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RESEARCH ARTICLE (ORIGINAL)

Safe cardiovascular care in nursing education: perspective of teachers, students and graduates

Cuidado cardiovascular seguro no ensino de enfermagem: perspetiva de docentes, discentes e graduados

Cuidado cardiovascular seguro en la enseñanza de enfermería: la perspectiva de profesores, estudiantes y graduados

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Abstract
Background: Patient safety is essential for the promotion of quality of care, especially when associated with the global and regional epidemiological impact of cardiovascular health, highlighting the need for a clear introduction of the theme in the health curriculum.
Objective: Analyze nursing teaching in the field of safe cardiovascular care.
Methodology: Hermeneutic study carried out in the nursing course of a public university in the interior of Northeastern Brazil with teachers, students, and graduates. Sampling was by convenience. The interviews and focus groups were submitted to thematic categorical analysis with theoretical reference of the Curricular guide of patient safety of the World Health Organization. The final sample was 46 participants.
Results: The categories resulted in the themes: Care is complex and its teaching is fragmented, The lack of specificity in teaching safe cardiovascular care, The recognition of safe cardiovascular care and The challenges of teaching and learning in safe cardiovascular care.
Conclusion: The teaching of safe cardiovascular care proved to be indirect and fragmented by all groups of participants.

Keywords: cardiovascular nursing; patient safety; education, higher; nursing education

Resumo
Enquadramento: A segurança do paciente é essencial para a promoção da qualidade assistencial, especialmente quando associada ao impacto epidemiológico global e regional da saúde cardiovascular, evidenciando a necessidade da introdução clara da temática nos currículos de saúde.
Objetivo: Analisar a formação em enfermagem no domínio do cuidado cardiovascular seguro.
Metodologia: Estudo hermenêutico realizado no curso de enfermagem de uma universidade pública do interior do Nordeste brasileiro com docentes, discentes e graduados. A amostragem foi por conveniência. As entrevistas e grupos focais sofreram análise categorial temática com referencial teórico do guia curricular de segurança do paciente da Organização Mundial de Saúde. A amostra final foi de 46 participantes.
Resultados: As categorias resultaram nos temas: O cuidado é complexo e o seu ensino é fragmentado; A falta de especificidade no ensino do cuidado cardiovascular seguro; O reconhecimento do cuidado cardiovascular seguro e Os desafios do ensino e aprendizagem no cuidado cardiovascular seguro.
Conclusão: O ensino do cuidado cardiovascular seguro mostrou-se indireto e fragmentado por todos os grupos de participantes.

Palavras-chave: enfermagem cardiovascular; segurança do paciente; educação superior; educação em enfermagem

Resumen
Marco contextual: La seguridad del paciente es esencial para la promoción de la calidad asistencial, especialmente cuando se asocia con el impacto epidemiológico global y regional de la salud cardiovascular, lo que pone de manifiesto la necesidad de introducir claramente el tema en los planes de estudios sanitarios.
Objetivo: Analizar la formación de enfermería en el dominio del cuidado cardiovascular seguro.
Metodología: Estudio hermenéutico realizado en los estudios de enfermería de una universidad pública del interior del Nordeste brasileño con profesores, estudiantes y graduados. La muestra fue por conveniencia. Las entrevistas y los grupos focales se sometieron a un análisis temático categórico con referencia teórica a la Guía Curricular sobre Seguridad del Paciente de la Organización Mundial de la Salud. La muestra final fue de 46 participantes.
Resultados: Las categorías dieron lugar a los siguientes temas: El cuidado es complejo y su enseñanza está fragmentada; La falta de especificidad en la enseñanza del cuidado cardiovascular seguro; El reconocimiento del cuidado cardiovascular seguro y Los desafíos de la enseñanza y el aprendizaje en el cuidado cardiovascular seguro.
Conclusión: La enseñanza del cuidado cardiovascular seguro resultó ser indirecta y estar fragmentada en todos los grupos de participantes.

Palabras clave: enfermería cardiovascular; seguridad del paciente; educación superior; educación en enfermería

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Introduction

Safe cardiovascular care is performed by nurses to an individual or community to promote, maintain, monitor, or restore cardiovascular health, maximizing health outcomes and reducing the risk of unnecessary harm to an acceptable minimum. The authors developed this definition by combining the World Health Organization's (WHO) definitions of *patient safety*, *healthcare*, and *safe care* (OMS, 2011), in the context of cardiovascular nursing care.

