Teaching Strategies for Nursing Students' Clinical Reasoning Skills

Subjects: Nursing

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Clinical reasoning (CR) is a holistic cognitive process. It allows nursing students to accurately perceive patients' situations and choose the best course of action among the available alternatives. This process is consistent, dynamic, and flexible, and it helps nursing students gain awareness and put their learning into perspective.

Keywords: nursing student ; clinical reasoning ; clinical decision making ; thinking skills

1. Introduction

Clinical reasoning (CR) is a holistic cognitive process. It allows nursing students to accurately perceive patients' situations and choose the best course of action among the available alternatives. This process is consistent, dynamic, and flexible, and it helps nursing students gain awareness and put their learning into perspective [1]. CR is an essential competence for nurses' professional practice. It is considered crucial that its development begin during basic training [2]. Analysing clinical data, determining priorities, developing plans, and interpreting results are primary skills in clinical reasoning during clinical nursing practise [3]. To develop these skills, nursing students must participate in caring for patients and working in teams during clinical experiences. Among clinical reasoning skills, researchers can identify communication skills as necessary for connecting with patients, conducting health interviews, engaging in shared decision-making, eliciting patients' concerns and expectations, discussing clinical cases with colleagues and supervisors, and explaining one's reasoning to others [4].

Educating students in nursing practise to ensure high-quality learning and safe clinical practise is a constant challenge [5]. Facilitating the development of reasoning is challenging for educators due to its complexity and multifaceted nature [6], but it is necessary because clinical reasoning must be embedded throughout the nursing curriculum [7]. Such being the case, the development of clinical reasoning is encouraged, aiming to promote better performance in indispensable skills, decision-making, quality, and safety when assisting patients [8].

Nursing education is targeted at recognising clinical signs and symptoms, accurately assessing the patient, appropriately intervening, and evaluating the effectiveness of interventions. All these clinical processes require clinical reasoning, and it takes time to develop [9]. This is a significant goal of nursing education [10] in contemporary teaching and learning approaches [6].

Strategies to mitigate errors, promote knowledge acquisition, and develop clinical reasoning should be adopted in the training of health professionals. According to the literature, different methods and teaching strategies can be applied during nursing training, as well as traditional teaching through lectures. However, the literature explains that this type of methodology cannot enhance students' clinical reasoning alone. Therefore, nursing educators are tasked with looking for other methodologies that improve students' clinical reasoning [11], such as clinical simulation. Clinical simulation offers a secure and controlled setting to encounter and contemplate clinical scenarios, establish relationships, gather information, and exercise autonomy in decision-making and problem-solving [12]. Different teaching strategies have been developed in clinical simulation, like games or case studies. Research indicates a positive correlation between the use of simulation to improve learning outcomes and how it positively influences the development of students' clinical reasoning skills [13].

The students of the 21st century utilise information and communication technologies. With their technological skills, organisations can enhance their productivity and achieve their goals more efficiently. Serious games are simulations that use technology to provide nursing students with a safe and realistic environment to practise clinical reasoning and decision-making skills [14] and can foster the development of clinical reasoning through an engaging and motivating experience [15].

New graduate nurses must possess the reasoning skills required to handle complex patient situations. Aware that there are different teaching methodologies, researchers intend to discover which RCTs published focus on CR in nursing students, which interventions have been developed, and their effectiveness, both at the level of knowledge and in increasing clinical reasoning skills. By identifying the different techniques used during the interventions with nursing students in recent years and their effectiveness, it will help universities decide which type of methodology to implement to improve the reasoning skills of nursing students and, therefore, obtain better healthcare results.

2. Teaching Strategies

2.1. Clinical Simulation

The simulation methods focused on in the studies were virtual simulation (based on mobile applications), simulation games, and high-fidelity clinical simulation. Of the total number of nursing students in the studies referring to clinical simulations, 43.85% were in their second year, while 57.1% were senior-year students. The most used method in the clinical simulation group was virtual simulation, and 57.14% of studies included only one-day teaching interventions.

Virtual simulations were used to increase knowledge about medication administration and nasotracheal suctioning in different scenarios [16], to evaluate the effect of interactive nursing skills, knowledge, and self-efficacy [11], and to detect patient deterioration in two different cases [17]. Simulation game methodology was used to improve nursing students' cognitive and attention skills, strengthen judgment, time management, and decision-making [14].

Clinical simulation was used to develop nursing students' clinical reasoning in evaluating wounds and their treatments [12], to evaluate and compare the perception of stressors, with the goal of determining whether simulations promote students' self-evaluation and critical-thinking skills [18], and also to evaluate the impact of multiple simulations on students' self-reported clinical decision-making skills and self-confidence [19].

2.2. Learning Programs

Different types of learning programmes have been identified: team-based learning, reflective training programs, person-centred educational programmes, ethical reasoning programmes, case-based learning, mapping, training problem-solving skills, and self-instructional guides. Of the total number of nursing students in the studies referring to learning programs, 57.1% were junior-year students, while 43.85% were in their senior year.

Team-based learning is a learner-centred educational strategy that promotes active learning to improve students' problem-solving, knowledge, and practise performance. It can be implemented in small or large groups divided into teams with an instructor and reading material based on case scenarios [20]. Reflective training is based on a new mentoring practise to explore, think about, and solve problems actively during an internship. During the reflective training program, the mentors lead students to uncover clinical nursing problems through conversations with them and discussing feedback for their professional portfolios [21]. The person-centred educational programme focuses on how nursing students perceive individualised care, using design thinking to improve their perception. The use of design thinking gave the students opportunities to apply their theoretical knowledge of the person-centred program to plan innovative solutions that may effectively resolve real-life situations [22]. Another educational programme identified is the ethical reasoning program, and the aim of this is to improve nursing students' handling of ethical decision-making situations [23], engaging the students in complex ethical clinical situations based on real cases.

Case-based learning was used to explore and demonstrate the feasibility of implementing unfolding cases in lectures to develop students' critical-thinking abilities [24]. The web-based concept mapping of nursing students was also investigated to determine its impact on critical-thinking skills [25]. Training problem-solving skills were used to find out how it affected the rate of self-handicapping among nursing students [26]. And the last article evaluated the effect of the self-instructional guide to improve clinical reasoning skills on diagnostic accuracy in undergraduate nursing students [27].

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