem, de uma universidade pública do Sul do Brasil. Os dados foram coletados por meio de um roteiro de entrevista semiestruturada e analisados pela análise textual discursiva. Resultados: as percepções acerca das competências de segurança do paciente relacionaram-se à cultura de segurança, trabalho em equipe, comunicação efetiva, gerenciamento de riscos, otimização de fatores ambientais e humanos, e conduta diante de eventos adversos. Considerações finais: os estudantes possuem percepções satisfatórias em relação às competências de segurança do paciente na sua formação, no entanto, demonstraram fragilidades quanto ao conhecimento e sua aplicação na prática, principalmente na ação diante da ocorrência de erros.

Descritores: Segurança do Paciente. Educação Baseada em Competências. Estudantes de Enfermagem. Estudantes de Medicina. Educação Interprofissional.

Objetivo: identificar las percepciones de los estudiantes de pregrado en enfermería y medicina sobre las competencias de seguridad del paciente en el proceso de enseñanza-aprendizaje. Método: se trata de un estudio cualitativo, exploratorio-descriptivo, realizado de septiembre a noviembre de 2019 con 24 estudiantes de pregrado en medicina y enfermería, de una universidad pública del sur de Brasil. Los datos fueron recolectados a través de una guía de entrevista semiestructurada y analizados por análisis textual discursivo. Resultados: las percepciones sobre las competencias de seguridad del paciente se relacionaron con la cultura de seguridad, el trabajo en equipo, la comunicación efectiva, la gestión de riesgos, la optimización de los factores ambientales y humanos, y la conducta frente a eventos adversos. Consideraciones finales: los estudiantes tienen percepciones satisfactorias con respecto a las competencias de seguridad del paciente en su educación, sin embargo, demostraron debilidades en el conocimiento y su aplicación en la práctica, especialmente en la acción frente a errores.

Descriptores: Seguridad del Paciente. Educación Basada en Competencias. Estudiantes de Enfermería. Estudiantes de Medicina. Educación Interprofesional.

Introduction

Patient safety in teaching has been gaining prominence worldwide, once working on the theme since the training of health professionals has been shown to be efficient in reducing health errors. Thus, the importance of a look at patient safety issues in this context stems from the need for theoretical-practical aptitude, subsidized by the development of knowledge and skills, which need to be improved in daily life in an interdisciplinary way[1].

In the Brazilian context, the National Program for Patient Safety stands out, which advocates the implementation of the theme of patient safety in the field of education, going through the various educational domains, including technical, graduate and postgraduate courses in the health area[2]. However, this national initiative is recent and, therefore, weaknesses are still perceived in the teaching-learning process[3]. In this context, the importance of developing competencies for patient safety stands out, as a way to enhance the construction of future critical and reflective professionals.

The theoretical conceptions of this study are based on the notion of competence, on the fact that mobilizing skills and knowledge requires working out these themes, in addition to the availability of time, didactics and appropriate learning situations. Thus, competence is the ability to act effectively in the face of a situation, based on knowledge, but without limiting itself to them. Thus, competencies are recognized when they use, integrate and mobilize knowledge to enable relating, interpreting, interpolating, inferring, creating, intuiting and identifying, in a pertinent way, previous knowledge and problems [4].

Specifically in the teaching of patient safety, the Canadian Patient Safety Institute advocates six competencies in the training process of health professionals: safety culture; teamwork; effective communication; risk management; environmental and human factors; identification, response and dissemination of adverse events (AE). These competencies are also recommended by the World Health Organization (WHO), aiming

at the organization and curricular integration of health courses[5].

However, there are gaps in the development of these competencies among nursing and medical students. This is because, often, the training is fragmented, based on the absence of standardization of the theoretical-pedagogical approach. These occurrences highlight the need for the consolidation of knowledge in a harmonic way under a transdisciplinary holistic[3], being indispensable to deepen the issues related to the theme in teaching.