Therefore, this definition reflects the articulation of two needs of the Brazilian and global health systems. On the one hand, patient safety and cardiovascular care. On the other hand, the impact of the high prevalence of cardiovascular and iatrogenic diseases on health care, requiring investments in training (Wu & Busch, 2019), as foreseen in the National Curriculum Guidelines for Undergraduate Nursing Courses (Resolução n.º 3/2001 de 7 de novembro). However, many education institutions still find it difficult to introduce patient safety into their curricula, using a generalist and indirect approach (Bohomol, 2019; Kirwan et al., 2019).

Some studies analyze how curricula will reflect knowledge, skills, and attitudes in safe practice if issues such as the dissociation between theoretical and practical teaching and the vertical relationships between teachers, students, patients, and health services in local biopolitics have not yet been overcome (Brown et al., 2019). In the face of challenges such as these, WHO published the Multi-Professional Patient Safety Curriculum Guide (OMS, 2016), which is a framework used in two of the four axes of the National Patient Safety Program (PNSP) related to the professionals' training and continuing education (Ministério da Saúde, 2014).

In view of the above, this study aims to analyze nursing education in the field of safe cardiovascular care, with a view to offering promising responses to the discussion and qualification of student training.

Background

Among contemporary health requirements, patient safety is gaining more and more attention for its potential to promote quality and reduce risks and adverse events in healthcare. In Brazil, the National Curriculum Guidelines for Undergraduate Nursing Courses (Resolução n.º 3/2001 de 7 de novembro) point out that nursing education must meet society's health needs through the Brazilian Unified Health System (*Sistema Único de Saúde*, SUS). Thus, the transformations in the SUS healthcare model and its demands for care quality and patient safety should be directly reflected in nursing education.

The training of professionals with these skills is one of the WHO initiatives in the Patient Safety Curriculum Guide (OMS, 2016), which was chosen as the theoretical framework of this study. This guide foresees the flexible introduction of the theme in health curricula with adaptations to different cultures and countries. WHO has encouraged the discussion and implementation of patient safety promotion programs worldwide and promoted the creation of the PNSP in Brazil. One of this program's key axes is the training and permanent education for ensuring patient safety and quality care in health services (Ministério da Saúde, 2014).

The Patient Safety Curriculum Guide is flexible and can be adapted to various realities and cultures, regardless of the resources available in Higher Education Institutions (HEIs). The Guide consists of two parts: a) Teacher's guide - developed for health care educators, providing materials and tools with guidelines for teachers to promote patient safety education, with proposals and examples of implementation and evaluation of teaching-learning methods; b) Patient safety topics – aimed at both health care educators and students, defining and describing key topics for teaching and learning patient safety. The topics are: 1) What is patient safety?; 2) Why is applying human factors important for patient safety?; 3) Understanding systems and the effect of complexity on patient care; 4) Being an effective team player; 5) Learning from errors to prevent harm; 6) Understanding and managing clinical risk; 7) Using quality-improvement methods to improve care; 8) Engaging with patients and carers; 9) Infection prevention and control; 10) Patient safety and invasive procedures; 11) Improving medication safety (OMS, 2016).

Thus, it is observed that the topics for the approach are independent, which allows for different applications in the teaching-learning processes, as they are designed to be integrated into existing programs.

Research question

How is safe cardiovascular care taught in nursing education?

Methodology

A hermeneutic study was conducted to analyze the phenomenon of cardiovascular nursing education from the perspective of patient safety. The study scenario was the undergraduate nursing program of a Brazilian public university founded in 1998 in Ceará's inland area, in the Cariri region. This university offers undergraduate degrees, special programs, and graduate studies, including specialization, master's, and doctoral degrees, to several municipalities in the states of Ceará, Piauí, Pernambuco, and Paraíba. The study was developed with teachers, undergraduate students, and graduates recruited from among the student nurses of the two master's degrees linked to the nursing department because the university did not offer a doctoral degree at the time.

