A simulation structure for nursing education in mental health

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Original article

Abstract

The aim of the paper is to present a structure for nursing education simulation that incorporates elements of blended and online simulation in a socially constructivist, culturally sensitive environment. To develop the structure for nursing education, a descriptive literature review was conducted in spring 2022 on simulations implemented in mental health nursing education. Nurses require the skills and knowledge to provide mental health care in every area of health care. According to the descriptive literature review, simulation-based learning such as high-fidelity mental health simulation resulted in increased confidence, knowledge gains and improved communication skills.

Simulation is a wide concept and allows nurse lecturers to implement the pedagogy as they see it best. The Simulation structure helps especially beginners to follow the simulation as a process. The structure eases the planning phase as well as the debriefing part of the simulation. As it has been shown in the analysis of the literature simulation can be effectively implemented in a blended and / or online environment. It is expected that in the future, simulation games and virtual, online simulations will be more typical ways to conduct a simulation.

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Introduction

The aim of the paper is to present a structure for the education of mental health nurses which includes elements of blended and online simulation in a social-constructivist, culture-sensitive environment. Nurses require the skills and knowledge to provide mental health care in every area of health care. Simulation-based learning such as high-fidelity mental health simulation resulted in increased confidence, knowledge gains and improved communication skills.[1-3] It is a valuable tool for teaching and is accompanied by many desired outcomes.[2] Simulation is shown not only to decrease anxiety and increase critical thinking and clinical reasoning,[1,2] as well as improve risk assessment1, but it also increases psychomotor skills and empathy.[2] The social-constructivist view of the simulation technique has gained significant recognition in nursing education. This pedagogical approach recognizes that learning is a social process shaped by interactions with others and the environment.[4] The interactive nature of simulation allows students to gain confidence, experience realistic challenges, and learn from both success and failure in a supportive, interactive environment.[5]

In mental health nursing, effective teamwork and interpersonal skills are essential for providing holistic care to individuals with complex mental health needs. Simulation scenarios encourage students to work together, fostering the development of effective communication, collaboration, and interprofessional skills. By engaging in interdisciplinary discussions and shared decision-making, students learn to appreciate the diverse perspectives and expertise of different healthcare professionals, preparing them for collaborative practice in real-world clinical settings.[6] Another vital component of social-constructivist approach to education is reflective practice, a vital component of professional development in mental health nursing. After participating in simulation scenarios, students are provided with opportunities for debriefing and reflection. Through facilitated discussions, they can analyse their performance, identify strengths and areas for improvement, and gain insights into their own practice. Reflection allows students to link their experiences to theoretical concepts, exercise critical thinking, acknowledge emotions evoked during simulation, and develop a deeper understanding of their own biases and assumptions.[7] This self-reflection cultivates self-awareness, empathy, and a commitment to lifelong learning, enhancing their competence as mental health nurses. Through the immersive and interactive nature of simulation, mental health nursing students can develop the necessary skills, knowledge, and attitudes required for competent and compassionate care.[8] As nursing education continues to evolve, the social-constructivist view of simulation remains a valuable tool in preparing mental health nurses for the complex and ever-changing healthcare landscape.

This paper was motivated by the GNurseSIM project which focused on intercultural aspects of geriatric care. The paper was driven by the international GNurseSIM project, centred around intercultural aspects of geriatric care in nursing simulation education. This involves creation of a structure for culture-sensitive geriatric nursing simulation scenarios. Additionally, this paper aims to offer suggestions and directives for simulation scenarios implementation in mental health nursing education and its potential applications in other nursing domains. The project had partners from five countries (Finland, Poland, Spain, United Kingdom and Malta), six universities (Satakunta University of Applied Sciences SAMK, University of Applied Sciences in Tarnow, Alicante University, Centria University of Applied Sciences, Middlesex University MDX, Malta College of Arts, Science and Technology MCAST) and one health care organization, HLA Vista Hermosa. All the partners in the project educate multicultural nursing students, and simulation scenarios developed within the project (www.gnursesim.eu) contain intercultural variables such as for example religious factors in end-of-life care and stigmatizing factors like HIV-positive patients.

