



Developing critical thinking in the teaching of Nursing: a challenge in times of Covid-19 pandemic

Desenvolvendo o pensamento crítico no ensino de Enfermagem: um desafio em tempos de pandemia de Covid-19

Desarrollando el pensamiento crítico en la enseñanza en Enfermería: un desafío en tiempos de la pandemia Covid-19

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ABSTRACT

Objective: To reflect on the development of critical thinking in nursing education in times of Covid-19 pandemic. **Method:** Theoretical-reflective study based on the experiences of researchers in the Postgraduate Program in Nursing at Universidade Federal de Santa Catarina in partnership with researchers in the Undergraduate Program in Nursing at Lovisenberg Diaconal University College (Lovisenberg Diakonale Høgskole), Norway, and the Faculty of Nursing at Hospital Israelita Albert Einstein. **Results and Discussion:** This discussion categorized two reflective theoretical points: The importance of critical thinking for the advancement of Nursing education and clinical practice, and Innovation to stimulate critical thinking in Nursing: a challenge in times of pandemic. The current moment of calamity assumes pedagogical character because it teaches about the need for changes in the ways of doing care, management and research, as well as signals to the field of health education the need to adapt teaching and learning processes to the reality of the life conditions of students. **Conclusion and implication for practice:** It is expected to awaken in the mentors the reflection around the commitment to the act of teaching in times of change, adapting their pedagogical practices with creativity, technological innovation and the development of critical thinking in students.

Keywords: Critical thinking; nursing education; Comprehensive Health Care; pandemic; Coronavirus Infections.

RESUMO

Objetivo: Refletir sobre o desenvolvimento do pensamento crítico no ensino de Enfermagem em tempos de pandemia de Covid-19. **Método:** Estudo teórico-reflexivo baseado nas experiências dos pesquisadores do Programa de Pós-Graduação em Enfermagem da Universidade Federal de Santa Catarina em parceria com os pesquisadores do Programa de Graduação em Enfermagem da Faculdade Diaconisa Lovisenberg (Lovisenberg Diakonale Høgskole), Noruega, e com a Faculdade de Enfermagem do Hospital Israelita Albert Einstein. **Resultados e Discussão:** Essa discussão categorizou dois pontos teóricos reflexivos: A importância do pensamento crítico para o avanço da educação e da prática clínica de enfermagem, e Inovação para estimular o pensamento crítico na enfermagem: um desafio em tempos de pandemia. O atual momento de calamidade assume caráter pedagógico porque ensina sobre a necessidade de mudanças nos modos de fazer atenção, gestão e pesquisa, bem como sinaliza para o campo da educação em saúde a necessidade de adaptação dos processos de ensino e aprendizagem à realidade das condições de vida dos estudantes. **Conclusão e implicação para a prática:** Espera-se despertar nos formadores a reflexão em torno do compromisso com o ato de ensinar em tempos de mudanças, adaptando suas práticas pedagógicas com criatividade, inovação tecnológica e desenvolvimento do pensamento crítico nos estudantes.

Palavras-chave: Pensamento crítico; educação em enfermagem; Atenção integral à saúde, pandemia; Infecções por coronavírus.

RESUMEN

Objetivo: Reflexionar sobre el desarrollo del pensamiento crítico en la educación de enfermería en tiempos de la pandemia COVID-19. **Método:** Estudio teórico-reflexivo basado en experiencias de investigadores del Programa de Posgrado en Enfermería de la Universidade Federal de Santa Catarina en asociación con investigadores del Programa de Posgrado en Enfermería de la Facultad de Diaconisa Lovisenberg (Lovisenberg Diakonale Høgskole), Noruega, y la Facultad Enfermería del Hospital Israelita Albert Einstein. **Resultados y Discusión:** Se categorizaron dos puntos teóricos reflexivos: La importancia del pensamiento crítico para el avance de la educación y práctica clínica de enfermería, e Innovación para estimular el pensamiento crítico en Enfermería: un desafío en tiempos de pandemia. El momento actual de calamidad asume un carácter pedagógico porque enseña la necesidad de cambios en las formas de hacer atención, gestión e investigación, además de señalar al campo de educación en salud la necesidad de adecuar los procesos de enseñanza y aprendizaje a la realidad de los estudiantes. **Conclusión e implicación para la práctica:** Se espera despertar en los formadores la reflexión sobre el compromiso con el acto de enseñar en tiempos de cambio, adaptando sus prácticas pedagógicas con creatividad, innovación tecnológica y desarrollo del pensamiento crítico en los estudiantes.