According to the multiprofessional curriculum guide of patient safety, the training of health professionals in safety is indispensable, demanding a solid foundation and supported by related concepts and guidelines. Moreover, interdisciplinarity becomes a factor of great relevance, indispensable for the perpetuation of safe care. Therefore, it is essential to incorporate the theme into the curricular bases of all students in the health field, as it significantly affects care performances in defense of the patient. In addition, it undoubtedly contributes to the recognition and effective management of the complexities that integrate the health area[6].

Nevertheless, although it is conspicuous to understand that such competencies can serve as a foundation in the process of training health professionals[6], it is a pressing need to uncover perceptions about them during the teaching-learning process. It is noteworthy that, by identifying students' knowledge about the competencies that involve patient safety in the continuum of professional training, it becomes possible to highlight the potentialities and weaknesses present in the teaching-learning process. In addition, it enables the recognition of the theoretical-practical applicability of such dimensions, fostering discussions, as well as the elaboration of strategies to ensure patient safety. Consequently, it consolidates safe health practices in a scientific, systematic, interdisciplinary and continuous way, which justifies the development of this study. Thus, the objective is to identify the perceptions of nursing and medical graduate students about patient safety competencies in the teaching-learning process.

Method

This is a qualitative, exploratory-descriptive study, conducted in a public university located in southern Brazil, in medical and nursing graduate courses, from September to October 2019.

The medical course chosen to develop the study has a total workload of 8,105 hours, whose admission occurs with the Unified Selection system, offering 74 vacancies per year. On the other hand, the nursing course has a total workload of 3,030 hours, with admission similar to that of the medical course. However, only 60 vacancies are available annually, divided between the first and second semesters. In both courses, patient safety contents are developed in a transversal way, with no specific discipline on the subject. The concepts and contents are diluted and integrated in a non-specific way in the disciplines, that is, they are not worked and discussed especially and not in an interprofessional way.

The inclusion criteria for the selection of participants in the research were: being students of one of the graduate courses and being properly matriculated in the ninth or tenth semesters of nursing or in the fifth year of medicine. Exclusion criteria were limited to the absence at the place and time of data collection. Thirty-three nursing students and 68 medical students were invited to participate in the study, who met the inclusion and exclusion criteria. The period of formation chosen includes the imminence of the graduation conclusion, allowing the identified perceptions to reflect global understandings about the theme developed, apprehended and integrated during the training process.

To select participants, non-probabilistic sampling by convenience was used, according to the presence of students at the time and at the data collection site. This was carried out through visits to the internship fields, where the students were approached. Those who expressed verbal

acceptance to participate in the study were referred to a private room of the unit, when the Informed Consent Form (ICF) was read, explained and signed in two copies, preceding the interview. The study participants were 12 nursing students and 12 medical students from the last semesters/years of their respective courses who agreed to participate in the research. In order to maintain the anonymity of the informants, the statements were identified according to the sample group, designating the letter M for medical students and the letter N for nursing students, followed by the Arabic number corresponding to the order of the interviews.

Data were collected through the application of a semi-structured interview guide, during October 2019, lasting an of 20 minutes, containing closed questions, to characterize the participants, and open questions, which addressed aspects related to patient safety competencies, contemplating the development and practical feasibility of the theme in the training context, as well as its reflexes in health praxis. The interviews were conducted and audio-recorded, authorized by the participant, by a nursing student and an MSc student, both submitted to prior training by the responsible researcher, integrating technical, operational and scientific dimensions. The transcription was typed in a Microsoft Word text-editing program by a nursing student, duly submitted to previous training by the responsible researcher, who reviewed the transcripts.

