

[DOI: 10.21519/j.ponte.2020.12.06](https://doi.org/10.21519/j.ponte.2020.12.06)

Discussion Article

NURSING EDUCATION IN THE LIGHT OF THE COVID-19 PANDEMIC: STIMULATING CRITICAL THINKING THROUGH INNOVATIVE TEACHING METHODS

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LDUC and DIKU. Project number AKTIV-2018/10101

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Keywords: Critical thinking; nursing education; health care; pandemic; COVID -19; pedagogy.

INTRODUCTION

Nurses are constantly managing complex situations and are the healthcare professionals with most constant proximity to patients and as such vulnerable to moral dilemmas and hazardous situations. The importance of the nursing profession in healthcare has become more visible with the COVID-19 pandemic. Experiences show that, due the current pandemic, nurses face difficult choices due to overwhelming patient needs and resource constraints. Pandemic situation also requires careful assessment of environmental, epidemiological and global analyses. In this context, the importance of critical thinking skills for nurses performing analytical work is essential to improve results in healthcare for the population (Cheng et al., 2020).

Critical Thinking consists of forming a reflexive 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. Critical thinking includes cognitive skills as analysis, inference, evaluation, interpretation and explanation. Strong critical thinking is driven by consistent internal motivation to apply such skills. An orientation to the search for truth, curiosity, confidence in reasoning, organization, prediction and maturity of judgment are elements that characterize strong critical thinkers (Facione & Gittens, 2016).

In the light of the Covid-19 pandemic, this discussion article aims to contribute with reflections in the discourse on the educational institutions' and educators' responsibilities to enhance nursing students' ability and confidence to engage in critical thinking and how this can be achieved through innovative teaching methods. Developing critical thinking skills is essential for nurses to be able make relevant and accurate clinical decisions also under complex situations and pressure (Riegel,

2018). Especially in the case of a pandemic, nursing students need to gain sufficient knowledge, skills and competence to offer a humane, ethical, safe, aesthetic, solidary and evidence-based nursing care with high level of quality.

The importance of critical thinking in nursing education

Critical thinking allows nursing students to consider how problems are framed, the quality of evidence, the adequacy of methods, the reasonableness of the treatment criteria, the applicability of theories and principles. Instead of 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. Stimulation of critical thinking could prepare future nurses to face new challenges imposed by the globalized world with regard to healthcare, including moments of uncertainty such as the Covid-19 pandemic (Riegel, 2018).

Educational institutions must prepare future professionals with the ability to face and handle these challenges. From the educators, awareness and reflection around the commitment about how to teach in times of change, is expected. To help nursing students build their capacity for critical thinking, it must be integrated in the curriculum and teaching designs that engage students actively. Both cognitive and emotional aspects of learning need to be addressed. The cognitive part of critical thinking is the metacognitive skill of self-monitoring and self-reflection. The ability to carefully comprehend information in an analytic and reflective manner, from the outside world and from your own thoughts and initial beliefs. To facilitate for the cognitive skills of critical thinking students need to be challenged in their learning. They need to learn how to be conscious about their information processing and initial beliefs that can interfere with the decision making. Students cannot only learn about the aspects of critical thinking but need to be given first-hand experience with learning activities which makes students aware of how they make decisions on the basis of different sources of knowledge addressed (Edwards, 2007).

Furthermore, critical thinking is not a general ability, but is strongly connected to the domain where the critical reasoning is taking place. Learning activities should always be within the context of nursing, not treated as a general competence. If not, students may not be able to transfer the critical thinking competence learned in campus to the clinical practice (Ormrod, 2020). Educators should include in their teaching plans proposals for activities based on the problems of everyday clinical practice, allowing the student to think and reason clinically to make the best decisions. In addition, educators must discuss and reflect with the students on the decisions made, seeking to highlight how they can think and act in certain situations.

One of nursing educations biggest challenges is to teach students to be independent thinkers when taking part in complex inter-professional practices. According to Bickhoff et al. (2017) students often feel obliged to confirm or take command in practice situations, even if it may have a negative impact on patient care. Therefore, nursing students should develop a professional confidence and courage to speak their mind. This aspect is an important part of critical thinking and demands that students practice professional discussions in a safe environment without the fear of evaluation or judgment. In this perspective, realistic laboratory simulation of clinical skills can be an effective

strategy, as it allows students to interact and express their opinions in a controlled and safe environment, preparing them for the challenges of the practical reality of health services. In addition, the implementation of teaching models supported by technology requires students to develop autonomy in relation to their learning and performance in practice, which can contribute to the quality of the training of nurses.