The participants were divided into groups based on the following inclusion criteria: being a teacher and addressing cardiovascular care in the subject(s) that they teach; being a student regularly enrolled in the undergraduate degree; having graduated from the nursing degree of

that university and being regularly enrolled in one of the master's degrees linked to the nursing department of that university. The following exclusion criteria were also applied: teaching for less than 6 months, being on leave during the data collection period, and/or missing the three consecutive meetings scheduled for data collection. A nonprobability convenience sampling technique was used without establishing the number of participants *a priori*. Thirteen teachers addressed the cardiovascular topic in their subjects. Two teachers were excluded for having been working for less than six months, resulting in 11 teachers. Nineteen graduates were enrolled in both master's degrees. Of these, five were excluded: two for being on leave and three for missing the three consecutive meetings scheduled for data collection. The total was 14 participants.

Data about teachers and graduates were collected through semi-structured interviews whose script was based on topics for teaching patient safety (WHO, 2016). The interview was chosen for collecting data among teachers and graduates due to the sample size, the unavailability of common schedules, and the heterogeneity in the participants' training. The instrument was pilot tested with two teachers from another HEI and two graduates without any link to the postgraduate degrees. These interviews were discarded, and there was no need to change the script. The 285 students distributed and regularly enrolled in the 10 semesters of the program were previously contacted for presentation of the study, so that focus groups could be created. The collective interview technique was selected because it effectively captures the contexts, opinions, and experiences of groups and communities. The focus groups were composed based on voluntary presentation as follows: Focal Group (FG): FG-1 (seven students from the first to the fourth semesters – predominance of basic subjects), FG-2 (eight students from the fifth to the eighth semesters – prevalence of theoretical-practical subjects on the care process), and FG-3 (six students from the ninth and tenth semesters – in supervised curricular internships). In total, 21 students participated.

Two researchers, a moderator, and an observer conducted the FGs on previously scheduled dates and times, in a private and air-conditioned room at the university. FGs were audio-recorded and occurred in the late afternoon at a time suggested by the participants.

Before the semi-structured interviews and the FGs, participants and groups were contacted for scheduling data collection. The interviews were conducted individually by a researcher in a private space and validated at the end. FGs occurred in three moments (one with each group). The participation rules were previously explained, namely the use of code names for participant identity preservation and organization and the guarantee that all participants would give their opinions. The script included sequentially ordered words based on the set of topics for teaching patient safety. Speech validation was performed during the interview. In total, 9 hours and 35 minutes of authorized recording were stored, resulting from the two techniques used. The recordings were stored in a digital database for further transcription and analysis.

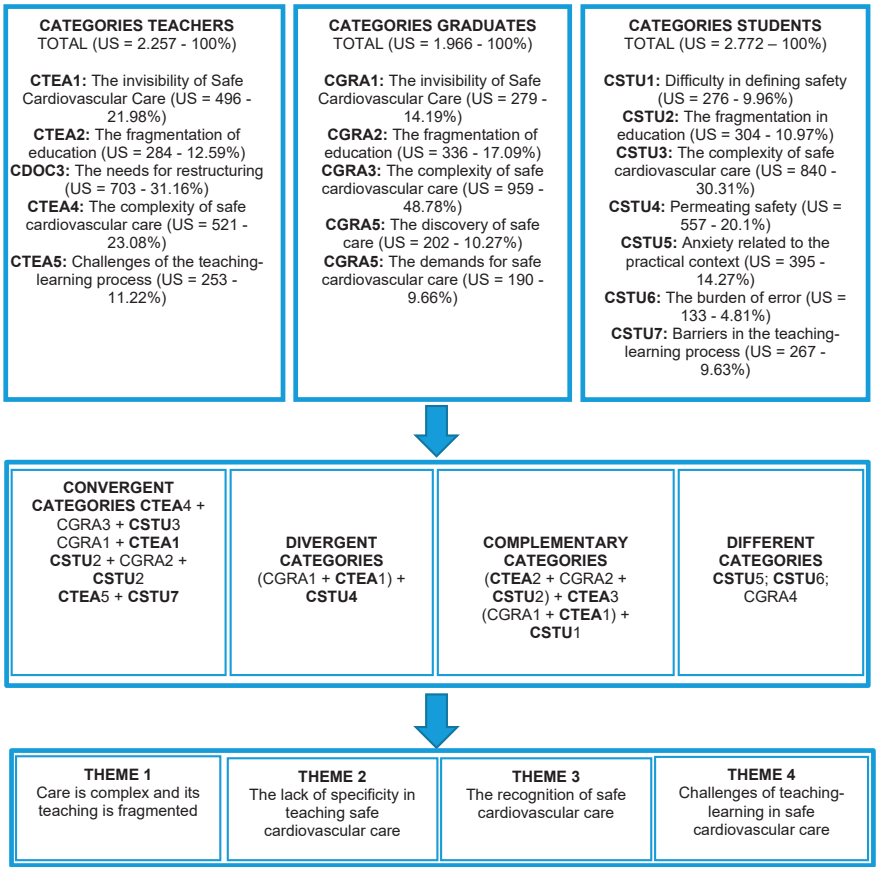
The content analysis followed these steps: pre-analysis, material exploration, treatment of results, inferences, and interpretation (Minayo, 2013). Thus, the analysis was conducted based on the theoretical framework of the Patient Safety Curriculum Guide, without using software. The categories emerged after analysis, which resulted from the quantification of units of meaning and context that were grouped in ascending order into subcategories and categories. These categories and subcategories were analyzed in terms of convergence, divergence, complementarity, and differences, and subsequently aggregated and presented in themes. The themes are illustrated by excerpts from the set of interviews and FGs to reach hermeneutics. Data on the participants' characterization were analyzed through univariate descriptive statistics using IBM SPSS Statistics, version 15.0. This study received favorable opinion no. 923.537 from the Research Ethics Committee of the State University of Ceará.