Material and methods

During the preparation of the GNurseSIM output, the partners screened evidence about simulation learning in mental health nursing education and conducted a descriptive literature review during spring 2022. First, the GNurseSIM partners were asked to review the literature on simulation used in mental health nursing education. The data extraction was: (mental health or mental illness or mental disorder or psychiatric illness AND nurse education or nursing education or training or develop- ment AND simulation training or simulation education or simulation learning AND blended or distance). The databases such as Cinahl (Ebsco) and PubMed (Medline) were used, also literature was searched manually. In total 33 articles were retrieved by the partners of the GNurseSIM project. Secondly, the authors read through all the articles on the heading and abstract levels. The inclusion criteria were articles that focus on simulation in mental health nursing education, undergraduate nurse students, peer-reviewed articles, and English language, with no other limitations. Exclusion criteria were: 'not a simulation

in mental health education' also other professionals than nurse students, literature reviews, and not peer-reviewed articles. At this point, 14 articles were excluded. The final number of articles was 19. Thirdly, the authors (JK, ST and PA) read through the articles as a whole text, tabulated the authors, year of the publication, objective, and intervention (if research), sample size, and outcomes. Also, the best practices were tabulated. Subsequently, the authors screened the 19 articles and discussed the preliminary findings with two mental health professionals from SAMK (senior lecturers).

A total of 19 articles were investigated. The years of publication were between 2013 and 2021, with five of them published in 2021. All the articles focused on simulation in mental health in undergraduate nursing education but the scenario topics and settings varied from children and adolescents to adults and from suicide attempts to interacting with mental health patients with different diagnoses. In all cases, simulation was concluded to be an effective method of facilitating teaching and learning in the affective domain. Sample sizes in articles changed between 12 and 161, however, the sample size was not expressed in every article. All of the articles used specific outcome measures to determine the impact of a simulation-based education session.

Results

As a result of the descriptive literature review, six categories were identified: Simulation as an active learning technique, Evolving challenges of simulation, Use for pre task materials, Debriefing methods, Standardized patients, and The importance of culture.

Simulation as an active learning technique

Simulation is an active learning technique which allows the student to control the scenario and offers the possibility to apply the acquired knowledge and skills in novel environments. Additionally, Curtin and Finn[9] point out that simulation is advantageous when preparing students for highly stressful, high-risk situations since it provides a safe environment for making mis- takes without the danger of severe consequences that on-the-job or real-world training might bring. Students use critical thinking skills in a comprehensive activity that assesses their skills globally, rather than assessing individual components of learning outcomes.

Different forms of simulation have been used in nursing education. Especially in mental health education. The use of high-fidelity manikin simulation can be effective in developing the knowledge and confidence

of students to provide mental health care[3] and decreasing students' fear and anxiety.[1] Simulation is an effective method of facilitating teaching and learning in the affective domain.[10] High-fidelity simulation is defined as physical resemblance[11], that is, the learning environment which resembles a real-life environment. In addition, the functional pre-tasks support the learning outcomes of the simulation.

Fanning and Gaba[11] have stated that an awareness of the vulnerability of the students is needed and must be respected at all times. Therefore, teachers should pay special attention to debriefing models or frameworks. However, there is no previous literature on cultural considerations in debriefing and it may lead to debriefing practices that are not culturally responsive or appropriate.[12]

Evolving challenges of simulation

Simulation needs to be designed so that first-year students focus only on interaction with patients, second-year students focus on interaction and hands-on skills, and third-year students focus on interaction, hands-on skills, and overall patient care.[13] In addition, one article pointed out a bio-psycho-social assessment of the simulation scenario.[14] In psychiatric care simulations could promote students' independent communication skills,[13,15-18] knowledge development,[13,14,19] critical thinking,[16,17,20] reflection,[16,20] co-operational skills[17] and problem-solving ability.[21]

Use for pre-task materials

Some articles described the use of quizzes for students before debriefing,[22] digital learning environments were used as pre-material before simulation[13,18] or students listened to a podcast before simulation.[10] One simulation happened in Moodle platform as a whole.[18] Pre-task material in a digital learning environment was used in one study.[23]

Debriefing methods

In some studies, students have watched recordings of their actions while simulating the scenario.[13,24] One study reported the use of a written assignment after simulation,[24] one study used an evaluation form,[25] and one study a simulation satisfaction questionnaire.[26] Pre and post-test before and after the simulation was used in one study[27] and one study reported the use of writing a narrative description of what students have learned in simulation.[10]

A virtual patient simulation was also used, and it has been demonstrated that it has a potential for enhancing collaborative learning among nurse students in psychiatric care.[17,23,28] However, one study reported that it did not improve students' communicational skills.[22] A virtual simulation game was reported to be one type of simulation and students stated that the gaming was a convenient and realistic form of learning.[29]