Data analysis was performed through discursive textual analysis, which aims to produce new understandings about phenomena and discourses, through a self-organized process of constructing understanding about a given phenomenon in three sequential phases: unitarization, categorization and communication[7]. In unitarization, the interviews were read in a detailed way, detailing them until units of meaning were reached. The latter arose from the deconstruction of the text, delimiting different meanings in its details, but never reaching a final limit. In the categorization, relationships were constructed between the units, gathering similar elements, in order to make combinations and classifications in certain categories[7]. For this purpose, in this stage, the a priori categorization technique was used, that is, the categories are deduced based on the theoretical assumptions that underlie the analysis; in this case, the Guide to the Canadian Patient Safety Institute - The Safety Competencies: Enhancing Patient Safety Across the Health Professions.

Thus, the categories were defined based on the domains of the competencies necessary for patient safety of the Canadian Patient Safety Institute: favoring the establishment of a safety culture, working as a team, communicating efficiently, managing risks, optimizing environmental and human factors, and identifying, responding to and disseminating AE[5].

Finally, in the communication, new understandings were described and validated, which were consolidated based on the elements of the previous stages. At that moment, the theoretical and empirical dialogue with the authors present in the theoretical conceptions of the study was present, in order to better understand the phenomena investigated[7].

This study was guided by the quality protocol of qualitative studies Consolidated Criteria for Reporting Qualitative Research (COREQ). This article derives from the MSc's dissertation "Nursing and Medical Students' Skills for Patient Safety". The ethical aspects were respected according to the precepts established in Resolution n. 466/2012, of the National Health Council, concerning the research with human beings. The project received a favorable opinion from the Research Ethics Committee of the Federal University of Rio Grande (CEP-FURG).

Results

The participants were 24 students, being 12 nursing students and 12 medical students, aged between 22 and 41 years, predominantly female. Data analysis was performed based on the six categories defined a priori, presented below: Favoring the establishment of a safety

culture; Teamwork; Communicating efficiently; Managing risks; Optimizing environmental and human factors; Identifying, responding to and disseminating AE.

Favoring the establishment of a safety culture

In this category, it was possible to evidence that students recognized the importance of learning patient safety and their attributions in promoting it, reporting the need for their approach in undergraduate studies. However, while nursing students understood the relevance of a denser approach in the training process, considering their development relevant since the beginning of graduation, medical students, predominantly, emphasized the incipience of a discussion of the theme in the teaching-learning process in an integral way.

> *Since our admission, I think it was more present in the administration chair, which I think we should see from the beginning of the course because we deal with patients since always when we go to internships* [...] (N3).

> *There was never a specific class. As we learn, regarding an examination, the technique included patient safety, but never anything specific. I think it is an area in deficit still in training*. (M12).

Moreover, the students highlighted the important role played by the professor in the reflection on the theme, favoring changes in practice, both academic and professional. The teaching methods throughout this process were cited as a support for the development of competencies that favored the establishment of a safety culture.

> *I believe that we are a key player in patient safety, because we are responsible for promoting it* [...] *when professors make us reflect on patient safety* [...] *this plays an essential role both as students and future nurses* [...] *I think the way it is worked is important because we are shaped along the graduation* [...] (N5).

In this same perspective, the students emphasized the importance of the practice. Nursing students, in a recurrent way, reported their common distancing from the theory. However, they cited it as a way to consolidate the knowledge acquired in the classroom, mainly through the observation of safe practices of other professionals.

> *I think more in theory, we do not see it in practice that much. There has already happened an event, but in practice, we do not see everything, some things, in prevention we even see, but to avoid a problem that occurred is more theoretically*. (N9).

> *Every time we see someone working properly, we tend to try to improve as well*. (N10).

Regarding the medical course, most of the students emphasized the activities in the internship fields as relevant to the development of the theme in their scope of activity:

> *There was no specific subject on the theme, I have learned much more in practice. We have never had it*. (M6).

Teamwork

In this category, it was possible to identify how teamwork was visualized by the students, contemplating different perceptions regarding their practical experiences. Regarding the nursing course, it was possible to show a recognition of the importance of interdisciplinary action, emphasizing the absence of interaction between the professional team and students throughout the training as a weakening element of the teaching-learning process, often preventing the student from being proactive in this environment.