Results

Participants had a mean age of 27.98 years (± 8.14; with a minimum of 18 and a maximum of 54 years). The youngest participants (18 to 25 years) represented 54.3% of the sample, with a higher incidence in the students' group. Participants were mostly female (89.1%) without a partner (63%). Regarding ethnic-racial characteristics, 63% of the sample reported being black, brown, yellow, or indigenous. Most teachers had a doctoral degree (36.4%), with a permanent employment contract (63.6%), mean length of teaching time of 8.57 years (± 5.77), and were linked to research groups (72.7%). The majority of students (76.2%) were linked to research groups, and many of them were research initiation fellows (47.6%). All graduates (100%) participated in research groups and worked in the areas of teaching (35.7%), primary health care (35.7%), public health management (7.1%), and secondary or tertiary care (21.3%), with a mean length of service of 4.52 (± 4.32) years. Figure 1 shows the synthesis of the analysis of the interviews (teachers and graduates) and FGs (students). It should be noted that the presentation of the results highlights the relationships between the categories, which are represented by cardinal numbers. These relationships were classified as convergent, divergent, complementary, and different. These categories emerged from the participants' statements and were used to identify the themes resulting from a chain of meanings observed during content analysis.

Figure 1

Synthesis of the convergence, divergence, complementary, and difference analysis of the categories and themes



Note: SU = Sense unit.

The analyzed data show that the convergent, divergent, complementary, or different categories were aggregated based on the confluence of the contents analyzed in each of them. In the end, four themes emerged: Care is complex and its teaching is fragmented; The lack of specificity in teaching safe cardiovascular care; The recognition of safe cardiovascular care; and Challenges of teaching-learning in safe cardiovascular care.

The analysis of the theme Care is complex and its teaching is fragmented shows that the participants reported convergence of ideas, agreeing with the scenario of complexity of cardiovascular health and its still fragmented approach in health education.

> we [group of teachers] still think that the curriculum, that the curriculum matrix is very fragmented, because it is still very focused on the content . . . made of subjects that are linked to contents . . . there is no dialogue between subjects, and so, when there is no such dialogue, there is a transfer of responsibility from one to another . . . . (TEA 7)

"We have to have classes and practice what we learn . . . because then, when we face a certain type of care, it becomes something very distant, so when we have to perform it, we need to check" (STU - FG3).