Palabras clave: Pensamiento crítico; educación en enfermería; Atención Integral de Salud; Pandemia; Infecciones por Coronavirus.

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Submitted on 11/12/2020.

Accepted on 01/29/2021.

DOI:<https://doi.org/10.1590/2177-9465-EAN-2020-0476>

INTRODUCTION

When celebrating in the year 2020 the bicentenary of the birth of Florence Nightingale, a precursor of modern Nursing in the world, it is necessary to reflect on the recovery of her teachings, whose marks are registered in being and doing Nursing in the world.¹ In this perspective, for facing the changes and complexity of health systems, it is important to highlight the importance of innovative methodologies with regard to teaching and nursing practice, aiming to ensure the organization of nurses' work amid so many challenges, and this is also done through the application of the five stages of the nursing process, enabling the application of the nursing diagnostic process with quality; for such, nurses must be prepared with regard to critical thinking and clinical reasoning skills to face the moral dilemmas and risk situations that will be exposed.

In this sense, the importance of the nursing profession in health care is even more visible during the COVID-19 pandemic with difficult choices due to the urgent human needs of patients and resource limitations. In this context, the critical and holistic thinking skills of nurses who perform management and care are of fundamental importance to ensure the best results.

Critical thinking is the process of forming a reflective judgment about what to believe or what to do in any given context. It is reflective, because it is open to self-monitoring and self-correction.² Applies cognitive skills, including analysis, inference, evaluation, interpretation and explanation. More than skills, strong critical thinking is driven by consistent internal motivation to apply those skills. An orientation towards the search for truth, curiosity, confidence in reasoning, organization, forecasting, and maturity of judgment are elements that characterize strong critical thinkers. Individuals are able to become strong critical thinkers, and groups or teams that work together to solve problems.²

For this, it is important to develop strong intellectual skills with nurses, as well as technical-scientific, ethical, aesthetic and humanistic skills. At the time of this pandemic, the best nurses are demonstrating the ability to investigate, diagnose, set goals and intervene based on evidence, without losing the holistic perspective. Holistic critical thinking can be applied to the nursing diagnostic process in the first and second steps, because "when getting the right problem" this will be the first and most important step in solving the problem. The application of strong critical thinking, associated with good clinical data and solid technical and scientific knowledge, are essential for accurate diagnoses to be built, diagnoses that take into account all relevant factors.^{2,3}

The pandemic context evokes nursing students to the need to acquire knowledge, skills, and competencies capable of subsidizing nursing care that is human, ethical, safe, and based on the best scientific evidence for the quality of care. Thus, it can be inferred that innovative teaching methodologies will contribute to the development of critical thinking skills are essential for improving clinical decision-making by nurses in complex situations like the one we are experiencing.³

In view of the above, this reflection article aims to reflect on the development of critical thinking in nursing education in

times of Covid-19 pandemic, with a view to improving students' decision-making and clinical reasoning. Based on this, the aim is to ensure a safe environment for the development of competencies, skills, and attitudes that are fundamental to the practice of nurses.

METHOD

This is a theoretical-reflective study based on the experiences of researchers from the Post-Graduate Program in Nursing at the Universidade Federal de Santa Catarina (UFSC) in partnership with researchers from the Undergraduate Program in Nursing at Lovisenberg Diaconal University College (LDUC) of Norway and the Albert Einstein Israeli Faculty of Health Sciences (FICSAE) based on contemporary theoretical frameworks, findings and everyday experiences of nursing education in Brazil and Norway in times of the coronavirus pandemic.