> [...] *we often are unable to know each other in the team, which hinders visualizing many things* [...] *Many of the employees do not pay us attention, thinking that our comments are an intern thing* [...] *I think it is always important to try to address* [...] *but always approaching this with the team*. (N4).

Medical students recognized the need for joint work with other professionals. However, they reported that the biomedical model of health care was still present in professional training, hindering the establishment of teamwork in favor of patient safety. Furthermore, they perceived the distancing of the medical class as a cultural issue, which influenced safe care.

> *I think it is a flaw within the medical training. We see a lot about prescription, clinical conduct, but I think we lack the care part. So we end up understanding this as nursing's role, but I think patient safety involves the whole team*. (M1).

> [...] *we end up being left aside, not because the nursing team do not let us participate, but because there is a medical culture of not participating in all the activities in which everyone in the hospital participates, as if it were a separate job from the others. So, I see that, unfortunately, medical students are separated from all the rest of the hospital's operation*. (M3).

Communicating efficiently

The category approaches how communication was perceived in the education of students of both courses, contemplating the interprofessional dialogical relationship, as well as that established with patients, contributing to safety in the care continuum. A priori, the following reports evidenced the communication perceived between the teams as an identifying element of risks, as well as an instrument to prevent and mitigate errors:

> [...] *I think that when the team manages to maintain a dialogue with the patient, you will be able to identify some of his weaknesses, and then you can prevent some things. And among the team too* [...] (N3).

> [...] *because conversation allows arriving at a denominator and getting it, a matter of education. People can talk and decide about the best option. Decide why we are making mistakes, so it is a lot easier if you can see multiple views* [...] (M7).

Moreover, the importance of the records made by professionals as a form of multiprofessional communication stands out.

> [...] *I have been through a situation where the patient's name was not right. The patient was discharged, another was admitted, and through these mechanisms of conversation with the patient, I was able to identify that it was not the same patient* [...] *I think that both communication between the team and with the patient and family members can avoid many errors, and can make us understand the patient's clinical condition*. (N5).

Therefore, it was evidenced that the interlocution between professionals and patients was of paramount importance. Thus, the students identified it as a stimulus for the participation and co-responsibility of the patient in their care and, consequently, in their safety. It is noteworthy that the availability of the guidelines contributed to fruitful relationships, precisely due to the understanding of the latter regarding the care provided. However, the students reported that, in most cases, patients were not active in their health and disease process, mainly because they did not have access or did not understand the information passed by professionals.

> *It is important, but patient participation is rare. They often do not have the information about medications, things about their hospitalization, this does not happen. If it happened every time, it would be one more care that the patient could have with oneself*. (N4).

> [...] *I have seen cases of managing to avoid administering the wrong medication precisely because the patient knew* [...] *when they are well oriented, it is great. But, roughly speaking, 90% of our patients, I think they are very fragile, unfortunately, precisely because no one is dedicated to trying to explain more calmly to them the importance of that*. (M4)

Managing risks

Risk management is addressed in this category as a way to prevent health errors. Students, especially nursing students, cited patient safety protocols as important tools to manage risks in health institutions. In this sense, the students reported that the practical application of the protocols, after the theoretical class, contributed to the visualization of their importance. However, they highlighted that, in most units, professionals did not use them.

> *Some* [protocols] *do not happen, we do not see in the units* [...] *I see potential in relation to protocols* [...] *I think the course contributed because, for example, in the administration discipline, we went to class, took that sheet to see what the protocols were like, and went to the hospital to apply them. So you can see it* [...] (N2).

Medical students, despite visualizing some actions, were unaware of most patient safety protocols. Nevertheless, they envisioned the potential of implementation and their application in risk management in health organizations.