> I think the curriculum and curriculum matrix of the graduation will undergo a process of change, but I think unfortunately it's all still very fragmented, teaching, research and extension, the internship is as if it were something apart from the classes. (GR 6)

There are different meanings of fragmentation in the statements, namely those related to the guiding documents of the degree (pedagogical project and curriculum matrix), how contents are addressed, and the distance between theory and practice. A second aspect of convergence was the complexity attributed to safe cardiovascular care, associating its multifactoriality, multidisciplinarity, and bond with the patient and the family/caregiver in the therapeutic process:

> It's about preventing the risks as much as possible . . . everything falls on safety . . . , if you're going to administer medication, it's a safety matter . . . it can be a simple hemodynamic procedure, you have all this fanfare . . . counting that material, how that material arrived, how it was sterilized . . . , teaching the patients what the disease is, teaching the caregivers, what they will do, what are the signs of complication of a cardiovascular disease. (TEA 11)
>
> With the nursing techniques, I always have to

> monitor blood pressure, the administration of medications in terms of dosage and time, correctly, monitoring a patient in relation to their positioning in bed, the noises in the ICU . . . the noise, it affects us; and the outcome is a worse clinical condition. So, we focus on evaluating how the nursing prescription is being performed. (GR 8)
>
> Talking about bonding and humanization in nursing care. The professional must be sensitive to what is happening in the patient's life, besides their disease, besides the medications they take and their lifestyle, because if they don't have the family's support, the family's love, they will face major risks for cardiovascular disease or even the non-control of blood pressure. (STU - FG2)

The statements reflect the complexity of cardiovascular care that goes beyond hospital and individual care, reflecting the required comprehensiveness of chronic cardiovascular care when one considers the bond and does not limit it to the health professional, involving the patient and the family in the therapeutic process.

Regarding the theme Lack of specificity in teaching safe cardiovascular care, teachers and graduates still report a situation of invisibility of safe cardiovascular care in the training process: "from what I observed in the pedagogical meetings, there is no major concern with this aspect of safety in cardiovascular care" (TEA 2); "if you ask the students today, does the teacher talk about safety? . . . maybe they say no because I don't use that word safety . . . it would focus on care generalization" (TEA 5); "not that I remember having a specific cardiovascular patient safety class. My classes focused on cardiovascular diseases" (GR 10).

Students have a different perspective of this invisibility from teachers and graduates. Although they identify safety aspects in the contents related to cardiovascular care, they emphasize that they are not explicitly addressed in teaching-learning situations: "what's very involved in patient safety is professional ethics" (STU - FG1).

> understanding how the anatomical parts and the heart work, in the disease, in relation to the diseases that affect the cardiovascular system . . . first aid, where we learn to approach a patient by reducing their risk of a cardiac arrest, such as in the control of hemorrhages . . . in pharmacology, the medications directed to this system . . . in semiology, and now in adult health in a more in-depth way, from the medical history, so you know about the risks to the heart system. (STU - FG2)

"it starts in the subject of semio-technique, focusing a lot on technique, but at the same time, as my colleague said, it focuses on the correct procedure and the disciplines of care" (STU – FG3).

The statements show that safe cardiovascular care was addressed indirectly, associated with aspects of nursing care, prevention of clinical risks, and performing the correct technique in the procedures. Although the students recognized and reported aspects of safety being addressed from the beginning of their degree, they had difficulty defining it in a situation that complements the invisibility reported by the groups: "always look for what's best for the patient . . . then their health will not worsen, I think it has a lot to do with beneficence" (STU - FG1) ; "it's a matter of the safety of my procedures, the safety of my attitudes towards the patient . . . if I'm not sure of what I'm doing, I can put their safety at risk" (STU – FG1); "As the patient is, they must not evolve to a critical or bad condition because of the professionals' actions" (STU – FG2); "I believe it has to do with everything that the health professional can do for the patient, for the user of the health system to have the best care" (STU - FG3).

The difficulty in defining the concepts of patient safety and safe cardiovascular care is seen as a reflection of the invisibility of this theme and its fragmentation in education, which complements the category about the need to reformulate the approach to the theme: "we need more discussion on this topic and expand its universe, it can't be an occasional topicn certain disciplines, it has to be transversal!" (TEA 1); "I believe in the need to be more objectively incorporated into the program's pedagogical project so that it can also be incorporated in the subjects" (TEA 5).

The unspecific way in which the topic of safe cardiovascular care was reported by teachers and graduates differs from how undergraduates perceive it. Although they have difficulty in defining concepts, undergraduates see it in a nonspecific way, usually associated with nursing care or procedures, exposing the need for a direct, cross-sectional approach and curriculum reformulation.

