Technical training and practical performance of the teacher in the face of realistic simulation: scope study

Capacitação técnica e atuação prática do docente frente à simulação realística: estudo de escopo

Formación técnica y desempeño práctico del docente ante la simulación realista: estudio de alcance

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RESUMO

Objetivo: avaliar a capacitação técnica e atuação prática, bem como as dificuldades e desafios dos docentes frente à metodologia da simulação realística. **Método:** Esta revisão foi elaborada de acordo com metodologia de um scoping review (análise de escopo). A pergunta principal a ser respondida foi: "Tem sido estudada e mensurada a capacitação dos docentes do curso de graduação em Enfermagem, diante da aplicação de práticas na metodologia de Simulação Realística?". **Resultados:** Dentre os artigos avaliados, seis foram escolhidos, e as principais barreiras percebidas, nos estudos, foram as organizacionais, como falta de recursos financeiros e de infraestrutura tecnológica para o aprimoramento dos docentes, além de outros aspectos, como falta de informações sobre a importância da prática baseada em evidências, educação continuada para os professores e falta de tempo no cotidiano do trabalho para treinamentos institucionais. **Conclusão:** Há poucas evidências científicas nacionais que determinem necessidade da capacitação técnica e atuação prática, bem como as que evidenciam as dificuldades e desafios dos docentes frente à prática da simulação realística.

Descritores: Ensino; Enfermagem; Simulação de Paciente; Treinamento com Simulação de Alta Fidelidade; Treinamento por Simulação..

ABSTRACT

Objective: to evaluate the technical training and practical practice, as well as the difficulties and challenges of teachers in the face of the methodology of realistic simulation. **Method:** This review was prepared according to the scope analysis methodology (scope analysis). The main question to be answered was: "Has the training of professors of the undergraduate nursing course been studied and measured, given the application of practice in the Realistic Simulation methodology?". **Results:** Among the articles adopted, six were chosen, and the main barriers perceived in the studies were organizational ones, such as lack of financial resources and technological infrastructure for the improvement of teachers, in addition to other aspects, such as lack of information about the importance of evidence practice, continuing education for teachers and lack of time in daily work for institutional training. **Conclusion:** There is national scientific scientific evidence that determines the need for technical training and practical practice, as well as the difficulties and challenges of teachers in the face of the practice of realistic simulation.

Descriptors: Teaching; Nursing; Patient Simulation; High Fidelity Simulation Training; Simulation Training.

RESUMEN

Objetivo: evaluar la formación técnica y práctica práctica, así como las dificultades y desafíos de los docentes ante la metodología de simulación realista. **Método:** Esta revisión se elaboró de acuerdo con la metodología de análisis de alcance (análisis de alcance). La pregunta principal a responder fue: "¿Se ha estudiado y medido la formación de los profesores de la carrera de enfermería, dada la aplicación de la práctica en la metodología de Simulación Realista?". **Resultados:** Entre los artículos adoptados se eligieron seis, y las principales barreras percibidas en los estudios fueron organizativas, como la falta de recursos económicos e infraestructura tecnológica para el mejoramiento de los docentes, además de otros aspectos, como la falta de información sobre la importancia de la práctica de la evidencia, la formación continua de los docentes y la falta de tiempo en el trabajo diario para la formación institucional. **Conclusión:** Existe evidencia científica científica nacional que determina la necesidad de formación técnica y práctica práctica, así como las dificultades y desafíos de los docentes ante la práctica de la simulación realista.

Descriptores: Docencia; Enfermería; Simulación de pacientes; Entrenamiento de simulación de alta fidelidad; Entrenamiento de simulación.

REVIEW

Introduction

The concern with the development of skills and continuing education has led to semiology and other health disciplines to promote a less directive and more stimulating teaching of the active participation of students.[1]

In this new context, the use of simulation has become an important part of the courses, representing an innovative, practical and ethical way of acquiring skills by students.[2] According to the Harvard Simulation Center's definition, "simulation is a situation designed to allow people to experience the representation of a real event for the purpose of practicing, learning, evaluating, testing, or understanding human systems or actions".[3]

Since simulation is a practice with good results for learning clinical contents, there are experiences that guide the constructivist conception and start from the premise that learning is not to reproduce reality, but to be able to elaborate a personal representation about the situation presented.[4] Thus, the experience of simulated situations allows greater development of knowledge, skills and attitudes of students.[5]