> *The most we had was hand washing in immunology, nothing more.* [...] *I know the safe surgery protocol because I have seen it in other places, at surgery congresses, but here at the hospital I have never seen it* [...] *I think implementing protocols is a way to minimize errors. It will not prevent all, but it improves a lot* (M2).

In general, the students also mentioned the continuous reinforcement of knowledge about protocols as a potential for establishing patient safety, in order to prepare professionals. They also highlighted the technologies that could be used to help prevent errors in the health team's work process.

> [...] *sometimes it is no use making a protocol, doing something and leaving it on paper, throwing it inside the unit, because we know that no one will read it. But working on that, working on it within the units, with the professionals* [...] *And working with different equipment and materials, to avoid mistakes that may happen* [...] (N12).

Both nursing and medical students cited learning about the error as a way to prevent new errors from occurring, especially when it was deepened during the training process. In this scenario, after the occurrence of an AE, often neglected by the professor, the students highlight it as a potential for knowledge regarding the appropriate conducts to be taken before risk situations.

> *College comes to demystify, to give an in-depth study of what each thing is, and to prove that, if there is a flaw in the process, we have to look for that flaw and correct it. So, the question of showing and evaluating that error is another way of learning* [...] (N10).

> *Generally, after the occurrence of adverse events related to patient safety, the preceptor of the area ends up addressing the issue and guiding us on what would have been the correct conduct and how to proceed, but unfortunately, not all sectors are like this and many things end up being ignored* [...] (M11).

Optimizing environmental and human factors

This category encompasses students' perception about the influence of human and environmental factors and their consequences in practices that involved patient safety. In human factors, the recognition of error and elements that showed convenience and resistance stood out. Among the environmental factors, work routines stood out. A priori, the recognition of error being perceived as fundamental was contemplated, in addition to learning from it as a way of both professional and personal growth.

> *We must be humble to admit that we make mistakes, because we are human. So I think we have to use that to grow professionally and personally.* (M12).

> *The main thing is to notify that there was an error, but to communicate the whole team, the family member and the patient.* (N1).

The convenience and resistance on the part of some professionals was highlighted as a fragility that influenced the formation, because they significantly dissociated what was learned in the classroom from what was seen in practice. In this context, questions related to the absence of a protocol followed by all professionals of the institution, as well as their little understanding, even by professors, often hampered consolidating knowledge.

> *I believe that the classes were enough, but in practice, it changes, because the professionals do not always put into practice what is taught to us in theory. So, we end up getting some vices during practical training that hinder our performance as a professional.* (M11).

> *So far, in the internship, we see some cultures of some things, of not wanting to make a dressing with a sterile procedure and not doing it sterile. There are units that are resistant to patient identification* [...] *When we saw that a technician was doing something wrong, that we did not learn that way, we could not interfere, we could not say anything.* (N8).

It is also emphasized that nursing students perceived the pressure and work overload as something that affected the development of safe health practices.

> [...] *in case of a more severe patient, I may relieve you, maybe I may stay with four and you, with three, so as not to overload you. I think pressure and overload are reasons that lead to errors and put the patient at risk* [...] (N3).

Identifying, responding to and disseminating AE

The category shows that the students felt prepared to identify and recognize risk situations; however, they did not feel safe to act in case of an AE. They highlighted the absence of discussion about errors, which was often veiled by the team.

> *I have already identified that errors could happen and I do not know how to proceed. I just know that I must communicate. As an academic, when I see it, I communicate it to the nurses, to the professor. I feel safe to recognize but not to act.* (N8).

> *We are prepared to identify errors. But how to respond, how to act when the error occurs, we are not very educated in this regard. There is not a lot of discussion about the error afterwards.* (M7).

Despite knowing the need to notify, they reported fear, inherent to the presence of a culture of negative safety, as something that affected the communication of errors. Furthermore, the students of both courses, despite reporting the discussion about errors as a failure in the process, perceived the presence of a punitive culture in the practice environments, which hindered the approach and discussion of errors.

