

Teaching method to increase critical thinking in health profession student: a literature review



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ABSTRACT

Nursing students should have some competencies to be professional nurses, like creativity, the ability to think critically, and have good communication and collaboration skills. We change the traditional learning approach to a student-centered approach to improve critical thinking skills. Some studies implement the SCL methods and we need to know the role of SCL learning strategies in improving critical thinking skills. This literature review aims to analyze the role of the student-centered learning application in improving critical thinking skills in health profession students. The design used literature review with the articles reviewed is the result of original research selected based on inclusion and exclusion criteria using a database with electronic searches on Pubmed, Science Direct, Proquest, Sage Journal, and Google Scholar, published in 2016 - 2021 which contains teaching methods that can increase the health profession student's critical thinking skills. Search strategies with keywords and terms used in English are health profession student, student center learning, and critical thinking. The various learning methods used to improve the critical thinking of health profession students were case-based learning method, simulation learning method, cooperative learning method, problem-based learning method, team-based learning method, self-directed learning method, experiential learning method, and debate and role-play learning methods. All teaching methods are influential in increasing critical thinking in health profession students.

Keywords: *Critical Thinking, Health Profession Student, Student Center Learning.*

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INTRODUCTION

Nursing students should have critical thinking skills (CTS) before they become professional nurses. Critical thinking skills will be needed in doing the nursing process to solve the patients' health problems. Critical thinking is a high-level thinking process that can be used in conceptual learning for students.¹ Critical thinking is thinking that arises to decide something about what to believe or do, but it must be reasonable and in the same direction as the way of thinking. Nurses, being one of the healthcare providers, must be innovative and critical thinkers in order to make the best judgments and solve clinical problems.²

Several nursing research have been written about teaching methods used to improve critical thinking skills. According to Alfaro-LeFevre (1999), CTS is important for nurses for two reasons. To begin, thinking is the most important

aspect of problem-solving ability. Second, especially in critical situations, nurses should be able to make key judgments independently and rapidly.³ They can also use critical thinking abilities to find essential data and discriminate between situations that require immediate care and those that are not life-threatening. As a result, kids will be able to weigh the pros and disadvantages of each activity and make the best option possible.⁴

Critical thinking is considered to be an essential component of professional responsibility and quality care in health services.⁵ Critical thinking becomes also essential in health profession education because the health profession student is an important pillar in health service and critical thinking is an expected outcome of undergraduate health students throughout the world.⁶ The lack of critical thinking in new graduates can affect the quality of services and patient safety negatively.⁷ According to the study, up to 88 percent

of novice nurses make medication errors, with 30 percent of these errors being caused by a lack of critical thinking.⁷ According to a study conducted by Jafrabady (2010) among 150 students at Ferdowsi University of Mashhad, critical thinking scores were low among all of them, from first-year to fourth-year students.⁸

We can see based on the research above, it seems that health education institutions should focus more on the learning process of critical thinking and choose teaching methods that are suitable for the learning program to make the fresh graduate can have the ability of critical thinking. Several studies about the learning and teaching methods in critical thinking learning programs have investigated different health care, professional students. Only a few studies focused on teaching methods mostly focused on measuring the acquisition of critical-thinking skills and the tools to assess it. The majority of studies have been conducted in nursing.⁹

The teaching learning process in university has an important role in improving critical thinking skills. This shows that there is a need for changes teacher-centered learning approach to students centered learning so that students can find, explore, and solve problems with their abilities.^{10,11} Student-centered learning approach is a more active learning method that is very important to be applied to train students in critical thinking so that students independently can continue to develop their abilities in knowledge and understanding of a concept.

Various teaching or learning strategies, such as PBL connected with, nursing case-based learning, and others, have been demonstrated to improve critical-thinking skills among students in past studies, which will be examined more in this article. No published literature review has focused looked at the teaching methods to improve critical thinking in health profession students. Therefore, this study aims to explore the literature to find out various teaching methods that increase critical thinking in health profession students.