The use of simulation, in undergraduate studies for the various courses in the health area, promotes benefits in the teaching-learning process, since it offers conditions for the training of numerous skills essential for the various professional practices.[6] Among them, we can include not only the training of procedural skills, but also the communication skills with patients, family members and multidisciplinary team, in which the development of teamwork relationships, including the ethical and humanistic approach of patients[7], better standards of care and training, management of errors and patient safety, patient autonomy, social justice and distribution of resources.[5]

Among the advantages of simulation-based teaching is the possibility of repetition of skills, seeking a progressive acquisition of skills and competences, in addition to allowing experiences of situations close to the real before direct contact with the patient, which promotes a collaborative, motivational and significant learning.[8-11]. Examples of this are urgent and emergency situations, in which previous observation and action provide greater security in care, requiring knowledge, efficiency and ability in decision making.[1]

The technology has been used as an ally of new teaching methodologies, with scientific proof that this educational strategy should integrate part of the training.[2] The mannequins and simulators available today, with advanced digital features and anatomical details of great fidelity to the human body, allow the simulation of simple to complex situations of a given occurrence or clinical picture. However, despite all existing technological resources, the preparation of teachers to facilitate this process is mandatory for the success of the activity, that is, very high investment in technology does not guarantee effectiveness in training; a well-designed contextualization will have real meaning to students, leading them to reflection and retention of their knowledge.[7]

Teachers should work together in deciding which topics may or may not benefit from the simulation, since it can be inserted at all times of the course in which it is necessary to work on the clinical reasoning of the students, and this should not necessarily be linked to procedures or therapeutic conducts, but to transfer theoretical content so that it is practical.[7]

Finally, simulation is not a substitute for clinical practice, but a complement to training, enabling the student's contact with situations that would not always be possible in the clinic, making teaching more uniform for this and more ethical for patients. Its curricular insertion should be carried out in an integrated way with the practices already existing in the curriculum of each university and can be inserted from the beginning of the course in association with other activities. The teacher's training in the methodology is essential for this activity to be motivating, in a controlled and significant environment.[7]

Based on the fact that the Clinical Simulation, or Realistic Simulation, has gained ample space in the training, training and/or updating of students and professionals from various areas of health, knowing that the teacher has a fundamental role in this teaching methodology, the objective of the work will be to evaluate the technical training and practical performance, as well as the difficulties and challenges of teachers in the face of realistic education.

Method

This review was prepared according to the methodology of a scoping review ,recommended by the Joanna Briggs Institute.[12] The scoping review technique is being widely used in the area of health sciences, with the purpose of synthesizing and disseminating the results of studies on a subject.[13-16] The objective of a scope analysis is to map, through a rigorous and transparent method, the state of the art in a thematic area, intending to provide a descriptive view of the reviewed studies , without critically evaluating them or summarizing evidence from different investigations, as occurs in a systematic review.[17]

Scope reviews differ from systematic ones because they do not aim to evaluate the quality of available evidence, but aim to quickly map the main concepts that support a research area.[17] However, they differ from a traditional literature review in that they involve a more systematic procedure.

In this perspective, this scope review used the methodological framework proposed by Arksey and O'Malley[17], with the amendments made by Levac, Colquhoun and O'Brien13, Peters and collaborators[18-19], scholars of the Joanna Briggs Institute. Adapting to our purposes, the structure of this review consists of six main consecutive steps: identification of the question and research objective; identification of relevant studies that would enable the breadth and scope of the purposes of the review; study selection, according to the predefined criteria; data mapping; sumarization of the results, through a qualitative thematic analysis in relation to the objective and question; presentation of the results, identifying the implications for politics, practice or research.

Initially, the following research question was defined: "Has the training of nursing undergraduate professors been studied and measured in the application of practices in the Realistic Simulation methodology?".

Next, the keywords (descriptors) that could capture the articles related to the theme of this research were identified, including: "teaching", "nursing" and "simulation".

For the identification of the relevant studies, we consulted the databases of journals of the VHL (Virtual Health Library). This database was selected because it is comprehensive, with wide coverage of publications in the health area. The following search strategy was used: "in Teaching OR Nursing OR

Simulation", which was developed by the third author (principal researcher) in collaboration with the first author and a librarian from Anhembi Morumbi University.