> *It is not much discussed, there has been over one situation where serious failures have occurred and the subject* [...] *is not discussed because one has to blame, to punish. So this is not reported much.* [...] *I would be scared, and try to solve it without telling anyone, because you know you will be punished, you know that they will be talking about you. But I know that is not right. You have to communicate, notify, warn the whole team, so that it does not happen again.* [...] (N6).

> *I think the right thing is to communicate, but I think people are a little afraid. Not always... sometimes, it is something that can happen, inherent to the procedure, but I think the patient has the right to know.* (M2).

Discussion

This study showed the perception of nursing and medical students about recognized, seized and applied patient safety competencies in the continuum of the undergraduate teaching-learning process. Moreover, it is noted that the remarkable need for knowledge in relation to patient safety integrates a growing and continuous concern, and it is possible to envision in the literature initiatives to understand how the theme is being developed and transposed in the teaching-learning process[8], corroborating the perception expressed by students of the need to consolidate patient safety in professional education.

However, it is essential to consider, regarding nursing, that the incorporation of patient safety in the curricular bases, although necessary, implies interventions of great complexity, being pertinent a thorough evaluation to enable an assertive technical-scientific direction in relation to the development of safety skills in the teaching-learning process[9] directly implying the professional graduate and the performances that will be developed later.

Furthermore, instruments such as the World Health Organization's Multiprofessional Guide to the Patient Safety Curriculum and the Quality and Safety Education for Nurses (QSEN) skills framework become timely and contribute significantly in these directions[9]. The first is characterized as a scientific material with a multiprofessional focus, integrating concepts and directions in relation to patient safety, in order to offer an effective training and with the purpose of ensuring quality and safety in the health context[6].

The second, QSEN, developed in the United States of America (USA), can be understood as a scientific guideline, which enables a specific curricular direction for nurses, enabling a training based on a theoretical-practical transposition of competencies, in which it becomes a pressing preparation for the development and effective implementation of a safety praxis in nursing care[10].

Similarly to nursing, the incorporation of patient safety into the curriculum of medical school is not permeated by simplicity. Nevertheless, in view of the implications of the theme in a multi- and interprofessional way, movements for structuring and consolidating teaching in its amplitude correspond to a feasible horizon in the context of medical education[11].

However, this study revealed that the understandings about the theme in the context of training differ from the perspective of the students from both courses. The non-uniform and dissociated approach to patient safety between nursing and medicine courses evidences possible weaknesses regarding joint action in the prevention of health errors. In this sense, the unification of curricula among health graduate courses, in relation to the theme, is not an objective of the training institutions, which fragments and weakens the acquisition of knowledge and the development of safe practices among students from different courses[3]. The different approaches to the theme by the professors of the same course are emphasized, since the absence of an interdisciplinary thought about patient safety is often contemplated[12]. Nevertheless, the absence of harmonization between the curricula of the two professions is recognized as the main barrier to shared decision-making in favor of patient health[13].

In this sense, knowledge is constructed based on experiences and representations that the individual learns in their educational formation and on their daily experiences. Thus, the understanding of what is taught occurs only through the application of such knowledge in

practical situations. Therefore, it is necessary to use strategies that mobilize them[4]. These, however, permeate the figure of the professor, who acts actively as a facilitator of the process, contemplating the perspective of the students of this study.

The professor has an important attribution in this context, since education for patient safety transcends conventional performances. That is, effective training demands that professionals entrusted with transferring knowledge do so with wisdom and expertise, considering the context of action and the proper application of mechanisms in the teaching-learning process in these directions, for a full and satisfactory development of students' skills and competences[6]. Thus, the practice environment is shown as an inherent basis for the acquisition of skills and competencies in the most diverse areas. Although nursing students visualize a distancing from the theory, it is generally described as of great relevance for learning in both courses.