RESULTS AND DISCUSSION

The importance of Critical Thinking for the advancement of nursing education and clinical practice

Critical thinking has relevant importance for the advancement of nursing education, as it allows nursing students to consider how problems are framed, the quality of evidence, the adequacy of methods, the reasonableness of treatment criteria, and the applicability of theories and principles. Rather than reacting to clinical situations spontaneously, nursing students with strong critical thinking skills will consider a wide variety of factors, including clinical data and the patient's family situation.² Stimulating critical thinking prepares future nurses to face the new challenges imposed by the globalized world with regard to comprehensive health care, including moments of uncertainty and adversity, such as the case of the COVID-19 pandemic.

It is considered that training institutions should prepare future professionals to face the challenges inherent in adverse situations, such as a pandemic. With regard to teachers, it is expected that they are aware and can reflect on the commitment to learn and teach in difficult times. It is believed that the inclusion of the theme of critical thinking in the curriculum and projects of nursing education will contribute to the development of skills and willingness to apply it in practice, for this, it is necessary that students can be actively involved in proposed activities, in addition, the cognitive and emotional aspects of learning in teaching practices should be addressed by teachers.

The cognitive aspect of critical thinking is the metacognitive ability to self-monitor and self-reflect. To develop this skill, students must be challenged in their learning, seeking to understand how the processing of information and initial beliefs that can interfere with their decision making occurs. It is expected that students not only learn about aspects of critical thinking, but also have access to fictitious or real experiences so that they can verify how decisions are made in the daily life of being and doing nursing.⁴

Based on this, teaching-learning activities should always take place in the context of nursing, not treating critical thinking as a general competence, but as a set of cognitive, behavioral skills, and habits of the mind. For this, the problem situations to be analyzed must be contextualized, aiming at clarity for the application of the different skills required in each case.⁵ Teachers must include in their teaching plans proposals for activities based on the problems of daily clinical practice, allowing students to think and reason clinically to make the best decisions. In addition, teachers should discuss and reflect on decisions made with students in order to show how students can think and act in specific situations.

In this context, the realistic simulation of clinical skills can be an effective strategy, considering that students interact and express their opinions in a safe and controlled environment, preparing them for the challenging practical reality of health services through stages such as debriefing. In addition, the implementation of teaching models based on technology requires the student to develop autonomy with regard to their learning and performance in practice, which can contribute to the quality of the training of nurses⁶. Such a teaching method requires of students the application of critical thinking in practice, when faced with the clinical situation in a controlled environment. This requirement demonstrates the importance of critical thinking for accurate clinical decision-making, resulting in better results in health care.⁶

One of the strategies to develop critical thinking in students is to allow them to actively participate in the learning process. Teachers should ask questions that stimulate critical thinking skills and that require solid interpretation, careful analysis, solid evidence, accurate assessment and careful explanation. In addition, teachers need to demonstrate the use of critical thinking skills in their teaching behavior, with this, is highlighted the importance of teachers to develop critical thinking itself to be prepared to teach critical thinking skills. To teach critical thinking, it is necessary to learn it beforehand, a fact that will greatly contribute to the safety and adequate treatment of patients in clinical practice.

Thus, it is known that adopting active teaching methods is one of the ways for teachers to support their students in the development of critical thinking. Scientific evidence reveals that active learning strategies stimulate critical thinking and are more positive than passive learning by means of traditional methods, which commonly do not develop cognitive skills in higher education students.^{7,8}

Different teaching strategies and methodologies capable of accelerating students' ability to think critically can be highlighted, which are: simulation, clinical discussions based on cases (collaborative) and role playing, group discussions, clinical practice, are ways to improve critical thinking and problem-solving skills.⁹⁻¹¹

Within this concept, the method starts from the construction of a problem situation, which provides a critical reflection, mobilizing the student to seek knowledge, in order to solve the problem situation. This mobilization encourages reflection and the proposition of more appropriate and correct solutions, bringing theoretical and practical reasoning closer and closer.