Standardized patients

Standardized patients were widely used while scenarios and especially their participation in the debriefing were seen as important.[14-16,24,26,30] All the standardized patients had at least a pre-briefing on the topic of the scenarios and guidelines on how to play the role of the patient. Some articles described standardized patients' roles also as a part of debriefing discussions and they had given feedback to the students in roles.[14-16,31] A student saw standardized patient feedback as an important part of learning.[14] Scenarios with standardized patients helped students to be more prepared for clinical practices.[14,30] Also, in one study students were in the role of patients and it helped them to be more prepared for clinical practice.[25]

The importance of culture

Also, it has been noted in the literature that culture is an important variable to take into consideration while designing courses for nursing education. According to Palaganas, Chan, and Leighton,[12] culture can refer to global, organizational, generational, professional, socioeconomic, and religious communities and practices. In the case when the cultural factors are ignored, not only the nursing students and the nurse educators but also the student-teacher relationship are a risk. Ignorance of cultural factors may reinforce teacher-centered approaches, and in some cultures like East Asia, it may be ineffective to begin the debriefing directly with emotions. Therefore, if the cultural considerations are not addressed, it may harm the teacher-student relationships in certain cultures and lead to miscommunication.[12]

The development of the simulation structure for nursing education

First, the findings from the descriptive literature review were used to shape the design of a simulation structure for mental health nursing education. The content of the simulation structure followed the design developed in GNurseSIM project for geriatric nursing education, but some changes were made according to the best practices of the literature review. Some changes were made to the structure to meet the needs of other fields of health education. Details such as the stage of the student's studies (first, second, or third-year student) and how to prepare the simulation environment were added to the structure according to the literature review.

The second phase resulted in designing the draft simulation structure in the area of mental health nursing. The simulation structure was discussed with the GNurseSIM partners and the final structure was agreed on. Some changes were made and some English terms were clarified.

Feedback from nurse lecturers on the simulation structure

A total of 25 nurse lecturers from four countries gave The structure was evaluated by nurse lecturers from eight universities in four countries during the autumn period of 2022. A total of 25 nurse lecturers from four countries gave feedback on the simulation structure. The 14 nurse lecturers were from four Finnish Universities of Applied Sciences, six lecturers from two Spanish universities, three lecturers from one Mexican university, and two lecturers from one UK university. All the nurse lecturers had experience teaching multicultural nursing students and were familiar with geriatric or mental health care. The simulation structure was tested by two nurse lecturers from Satakunta University of Applied Sciences in a mental health simulation held with English-speaking nurse students in December 2022.

The lecturers' overall experience was positive. The Background, Preparation, Scenario, and Prebriefing parts of the structure were seen as valuable. Hence, the whole simulation structure had some suggestions for changes. The structure was seen to be too long and should be shortened, and some parts were difficult to fill since the same issues were repeated in many parts of the structure. Also, the part of learning objectives should contain clear technical and non-technical objectives since the objectives lead the simulation, and the objectives should be easy to evaluate.

In the Simulation part, some lecturers did not see video recordings as important while running scenarios and were questioning the students' data security; how to ensure that there is no risk if the scenario is streamed? What is the point if the whole scenario is recorded? Instead of that, teachers suggested recording only the most important parts of the scenario and showing them to students in debriefing. The student's understanding

of the simulation as a pedagogical meth- od was high-lighted, and students should have an opportunity to familiarize themselves with the simulation environment before the scenario.

The Debriefing part was approached with some more criticism. There were suggestions to change the name with another and more positive concept, Learning Discussion. Also, using the model of Fanning and Gaba,[11] it was proposed to include three phases: description, analytical, and implementation phase. The learning objectives should be discussed in the debriefing more clearly and they should be written down in the debriefing part. The final version of the model is in Appendix 1.

Discussion

According to the descriptive literature review, it is essential to include pre-brief, tasks, and debriefing to simulation and the structure should be clear to students before simulation. The first step in designing a simulation is mapping the background; the areas of nursing work to be dealt with, the degree of study, the name of the course, the topic to be simulated, and the background information of the students are mapped. The learning objectives are also defined in this phase. Cultural issues were not found in the studies of the literature review. In the future nurse, lecturers should pay more attention to multicultural students' needs and design the simulations more culturally sensitive.