Concerning the theme Recognition of safe cardiovascular care, graduates reported that differences in their professional practice between the categories associated with the recognition of safe cardiovascular care. They mentioned some approximation with the theme when searching in their memory for contents addressed during their training period: "I know it has to do specifically with patient safety. But when I was a student, it was not conveyed as patient safety, just some aspects of care to be learnt" (GR 5); "I'm in the hospital internship with the students . . . I also don't focus on patient safety, I think this comes from my degree, what I learned, I take it with me" (GR 5); "[the contact with the safety of care] was really after I graduated . . . I went looking for the manual to remember, relearn, pass on to the students" (GR 6).

As mentioned before, there is a worrying trend in the statements toward repetition, particularly among those graduates who became teachers, in the indirect and decontextualized approach to safe cardiovascular care in training.

On the theme Challenges of teaching-learning in safe cardiovascular care, the students highlighted two specific aspects of their daily lives: the anxiety related to the practical context and the burden of error as challenges of the teaching-learning processes.

"[associate] practical knowledge with theoretical knowledge, already here, at the university so that we feel more secure when we go to the internship" (STU - FG2).

> if I'm nervous? I'll keep being professional with patients and family members, use the appropriate words . . . if the family sees that the professional is nervously shaking his hands in the face of that

> situation, the family will not let him . . . perform any procedure on that patient. (STU - FG1)
> for you to analyze, who was really to blame? It gets complicated because it's a chain. One person comes first and misplaces the material, that person is guilty of not confirming, not checking before administering, I'm sure this guilt thing is very relative. I think that, depending on the situation, if you're not confident, you're not sure what you're doing, it's better not to do it. (STU - FG2)

"they ask you to participate in research, teaching and extension, but if you calculate the time they [teachers] give us for it, it's not enough!" (STU - FG1); "we had a model [manikin for simulation] that didn't work" (TEA 7). The anxiety related to the practical context is typical of students who need to learn, do their best, be well evaluated by the teacher and the patients, and it reflects the fear of making a mistake and not being sufficiently prepared. These personal and political-institutional challenges refer to interpersonal and power relations inside and outside the university, the lack of structure, teaching processes focused on the content, and the difficulty in reconciling teaching, research, and extension activities and time. The results in the themes describe safe cardiovascular care as complex, treated in a nonspecific and fragmented way in the teaching-learning processes, and leading to insecurity in the approach to the theme by teachers and students.

Discussion

In general, the teaching of patient safety reveals a fragmentation of teaching and lack of clarity of this theme in the curricula of nursing schools, usually integrated in an occasional manner and without the transversality and interdisciplinarity required (Bohomol, 2019; Samuriwo et al., 2020). In this study, the fragmentation of education in safe cardiovascular care was associated with the need to reformulate formative processes as an alternative to traditional and fragmented teaching. Therefore, according to Kirwan et al. (2019), curricular integration emerges as an active, articulated, and integrative pedagogical proposal centered on the student's role in the development and articulation of knowledge, supported by the teacher as a facilitator of teaching, research, and extension. In turn, these findings reveal that the complexity of safe cardiovascular care was consensual among participants. However, although it is still challenging to universities worldwide, integrated and multiprofessional education in health brings new perspectives in addressing such complexities due to the potential for improvements in health team communication, decision-making, increased confidence of students and graduates in care practices, valorization of the professional and the work environment, and reduction of hierarchical authoritarianism while promoting the qualification of care for professionals, students, teachers, and services (Hessels et al., 2019).

Therefore, it should be noted that the complexity reported by the teachers was associated with the need for multidisciplinary action and the development of a bond with the patient/user/family/caregiver in the therapeutic process to promote adherence and care, which is also mentioned in other studies (Malachias et al., 2016; OMS, 2016). Among the graduates and students who participated in the study, the focus was on the techniques, the procedures, and the need to learn and get it right. A defensive and punitive discourse, certainly influenced by the culture of guilt, is present in traditional and biomedical teaching (Gustavsen et al., 2019; Ozer et al., 2019). The students indicated the time for the diagnosis of a pathological process, in the context of a chronic cardiovascular disease, as an important aspect of safe cardiovascular care, enabling early intervention to avoid exacerbations. Thus, it refers to the needs for changes in lifestyles and the development of a patient-centered care plan, especially in the prevention of risks/harm and in the promotion of cardiovascular health, based on comprehensive and humanized health policies. In general, based on the emerging set of ideas, participants perceived two types of risks: those related to care and those related to cardiovascular risk factors, in addition to those purely genetic/biological aspects, as can be seen in the following statements: "it's a matter of the safety of my procedures, the safety of my attitudes towards the patient" (STU - FG1) and "the professional must be sensitive to what is happening in the patient's life, besides their disease . . . because if they don't have family support . . . they will develop great risks for cardiovascular disease (STU - FG2). Therefore, two aspects of nursing care are emphasized: one associated with continuous and holistic care for chronic cardiovascular diseases and another associated with reducing care risks and adverse events with and without harm (Malachias et al., 2016).