Such characteristics are present in some methods that can support teaching, among them Team Based Learning (TBL).¹²

Specifically on the use of TBL, a collaborative method that includes case resolution in one of its three stages, studies on the training of nurses revealed that the method provides a greater sense of responsibility and the development of central professional competencies in health, such as clinical knowledge and skills, critical thinking and problem solving.^{13,14} Collaborative and teamwork are characteristics of health services and, therefore, are skills that need to be developed in health professionals since undergraduate studies.¹⁵

During the pandemic, educational institutions needed to seek alternatives to replace face-to-face education. Specifically for undergraduate nursing courses, the challenge was to find effective alternatives to replace the practical activity so significant in the curricula of the courses.¹⁶ Nursing teaching institutions that already used TBL, or another collaborative method, before the pandemic, as is the case of the Albert Einstein Israeli Faculty of Health Sciences (FICSAE), who were able, for the most part, to transpose from the face-to-face method to the online using resources such as the breakout rooms present in the Zoom application and using the TBLC (Team Based Learning Collaborative) presented significant advantage in adapting to the new environment.

Educators must constantly update their pedagogical knowledge, including an understanding of themselves and the fundamentals of teaching and learning processes. Gaps in educator training can hamper performance, leading to teacher-centered methods, in which students receive knowledge instead of learning through participation and involvement.

The pedagogical and scientific competence of teachers is, therefore, an important factor in the adoption, use or development of new methodologies or strategies in nursing education. Teachers must learn about critical thinking skills to be able to create, adapt, innovate and implement pedagogical projects aimed at stimulating and evaluating critical thinking in nursing students.

Innovation to stimulate critical thinking in nursing: a challenge in times of pandemic

One of the biggest challenges of nursing education is to teach students to be independent critical thinkers when they participate in complex interprofessional practices. This is an important element of critical thinking, and its development requires students to perform professional practices in safe environments, free from the fear of evaluation or judgment. In addition, it is important to develop and apply innovative methods and strategies in practice that are capable of stimulating critical thinking among nursing students.

With the advent of the COVID-19 pandemic, arose the need for an innovative approach to curriculum development and new learning projects. When educational conditions changed, pedagogical challenges were launched and the opportunity for teachers to adapt quickly to these changes, in order to facilitate learning, however this movement, has tensioned pedagogical innovation in the face of previously unthinkable demands.

The COVID-19 pandemic required drastic changes in teaching models, with teachers and students being required to use massive distance learning methods that were often criticized for their low reach, especially in the public education system, given the difficulties of access by students, even in realities of private services, the student's devaluation in relation to the benefit of remote education and the urgency of face-to-face teaching based on human interaction is perceived, so it is important to reflect on the impact of the pandemic on education in nursing and how to provide a basis for new learning models with the support of technologies aiming to develop critical thinking in an interactive way and with better performance than what we are seeing in practice.

Higher education institutions were required to change study devices from the on-site to the remote. The use of three-dimensional simulation, asynchronous and synchronous online lectures, activities, and questionnaires in a learning management system are examples of alternatives that offer flexibility as teaching methods.¹⁷

Mandatory practical activities require guidance models supported by technology allowing teachers to provide continuous feedback (advising, monitoring and evaluating) to nursing students remotely. These guidance models often include applications in which students must complete daily electronic reports before starting and after finishing the day of clinical practice. The data is stored on a server and made available for evaluation. By completing electronic reports before starting activities on the day in practice, students raise awareness of learning objectives and focus on carrying out their daily activities. The applications supported by technologies were widely used around the world, however, in Brazil, it was noticed the race on the part of the training institutions and teachers for the development of these devices that previously to the pandemic were underused and still little explored as a strategy to qualify the teaching in nursing and health.