This understanding is confirmed in the literature, since movements that allow the practical transposition of acquired knowledge are essential, since the simple understanding of the theme may be unsatisfactory for the feasibility of relevant initiatives in health care and in the implementation of patient safety[14]. In this sense, in the continuum of experiences in the field, opportunistic during graduation, students perceive interdisciplinary work as fundamental for the realization of patient safety. However, they show elements that hinder this process of both interpersonal and cultural order.

Thus, for patient safety, teamwork is indispensable in quality care, besides presenting positive impacts. Interdisciplinary education, in this context, potentiates these issues, stimulating this action from professional education, enabling the development and promotion of thought and joint action, shared knowledge, promotion of beneficial information and promotion of mutual understanding[13].

Moreover, it is pertinent to consolidate interprofessional training early in undergraduate studies, since the distance between nursing and medicine, listed by students, may be being developed and consolidated by preconceptions in early stages of graduation, and interprofessional education is an instrument to deconstruct emerging stereotypes[15].

Thus, interdisciplinary education should be based on acceptance and respect between the different professions in patient care, and it is possible to reduce hierarchies that are often still present. For this to happen in the long term, three necessary skills are cited: communication between professions, attributions and procedures specific to each profession and to put themselves in the perspective of the other profession. Thus, it is possible to aim at improving the care performed through collaborative practices, needs-oriented and patient-centered[13].

In this scenario, communicating efficiently, both with team members and with patients and family members, is perceived by students as essential for understanding and involvement in patient safety, which is confirmed in the literature explored[16]. It is worth highlighting the importance of communication for patient safety, since, in view of the occurrence of an AE, it is possible to highlight several failures in the transmission of messages among the health team. Regarding verbal communication, those related to what occurs among professionals, as well as with the patient, stand out. In written communication, the relevance of systematic record keeping for effective communication stands out. In this context, communication gaps are considered determining factors in the occurrence of AEs in health[6].

In addition, effective communication between health professionals can positively influence patient involvement in their own care, ensuring that they receive and understand the information provided. Therefore, it is necessary that these are passed clearly and objectively, without the use of technical terms that are unknown by the patient. Their abilities to assimilate information vary, and it may be necessary to repeat it at various times[17]. Thus, communication enables

different knowledge to articulate in the face of a risk situation, supporting decision-making.

Therefore, medical and nursing students, despite having different contacts and knowledge regarding patient safety protocols, recognize them as opportune instruments for risk management, which corroborates the evidence about the importance of implementing protocols to ensure patient safety[18].

Safety protocols were created in Brazil in 2013 to favor the execution of safe health practices. These are: patient identification, pressure ulcer, safety in prescription, use and administration of medications, safe surgery, practice of hand hygiene in health services and prevention of falls[2]. Its implementation by the interdisciplinary team contributes to the quality and safety of the care provided. However, their access in health institutions still has weaknesses[19].

Moreover, it is observed that the systematic consolidation of knowledge about protocols in the care environment, the professor's posture, the teaching-learning process in the discussion after the occurrence of errors, as well as the learning in the face of this fact are perceived by students as ways to manage risks. Educational interventions and continuing education contribute significantly to safe practice, especially in the notification of errors and AE, reflecting in the improvement of the quality of care provided. Thus, errors can be worked on in the institution in order to implement preventive measures and strategies to mitigate AE through organizational learning[20]. In this context, the approach about risk management in training enables the identification of failures that can cause errors and, consequently, the elaboration of measures for its prevention or mitigation[17].

Thus, the human and environmental factors were perceived by the students as influencers in the development of competencies for patient safety, especially in the practice environment. The optimization among these elements in the health area aims to perform safe practices efficiently, being based on the behavior directly influenced by the structure it has. Thus, errors occur when there is no harmony between these factors and, consequently, when professionals and the system are not cognitively and physically aligned[21].