METHODS

The databases used in this literature review were Pubmed, Science Direct, Proquest, Sage Journal, and Google Scholar. The literature search used the keywords: student center learning, critical thinking, and health profession student in various combinations. The search focuses on articles that contain learning methods that can be beneficial in improving the critical thinking skills of students who learn in the field of health

The inclusion criteria in this literature review included articles published in 2016-2021, studies involving health science students. Articles were available in full text and English, a single study containing learning methods that can trigger critical thinking skills of students who learn in the field of health. Articles with quantitative, qualitative, or mixed-method research methods were included. Articles were excluded if the article only contains an abstract, short communication, or a review article.

LITERATURE REVIEW

Various Learning Methods to Improve Critical Thinking of Health Profession Students

There are 12 studies included in this literature review. Almost all studies state that learning methods can improve critical thinking in health profession students, however, the significance is still unclear at this time due to heterogeneity among the 12 studies. The research is heterogeneous in terms of research design, research samples, and research methods used. Various design studies such as quantitative designs, qualitative designs, and other designs can be used in research. Based on the search results, it is known that various kinds of learning methods can improve the critical thinking skills of health profession students. Therefore, it cannot only take one method and then discard one of them.

From the research that has been reviewed, it shows that several studies state that there are various types of methods that can improve the critical thinking of health profession students, such as:

1. Case-Based Learning Method (CBL)

According to Li et al (2019), it is stated that nursing case-based learning is a very effective course for developing the critical thinking skills of nursing students.¹² Meanwhile, according to Gholami et al, For Iranian nursing students, case-based learning is a challenging yet rewarding activity and an empowering experience. Through the construction of a good environment, CBL promotes critical thinking and stress management abilities, enhances potential coworkers, improves diagnostic skills, and aids in the acquisition of professional competencies for use in future practice.¹³

2. Simulation Learning Method

Virtual simulations for students to develop critical thinking can currently be utilized to Korean nursing students, according to Kang et al, but they must be modified to the Korean language and clinical context.¹⁴ Learning self-efficacy following S-PBL shows a substantial positive link with the propensity to think critically and problem-solving skills, according to Lim et al, there is

a correlation between critical thinking tendency and the degree of problem-solving skill. S-PBL (simulation-linked problem-based learning) is a problem-solving exercise that uses examples from real-life scenarios. S-PBL has been shown to improve the efficacy of autonomous learning and critical thinking tendencies in nursing students. Because self-efficacy and critical thinking tendencies in students influence new nurses' clinical performance after graduation, S-PBL education should be used to improve this. To maximize the efficiency of S-PBL, scenarios based on various clinical cases must be developed, and learning approaches must be used to experience the problem-solving process.¹⁵

Meanwhile, according to Amod et al, including high-fidelity simulations into the undergraduate curriculum helps students to experience real-life circumstances in a safe learning environment, and simulations boost practice, reducing the amount of time required to attain clinical competence. Many studies suggest using the SLP approach in the learning process since it can supplement clinical training, but further study is needed to refine the method and assess the influence of simulation on clinical performance.¹⁶

3. Cooperative Learning Method

According to Zhang et al, clinical practicum-based cooperative learning that was applied to improve students' critical thinking turned out to be very useful for promoting students' critical thinking dispositions.¹⁷

4. Problem Based Learning Method (PBL)

According to Gholami et al, the PBL technique has a statistically significant effect on the development of critical thinking abilities and metacognitive awareness in nursing students; nevertheless, classroom management and details of the PBL method's implementation are vital for continued skill development.¹⁸

5. Team-Based Learning Method (TBL)

Silberman et al. explained that TBL increases critical thinking skills by

presenting evidence, but that further study is needed to pinpoint specific parts of TBL that affect critical thinking.¹⁹

6. Self Directed Learning Method (SDL-Method)

According to Obied et al, the SDL technique helps nursing students develop their critical thinking skills. Pre-intervention SDL preparedness levels were moderate to poor in both experimental and comparison nursing student groups, and the majority of them were between levels one and two of the holistic critical thinking evaluation rubric, which dramatically improved post-intervention.²⁰