The key to develop critical thinking in students is to let them take an active part in the learning process. Educators must ask questions that evoke critical thinking skills and that require sound interpretations, careful analysis, solid indifference, accurate assessments and thoughtful explanations. The demands to demonstrate critical thinking naturally increase as educational levels advance. In addition, educators should demonstrate, by their own behavior the use of critical thinking skills. The importance of critical thinking emphasizes the need of preparing educators to teach critical thinking skills. Failure to teach critical thinking can generate health professionals lacking this ability leading to drastic consequences for the safety and proper treatment of patients in care settings.

Educators need to constantly update their pedagogical knowledge which includes, the educator's understanding of themselves and the fundamentals of teaching and learning processes. Gaps in educator training can impede performance, leading to teacher centered methods where students receive knowledge rather than learn through participation and engagement. Educators pedagogical and scientific competence is therefore an important factor for the adoption, use or development of new methodologies or strategies in nursing education.

In summary, educators need to learn about critical thinking skills to be able to create, adapt, innovate and implement pedagogical design stimulate and evaluate critical thinking in nursing students. Educators have a unique opportunity to learn from the current situation and improve their curricula and teaching in how their students can provide high quality nursing care in constant, and currently unforeseen, challenges in health care.

Innovation in stimulating critical thinking

The COVID 19 pandemic have highlighted the necessity of an innovative approach to developing curricula and new learning designs. When educational conditions changes, it brings pedagogical challenges and an opportunity for educators. A challenge, because one must quickly adapt to the changed conditions for facilitating learning. But also, an opportunity because changed conditions forces educators to look at things differently, which ultimately can lead to pedagogical innovation. In regard of COVID-19 the conditions for nursing education changed drastically. Therefore, it could be interesting to reflect upon its impact on nursing education and how it can give grounds for new technology supported learning designs that can foster critical thinking.

Generally, technological advances are contributing positively to the challenges related to nursing educational in pandemic context. In this period, universities were forced to adapt studies from personal to remote mode. The use of three-dimensional, asynchronous online lectures, assignments

and quizzed on the learning management system are examples of alternatives that offers flexibility as teaching methods (Bingen et al., 2019).

According to Dieckmann et al. (2020) by using telesimulation it is possible to develop critical thinking, prepare and improve responses to outbreaks of infectious diseases such as COVID-19. The use of telesimulation as teaching method focused on hygiene issues, placement and removal of protective equipment, patient's triage and monitoring also provides safety to students and their families.

For courses requiring mandatory practical activities, a guidance model supported by technology can be used, in order to enable educators remote, advice, follow up and evaluate nursing students. Such guidance model includes: Guidance application, where students must complete daily e-reports before they starter and after they finish their internship day. The answers are stored in a server and available for assessment. By filling out the e-reports before starting their day in the clinical practice, students' increase their awareness of learning objectives and focus on their learnings' activities. By filling out the e- reports after the shift, students are stimulated to reflect about what they have learned during the day. The format of the e-reports is multiple-choice questions and the content is based on nursing competence areas and learning outcomes related to the current internship. Students also receive daily tailored feedback from the preceptor based on the e-reports and current follow-up in clinical practice. The feedback can be given by text message or audio file. Students can adjust their leaning plan and activities based on the received feedback. The educator can access the students reports and feedback overview any time and support the students and preceptors when needed. These processes stimulate a dialog between students and preceptors, leading to an adjustment of expectation regarding students' learning focus assuring a more accurate evaluation of students' leaning outcomes; Virtual meetings, where students and educators can discuss and reflect about dilemmas and situations experienced in clinical practice; Digital evaluation where educators, preceptors and students can complete the evaluation form by using an application and perform a virtual agreement meeting. In this meeting the final evaluation is completed, the users electronically sign the evaluation form and the result is automatically sent to the educational institution. The described guidance model is based on the principles of metacognition which stimulates critical thinking (Nes et al., 2020).

Although technological innovations are helping to face the challenges related to COVID-19, disadvantages also occur. According to Bingen et al. (2019), students who were taught remote could experience loneliness and seem to be depended on physical and social interaction with the educator. This shows that it important taking care of these students, motivating and encouraging, creating links and providing support, even if it is online. Interpersonal skills between student and teacher must be present in this challenging context. The use of synchronous video lectures might reduce students feeling of loneliness.

The current pandemic moment is showing us that we still need to make a lot of progress in terms of different teaching methods and models. It is necessary to be prepared for a scenario that requires changes. Leaving the comfort zone, to innovate and to teach differently is needed. The repeated

practice can end automatically and thoughtless or with little meaning for the constitution of the professional being of the future.

Final considerations

This article highlights the importance and responsibility of educational institutions in training nursing students to become critical thinkers without losing the holistic perspective of nursing care. To achieve this purpose, the nursing educators must be committed and able to adapt their method of teaching also in times of change and challenges. This can be done, among other things, by applying a deliberate combination of pedagogy and technology adapted to the educational context. Being up to date on teaching strategies that use technological innovations and pedagogical methodologies is not an alternative, it is a necessity to succeed in developing critical thinkers.

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