In the briefing, the scenario is described to the students. There might be also some pretasks before the simulation. The implementation phase of the simulation includes information for the lecturer of the simulator preparation and information for every participant of the simulation. Every participant must know what they are expected to do in the simulation and when. The debriefing phase should deal with the feelings of all participants that the simulation situation evoked. The simulation debriefing also includes an analysis phase where the course of the simulation is discussed. In the final part, a summary of the simulation is made. One important issue is to give a 'Take Away Message' to participants; what is the most import- ant thing they remember from the exercise?

According to the nurse's, and the lecturer's feedback some changes were made to the simulation structure. The overall structure was clarified and terms such as non-technical skills (cognitive skills such as decision-making and situational awareness, and interpersonal skills such as communication, teamwork, and leadership) were detailed on the structure under the Learning objective part according to Magill and Tolley.[32] Also, the debriefing part was discussed. According to Fanning & Gaba,[11] nurse teachers should tailor the debriefing session not only to the learning objectives but also to the participant and team characteristics. Also, the debriefing part was discussed. Nurse lecturers should tailor the debriefing session not only to the learning objectives but also to the participant and team characteristics. Finally, examples of blended learning simulation were given: classroom simulation, hybrid model simulation (participants are in the classroom and online) and online simulation, and places at the end of the simulation structure.

To conclude, all simulations discussed in this descriptive literature review had a positive effect on students' learning. There are several different ways to implement simulation education that achieves positive learning results. Simulations, working practices, learning goals, and examinations must be linked together.

Conclusions

Simulation is a wide concept and allows nurse lecturers to implement the pedagogy as they see it best. This simulation structure helps especially beginners to follow the simulation as a process no matter the cultural environment. The structure eases the planning phase as well as the debriefing part of the simulation. As it has been shown in the analysis of the literature simulation can be effectively implemented in a blended and / or online environment. It is expected that in the future, simulation games and virtual, online simulations will be more typical ways to conduct a simulation.

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Appendix 1

How to implement simulation in different learning environments?
- First-year students:
  depending on the learning objectives, for example, when the topic is non-technical skills such as discussion with a patient/ client, one video is appropriate to screen
- Second-year students:
  depending on the learning objectives, for example, when the topic is technical skills such as wound management or IV therapy, more than one video is appropriate to screen
- Third-year students:
  depending on the learning objectives, for example, when the topic is technical and non-technical skills such as home care visits, more than one video is appropriate to screen

Classroom simulation
- Follow the simulation structure one step at a time
- Before the simulation check the corner of the video cameras in the simulation environment, supplies for the simulation environment are available for students and the classroom is suitable for debriefing

Hybrid-model simulation: in the classroom and online
- Follow the simulation structure one step at a time
- Before the simulation:
  – the learning environment should be taken into account classroom bookings, with the possibility of both classroom and online teaching
  – check the corner of the video cameras in a simulation environment, supplies for the simulation environment are available for students and the classroom is suitable for debriefing in the classroom and online
- During simulation
  – at first, the internet connection with online students: sound and video check
  – when discussing the pretasks with students it is good to use applications for mobile phones such as Kahoot. it or Mentimeter to include students participating online
  – video corner: one video is easier to follow online
- After simulation, Debriefing
  – Students in the classroom are divided into groups, students online are divided into breakout rooms, and there is limited time for discussion. Each group at the time gives their feedback no matter whether are they in the classroom or online

Online simulation
- Follow the simulation structure one step at a time.
- Before the simulation:
  – check that the scenario is possible to run online, for example, the patient educational scenario
  – students need to have an understanding of how to participate in an online simulation
  – what are the rules for students:
    ▪ students participate from their laptops, not cellphones
    ▪ students log in on time
    ▪ the internet connection with online students: sound and video check
    ▪ microphones are muted and videos on

- - the confidentiality of the scenario: students need to be alone in the room, only students are participating, and no family members or other people have the opportunity to watch/ listen
  - the meeting is locked so outsiders cannot log in while the simulation
- During simulation
  - when discussing the pretasks with students it is good to use applications for mobile phones such as Kahoot. it or Mentimeter to include students participating online
  - video corner: one video is easier to follow online
- After simulation, Debriefing
  - students online are divided into breakout rooms, and there is limited time for discussion. It is good to use applications such as Padlet
  - each group at the time gives their feedback by speaking.