7. Experiential Based Learning Program (ELP)

According to Cheng et al mention, that self-reflection and critical thinking may have the same core, which results in a significant positive correlation. The essence of the learning experience is that students learn through active participation, gain knowledge and insight, and intervention in the ELP curriculum, helping students to improve their self-reflection and critical thinking skills. Because the ELP program can be carried out without dealing with people, it is suitable for use during the pandemic.²¹

Meanwhile, according to Zhang et al explaining that reflection training based on new mentoring can encourage Chinese nursing students to explore, think, and solve problems actively during the internship, and consequently foster students' critical thinking disposition and improve the quality of practical nursing education.²²

8. Debate and Role Playing Learning Method

Role-playing and debate are both well-accepted by students in the PBL curriculum as successful teaching methodologies, according to Latif et al. Both are seen to be equally effective in helping pupils improve their communication abilities. It is suggested that this low-cost experiential learning tool be adopted and incorporated in medical education to promote active learning, improve critical thinking and communication skills, experience

real-world scenarios, and effectively convey components of basic medical and clinical subjects.²³

Importance of Critical Thinking in Health Profession Students

Critical thinking is very important to be studied by health profession students and developed by health educators to produce professional graduates and avoid mistakes in health services. The main thing that must be improved so that every graduate can think critically is to improve learning by choosing the right learning method and suitable for the learning program. This study aims to look at various teaching methods that can be used to improve the critical thinking skills of health profession students. Based on 12 articles included in the study, it is known that various methods have been studied in teaching critical thinking skills to students, each method is considered to have a positive influence on students' critical thinking skills. PBL and CBL have a significant effect on improving students' critical thinking skills, this is also supported by a study conducted by Carbogim *et al* (2018) that learning with PBL is highly recommended to improve critical thinking in students.²⁴

Modern learning strategies include case-based learning, problem-based learning, and simulation-based learning. These teaching methods enable students to improve their logical and critical thinking, allowing them to expand their thinking and professional knowledge.²⁵ Appropriate learning methods that are easily accepted by students, such as cooperative learning approaches, can give learning experiences that encourage students to think critically, master topics, and be more motivated.²⁶

According to the findings of this study, team-based learning is one of the instructional approaches that may be used to develop students' critical thinking skills. Students benefit from learning in a team-based atmosphere in a variety of ways, one of which is that it can enhance their capacity to think critically.²⁷ When students learn in groups, they are focused on the subject at hand and actively interact with the material being discussed. Students must investigate several scenarios and reasoning processes, as well as discuss their ideas with team members in order to

respond to a stated issue. This peer-to-peer teaching and learning has the potential to significantly improve student performance and critical thinking skills.²⁸

Other methods are also considered very good for improving students' critical thinking skills, but in its application, the institution may have to pay attention to several things that can be a factor supporting the success of the teaching method, such as culture, student characteristics, needs, and learning objectives. This review has limitations, most of the included studies focused on education in nursing, researchers did not find enough articles about teaching critical thinking methods to students of other health professions because research on it was very limited. For future research, the authors highly recommend discussing and researching further about the effectiveness of each method on learning goals and student attitudes and developing conceptual frameworks on how to apply each method in health education so that it can be more useful later in developing health education.

CONCLUSION

Based on the discussion, it can be concluded that the learning methods that can be used to improve critical thinking for health profession students are case-based, simulation learning methods, cooperative learning methods, problem-based learning methods, team/group-based learning methods, self-directed learning methods, experiential learning program method, and debate learning method and role play. Authors recommend further research to implement each method based on the specific learning objective in nursing and health profession students.

CONFLICT OF INTEREST

The authors do not have any conflict of interest.

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ETHICS APPROVAL

Not Applicable.

AUTHOR CONTRIBUTION

The authors responsible for the study from the literature search, data gathering, data analysis, until reporting the results of the study by a narrative form of the review.

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