The capture of the documents was restricted to the following inclusion criteria: articles published in journals indexed in the health area, full text, Portuguese language. The initial year for the beginning of the search was 2015, and the collection (and updating) of the studies occurred in September 2020.

Results

All 1,401 studies found were incorporated into a spreadsheet in the Excel ®. Next, the 891 articles not related to the search were identified and excluded, leaving 510 studies. Of these, after reading the titles and abstracts, 96 were excluded because they did not present elements that met the objective of this review, and 170 were repeated. It is noteable here that, when the relevance of a study was not clear from the abstract, the complete article was retrieved for its full reading by the third author, in order to verify whether it adequately addressed the research issue. The 244 who remained in the selection were read; of these, 235 were excluded. The most common reasons for excluding studies were because they did not substantially address the challenges of teaching in the practice of Realistic Simulation in the undergraduate nursing course.

The nine studies selected to be part of this review were mapped through a spreadsheet in the Excel® program, with the following information: search date, descriptor, title, author(s), year of publication and objectives.

Table 1 - Articles selected after application of the methodological steps, regarding the author's name, title, year of publication and objectives of the study. São Paulo, 2020.

Professors working in the simulation for undergraduate courses in medicine and nursing: challenges, gains, improvements				
Date	**Descriptor**	**N°**	**Final Articles**	**Objectives**
17/set	Teaching	**1**	Eficácia da simulação no ensino de imunização em enfermagem: ensaio clínico randomizado	Evaluate the efficacy of clinical simulation in the cognitive performance of nursing students in adult immunization scenarios in the context of Primary Health Care.
20/set	Nursing	**2**	Types and purposes of the simulation in undergraduate nursing education: integrative literature review	Identify the types and purposes of simulation in undergraduate nursing education.
20/set	Nursing	**3**	Development of an instructor guide tool: 'Three Stages of Holistic Debriefing'.	Describe the development of a Holistic Debriefing Tool in English Portuguese Brazil aimed at nursing educators to promote reflective learning.
20/set	Nursing	**4**	Elements of the teacher's face in the tutorial setting: implications in nurses' training.	To know the elements present in the teacher's face that determine the teaching-learning process in the tutorial scenario and analyze its implications in the formation of nurses.

20/set	Nursing	**5**	The use of simulation in the context of health and nursing education: an academic reflection	Reflect on the current perspectives of teaching and learning in the context of health and nursing education from the use of simulation as an active methodology.
17/set	Simulation	**6**	Use of the Student Satisfaction and Self-Confidence in Learning (SSSCL) and the Simulation Design Scale (SDS) in nursing teaching: experience report	To report the experience with the use of the Student Satisfaction and Self-Confidence with Learning Scale (ESEAA) and the Simulation Design Scale (EDS), obtained from the cross-cultural adaptation of Student Satisfaction and Self-Confidence in Learning (SSSCL) and simulation design scale (SDS) in the Undergraduate Nursing course.
17/set	Simulation	**7**	Implementation and development of the Simulation Laboratory (LabSim) of the Ribeirão Preto School of Medicine, University of São Paulo (FMRP-USP)	Objectives- 1) Centralize, facilitate, train and coordinate didactic activities involving Simulation for the courses offered by FMRP-USP; 2) Promote self-learning among undergraduate students for consolidation and complementation of the content provided in regular courses; 3) Develop innovative initiatives of training and research in Health Simulation.
17/set	Simulation	**8**	Learning through clinical experience simulation: perceptions in nursing students	To analyze the perception of nursing students regarding the experience of Clinical Simulation with the participation of actors.
17/set	Nursing and Simulation	**9**	From theory to practice, operating the clinical simulation in Nursing teaching.	Report the experience of operationalization of clinical simulation as a pedagogical strategy in a discipline of a nursing undergraduate course.