In addition to a professional duty, the need for an ethical awareness directed to patient safety implies the undeniable commitment to protect the patient from damage from the care continuum[22]. It is punctuated the recognition of error among human factors, listed by students, as fundamental for development and learning, being an integral part of the safety culture.

Still connected to human factors, students noticed theoretical-practical dissociations involving episodes perceived as convenience and resistance to the detriment of the consolidation of knowledge. In New Zealand, professors showed concerns about the dichotomy between what is taught and what students often experience in the practice environment, which suggests the need for greater integration between classroom and clinic environments. However, professors are often not prepared to address issues related to patient safety in the teaching and learning process, which negatively influences the development of safe practices by students[12].

Therefore, nursing students recognize work overload as a relevant environmental factor to the detriment of safety. This understanding converges with the evidence described in the literature that tiredness, exhaustion and exhaustion, in addition to the intensification of working hours[6,23], as well as the reduced dimensioning of personnel, are related to the higher incidence of errors[24].

Finally, nursing and medical students, although being able to identify the risk of or the AE itself, do not feel safe enough to act before such situation. In this context, it is emphasized that the main characteristics that permeate the notion of competence are decision-making, mobilization of different resources and knowing how to act, enabling the understanding of its concept as a way of controlling the situations of everyday life, in its different spheres. These elements are associated with the understanding and evaluation of a given situation, so that knowledge is mobilized to act appropriately[4]. However, if students do not have adequate

understanding of their action in the face of error, the conduct in this sense is impaired.

Educators often do not identify the occurrence of errors in the training of professionals, as well as do not recognize the importance of their notification, which can impair the training of students to act in this context[13]. Thus, the greater the students' understanding of the variables involved in the occurrence of an AE, the greater their commitment to notification and prevention[1].

Regarding the communication of the error, the students demonstrated to be aware of the implications related to their notification. However, they emphasized obstacles associating fear with a punitive culture, perceived as toxic, to the detriment of safety and the viability of competencies, making it difficult to discuss errors in training. In this scenario, the safety culture is characterized by emphasizing learning and organizational improvement, the engagement of professionals and patients in incident prevention, based on safe systems, avoiding individual accountability[2].

However, concerning the training of health professionals, despite the approach of stimulating a positive culture, it is evident that learning remains focused on the individual and on his/her responsibility before an error[12]. Thus, despite the efforts made by health institutions to demystify error, the presence of a punitive culture is still observed among professionals, which requires approaching errors as a form of learning since professional education[25].

The limitations include the fact that the study was carried out only with medical and nursing students, from a single university, which hinders knowledge about the real magnitude of the teaching of competencies in this context. In this sense, there is need for new studies that addresses other health professions, and in both public and private contexts, covering professors and Pedagogical Projects, since there is a scarcity of studies with a broader perspective.

This study allows critical reflections on the theme in the training scope, as well as the recognition of its theoretical-practical transposition from the perspective of students in the health area, specifically nursing and medicine. In this sense, this research contributes to boost new scientific productions and, consequently, actions and interventions that will consolidate awareness and learning about safety competencies in the educational interstitial in favor of safe and benevolent care practices from a global perspective.

Final considerations

Nursing and medical graduate students had satisfactory perceptions regarding the competencies for patient safety in the teaching-learning process. However, they still demonstrate weaknesses in their knowledge and application in practice, in real situations, especially in how to act before errors during care. Although the students recognized the importance of interdisciplinary action in patient safety, it is evident the lack of articulation between the two courses both in the curricular issue and in the practice environment. In this scenario, the professors' role is identified as a strengthener of good practices; however, often, their performance occurs in an incipient way.

It is evident the need for a greater approach to the theme of patient safety in the training of doctors and nurses, in an articulated and transversal way, addressing aspects related to knowledge and its applicability in potential and real risk situations. In this context, students must have, in addition to knowledge, skills and attitudes essential for decision-making regarding the best conduct to be performed.

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Received: August 30, 2021

Approved: June 14, 2022

Published: August 17, 2022