Technology-supported methods stimulate dialogue between students and teachers, providing adjustment of expectations in relation to students' learning focus and ensuring an accurate assessment of learning outcomes. The technology-oriented models also include virtual meetings, in which students and teachers can discuss and reflect on dilemmas and situations experienced in clinical practice, as well as digital assessment, in which teachers, field nurses and students can complete assessment forms in the application and hold virtual meetings. The technology-supported orientation model is based on the principles of metacognition, which encourages critical thinking.¹⁸ In contrast, metacognition in countries such as Norway that have a tradition in remote education and the implementation of new technologies to add quality to the teaching-learning process used these devices with greater tranquility.

Filling in electronic reports after the shift encourages students to reflect on what they have learned during the day. The format of the electronic reports can be structured with multiple choice questions, and the content can be based on the areas of nursing competence and learning outcomes required for each

phase of the course. Students also receive personalized daily feedback from the tutor based on electronic reports and up-to-date follow-up in clinical practice. Feedback can be provided by text message or audio file and students can adjust their learning plan and activities. The teacher can access student reports and the feedback overview at any time and support students, nurses, and teachers at any time during the internship.

In this same direction, the innovative and urgent use of telesimulation stands out, as a teaching method that focuses on issues of hygiene, screening, and monitoring of patients and the placement and removal of protective equipment, while providing safety to students and their families. With the use of telesimulation, it is possible to develop critical thinking, preparing them and qualifying responses to outbreaks of infectious diseases such as coronavirus infections.

The COVID-19 pandemic has shown us that in addition to technology, it is necessary to develop different teaching methods and models. It is necessary to be willing to apply critical thinking in teaching practices and face a scenario of constant changes, leaving the comfort zone, and innovating in teaching methodologies, in order to guarantee the development of the essential skills for the nurse's practice.

Although technological innovations are contributing to educational challenges related to COVID-19, they also show disadvantages. Distance-learning students can feel lonely and seem to depend on human and social interaction with teachers and colleagues.¹⁷ Therefore, it is up to the training institutions and faculty to care for these students, motivating and encouraging them in the carry out of activities in addition to the proposed content, but with a view to the physical and mental health of its students, providing them when necessary online emotional support. The interpersonal skills of the student and the teacher must be improved in this challenging context. The implementation of synchronized video classes can reduce students' feeling of loneliness.

Finally, it is expected to awaken in trainers a commitment to the act of teaching in times of change, adapting their teaching practices with emphasis on the importance of holistic critical thinking in achieving positive results in the face of difficult and challenging situations like the one we are facing. It is necessary to ensure that the teaching discourse can be carried out in practice, in the act of teaching - learning and doing nursing with a view to qualifying health systems in Brazil and in the world. The challenge is launched!

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

This article highlights the importance and responsibility of educational institutions in the training of nursing students to become critical thinkers, supporting the holistic perspective of nursing care. To achieve this goal, nursing educators must be committed and able to adapt their teaching method in times of change and challenges. This can be done, among other ways, by

applying a deliberate combination of pedagogy and technology adapted to the educational context. Within the limits of this study, there are few studies on the development of critical thinking with innovative methods in the context of pandemics. It is noteworthy that being up to date on teaching strategies that use technological innovations and pedagogical methodologies is not an option; it is a necessity for the successful development of critical thinkers trained in the COVID-19 pandemic.

AUTHORS' CONTRIBUTION

Theoretical reflection study design. Fernando Riegel. Jussara Gue Martini. Paula Bresolin. Andrea Gomes C. Mohallem. Andréa Aparecida Gonçalves Nes.

Survey of sources and information. Fernando Riegel. Jussara Gue Martini. Paula Bresolin. Andrea Gomes C. Mohallem. Andréa Aparecida Gonçalves Nes.

Reflexive analysis. Fernando Riegel. Jussara Gue Martini. Paula Bresolin. Andrea Gomes C. Mohallem. Andréa Aparecida Gonçalves Nes.

Reflexive interpretation. Fernando Riegel. Jussara Gue Martini. Paula Bresolin. Andrea Gomes C. Mohallem. Andréa Aparecida Gonçalves Nes.

ASSOCIATE EDITOR

Antonio José Almeida Filho

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