Discussion

The importance of simulation is given by providing experiences during the educational process, to students, with opportunities for repetition, recognition of standards and decision-making, through the fidelity provided by the teacher by creating a scenario with the greatest possible approximation to reality, favoring the practical learning of the student through the content provided previously, so that he can feel able to solve them.[20-21]

From the simulation, the experience of an event such as the real one is guaranteed, in a safe environment, allowing to simulate ideal conditions for the application of previous classroom knowledge, with the possibility of the student reflecting on their own mistakes, in addition to the development of skills and abilities, in the student, for his direct action with the patient , ensuring a permissive practice of errors that do not cause them.[22-23]

The simulation ensures a safe and controlled environment, with the possibility of variations in content and levels of difficulties, preventing potential risks, aligned with national curriculum guidelines.[23]

Research portrays benefits and acquisition of skills and abilities such as empathy, articulation between theory and practice, reduction of errors, decision-making, leadership development and also increased levels of satisfaction, autonomy and self-confidence for trained professionals.[24-27] But the question that stands out is: "Who trains these professionals should also be trained on the methodology?".

The study also highlights the importance that the mobilization around this methodology is not only directed to technology and infrastructure related to them, but also to the training and understanding of the conceptual basis of its use by professionals involved in health education, so that there is a better use of its potential for promotion, in this new time in excellence of health education , that clinical simulation may favor.[3]

The literature review, conducted in 2020, by Goes et al, showed gaps in the research found in the searches, due to the lack of studies aimed at the development of the nurse educator to promote the best pedagogical practices, in addition to verifying the lack of tools available to assist nursing educators in conducting abriefing focused on athetiudinal, technical and cognitive learning at the same time.

The authors Silva et al (2016), Costa et al (2015), Bergamasco et al (2018), Pazin-Filho et al (2016) and Oliveira et al (2018) highlight the importance of the practice to be performed in the precepts of the methodology, without exceptions, to achieve the learning objectives, thus making it the focal point in the process, however, without main emphasis of the same.

When the simulation is used in the health area, the teacher begins to have a role as a guide of the activities, being a motivating and encouraging element of the students' development, attentive to show their progress and encourage them to understand what they should change or correct, leaving the traditional methodology focused on the "master" that teaches the "spectator student", who, in turn, receives the knowledge passively.[3]

Being, therefore, a fundamental part of the methodology that the student perceives the relevance and application of what is being taught, so that it awakens his interest in knowing something that is relevant to real and significant situations for life[3], evidences the importance of this protagonism of the teacher, first believing and valuing the methodology, for awakening and interest in deepening their knowledge about Realistic Simulation , and then achieve an effective application in the laboratory, with the expected results for this methodology.

In the studies found, gaps were found in the evaluation of the educational intervention, in the relationship with the description of the trained population, in the monitoring and traceability of the students' development and the actual learning data. The main barriers perceived in the studies were organizational, such as lack of financial resources and technological infrastructure for the improvement of teachers, in addition to other aspects, such as lack of information on the importance of evidence-based practice, continuing education for teachers and lack of time in daily work for institutional training.

This technological universe is often frightening and uncomfortable for this generation of masters. Therefore, the incorporation of these new technologies, at first, can be frightening for the faculty less familiar with them, however, it is important to emphasize that the focus of the construction of the scenarios is not in the field of technology, which should be in charge of trained technicians for this.[3]

In the Clinical Simulation methodology, the teacher promotes patient-centered learning in controlled and safe environments, which allow the standardization of clinical problems, positive feedback, increasing students' self-knowledge and confidence, providing the development of interpersonal relationships and critical thinking, as well as increased skill for clinical evaluation and decision, required in care practice.[3]

Final Consideration

There is little national scientific evidence that determines the need for technical training and practical action, as well as those that evidence the difficulties and challenges of teachers in the face of the practice of realistic simulation.

It is worth a critical look and the questioning, both for the educational institutions, as for the teachers, protagonists in the application of the methodology, which will define the effectiveness of the practice, whether this role is being well executed and causing all the investment to revert in the expected final result, which is to lead the student, protagonist in the scenario and in the discussion, to leave a realistic simulation scenario with critical ability to identify opportunities for improvement in their performance , in an instigating and motivating way, giving it an expanded projection of its future practice and professional performance.

The intention is not, under any circumstances, to evidence a "professional disability" on the part of teachers. On the contrary, there is clearly the need to bring up this discussion, highlighting the importance and protagonism of teachers in this process, making it clear that it is not enough to invest in technology and structure. It is essential that the teacher is qualified for this practice.

It is proposed, for the consolidation of this discussion, a check list to be applied later, bringing, in the form of a questionnaire, the results of these questions and the proposal of improvements in the conditions of the teacher's performance in the face of the Realistic Simulation.

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