The traditional model of health training values the classroom and hospital as learning scenarios, with emphasis on memorization, and the competition among students and professionals in games of "wrongs and rights", besides promoting hierarchical authoritarianism and patient objectification (Weeks et al. 2019). This panorama associated with the indirect way of addressing safe cardiovascular care in teaching and learning processes converges on the invisibility of this concept and the students' difficulty in defining it, although they associate it with nursing care actions aimed at minimizing patient harm in care management. For students, safe cardiovascular care is intrinsic to nursing care itself. In her notes, Florence Nightingale said that the first requirement in a health institution is to do no harm to the patient (Nightingale, 1989).

Safety in care is not a new approach but rather a professional responsibility implicit in nurses' caring actions. This statement refers to the graduates' feeling of recognition when, acting professionally, they visualized situations experienced in the undergraduate degree and associated them with the theme of safe cardiovascular care. Paradoxes between teaching and practice in undergraduate studies give way to defensive, closed, and punitive practical teaching (Amorim et al., 2019; Hessels et al., 2019). Thus, the category of the students' burden of error emerged, with reference to the teachers' evaluation processes and the often prejudiced judgment of patients/users and caregiver/family in relation to those who are receiving training, increasing

the pressure to demonstrate competency. This situation may justify the anxiety related to the practical context, which is also influenced, for example, by the teaching-service and interpersonal relations and whether or not the practical settings have a culture of safety (Gleason et al., 2019), as observed in the following statement: "we have to have classes and practice what we learn" (STU - FG3, 2017). Thus, according to the literature and the students who participated in this study, many inconsistencies in education are associated with the teachers' performance, such as resistance to changes in teaching methodologies, distancing from clinical practice, and little knowledge of how SUS works, sometimes combined with the passivity of students who graduate impoverished due to the lack of proactivity in the development of knowledge itself (Fernandes, 1998; Gleason et al., 2019; Guinea et al., 2019). The most frequent teaching and learning strategy reported by the study participants was the expository class, followed by case studies, which were well evaluated by the students. They also reported clinical simulation. In line with other methods indicated in the literature, the students also reported teacher training in active methodologies, evidence-based problematization, and ease of access to courses and online materials as relevant tools to optimize the teaching of safe nursing care (Bohomol, 2019; Gustavsen et al., 2019; Ozer et al., 2019; Wu & Busch, 2019).

The limitations of this study are that it was conducted in a single HEI and in only one health course. Despite these limitations, the exposed need for change in the nursing training process showed the concern for actual progress towards safe and quality care. To this end, the following aspects are important: investments in training, strengthening of curricula, and instrumentalization of universities from a structural and logistical perspective for the teaching of knowledge, skills, and attitudes about patient safety with a view to meeting SUS and societal needs.

Conclusion

Safe cardiovascular care in nursing education proved to be indirect and fragmented, with all groups of participants recognizing the need for a clear and transversal approach to the theme. Teachers and graduates also suggested reformulation through curricular integration. Among students, cardiovascular care is identified in the nuances of nursing care itself, although they cannot define it. The teaching-learning processes revealed a traditional teaching, contextualized by individual and institutional relations of power and evaluation/judgment reflected in the students' need to learn and the fear of error. The characterization of nursing curricula by students, teachers, and graduates allowed a better understanding of the phenomenon under analysis.

So, there is a clear need for structural changes in nursing training in the area of safe cardiovascular care. Further studies should be developed, particularly on safe cardiovascular care, to clarify broader problems within other realities, fields, and levels of health education.

Author contributions

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