ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 10, Issue, 08, pp. 39153-39157, August, 2020
https://doi.org/10.37118/ijdr.19237.08.2020

RESEARCH ARTICLE OPEN ACCESS

TRAINING OF CLINICAL SIMULATION INSTRUCTORS IN NURSING: DEVELOPMENT, IMPLEMENTATION AND EVALUATION OF A SEMI-PRESENTIAL COURSE

***[1]Danielle Leite de Lemos Oliveira, [2]Maiza Cláudia Vilela Hipólito, [3]Jailson de Castro Freitas, [4]Alessandra Mazzo and [5]Maria Helena Baena de Moraes Lopes**

[1]Universidade Estadual de Campinas, Programa de Pós-graduação em Enfermagem, Campinas, SP, Brasil
[2]SENAC, Campinas, SP, Brasil
[3]Centro Universitário Maurício de Nassau, Ceará, Brasil
[4]Universidade Estadual de Campinas, Faculdade de Enfermagem, Campinas, SP, Brasil
[5]Universidade de São Paulo, Escola de Enfermagem, Bauru, SP, Brasil

ARTICLE INFO

Article History:
Received 20th May 2020
Received in revised form
07th June 2020
Accepted 17th July 2020
Published online 30st August 2020

Key Words:

Simulation of patient;
Program development;
Nursing education;
Distance education.

****Corresponding author:***
Danielle Leite de Lemos Oliveira,

ABSTRACT

Aims: Develop, implement and evaluate a training course for clinical simulation instructors using a virtual learning environment (VLE). **Methods:** Methodological study. A semi-presence course was developed, based on international recommendations, with a workload of 36 hours, with 18h of activities in the virtual learning environment and 18h of face-to-face practical activities. The "Standards of Best Practice: Simulation[SM]" and the "Jeffries Simulation Framework" were used as a theoretical framework. Course development stages: planning; instructional design; insertion in the virtual environment; validation by specialists using an instrument and calculation of the Content Validity Index (CVI); implementation and evaluation of the course. **Results:** The course was evaluated by the judges with a CVI of 0.93, being, therefore, adequate in terms of content. Fourteen teachers started, eleven finished the course. The course met expectations, according to the evaluation of the participants and contribution to expand the use of simulation in teaching. The instrumental design resources used were useful, recommending its use. **Conclusion:** The semi-presential course using VLE presented an adequate model for training instructors.

Citation: ***Danielle Leite de Lemos Oliveira, Maiza Cláudia Vilela Hipólito, Jailson de Castro Freitas, Alessandra Mazzo and Maria Helena Baena de Moraes Lopes.*** "Training of clinical simulation instructors in nursing: development, implementation and evaluation of a semi-presential course", *International Journal of Development Research*, 10, (08), 39153-39157.

INTRODUCTION

The practice of simulation can be understood as a teaching-learning strategy that recreates, in a planned and controlled context, aspects present in reality, whether clinical or not, adding to them emergent, everyday or infrequent factors, which include risk situations and conflict or development of skills and competences, in order to achieve specific learning and assessment objectives[1]. Simulation has its origin and frequent application in the military sphere, in the training of aviation pilots and in the nuclear industry[1]. However, in the past 20 years, it has been increasingly indicated as a teaching-learning strategy for training health professionals. It is evident in the literature the concern with the education of the educator who uses or will use simulation in his teaching practice[2-5], as well as the unanimity about the benefits of simulation in teaching and learning in the area of health and nursing[6-9]. It is also worth mentioning that "simulation should be understood as an additional step in the training of the student, and not a substitute for the real clinical experience" [10]. However, it has not been as well integrated, as it could be, with the teaching of the development of nursing skills and competences[1]. For the simulation to be widely applied to nursing education in an adequate and effective way, it is essential that educators - faculty members of undergraduate and graduate courses - are familiarized with this teaching method and are trained for such activity[3]. In a literature review[3] it was found that much of the resistance of nursing teachers regarding the incorporation of simulation as a teaching and learning strategy is related to the

lack of training for its use, ignorance of its references, fear of technology, in addition to the low burden hourly for the elaboration of teaching activities and unfamiliarity with active methodologies. Sometimes, simulation is used without adequate criteria and applied superficially due to the teachers' lack of knowledge about the steps and techniques inherent to this method. how could anyone train simulation instructors effectively, so that the teacher develops the role of instructor and facilitator of simulation, placing the student as the main actor of his learning, with a good theoretical basis, design and workload favorable to the study and understanding of the topic?

The Distance Education (EaD) has shown to offer excellent support to train teachers, considering their potential, such as flexibility and the possibility for teachers to adapt their study routine to their real needs[11]. Thus, more than discussing the importance of simulation in nursing education, the development, implementation and evaluation of courses to train educators as simulation facilitators is emerging. This time, the importance of the present study is evidenced, which brings with it the proposal of using tools of aVLE, associated with classroom and practical activities, in order to promote the training of clinical simulation instructors in nursing. In view of these issues, this study aimed to develop, implement and evaluate a training course for clinical simulation instructors in nursing using VLE, with the hypothesis of favoring the use of simulation in teaching practice through its preparation and training.

METHODS

Study type: This is a methodological study that aims to "investigate methods for the collection and organization of data, such as: development, validation and evaluation of research tools and methods" [12], being the type of research that best suits the desired objectives , as it is intended to develop, implement and evaluate a course for the training of clinical simulation instructors.

Course development: The VLE chosen was the Modular Object Oriented Distance Learning (Moodle) because it is accessible and its use is encouraged at the university where the study was developed. The course aimed to enable teachers to use clinical simulation as a teaching strategy, taking into account the concepts of Active Learning, Problem Based Learning (PBL)[7], Learning Styles[13] according to the Visual, Auditory and Kinesthetic Model - VAC and Andragogy. At the end of the course, the teacher was expected to be able to: plan, define learning objectives and develop classes using clinical simulation as a teaching strategy; prepare the environment for clinical simulation practices; develop technical and behavioral scenarios; use the scenario checklist to conduct the briefing, running[14], simulation debriefing and feedback[15] to students; guide students to complete the simulation observation checklist; apply the different types of assessment - diagnostic, formative and summative - in simulation activities, and build a technical-behavioral scenario in clinical simulation. The course should be taught in 36 hours, with 6 hours face-to-face and 6 hours distance, and 15 places would be offered. It was proposed to involve between six to 15 participants to enable greater opportunity for active participation in simulation scenarios and, mainly, to guarantee debriefing with effective discussions and real possibility for feedback on actions[6,15]. The course should be evaluated for its content before being implemented. For that, judges would be invited to join the expert committee. As recommended by Lynn[16], a minimum of five and a maximum of ten people should participate in this process. Therefore, it was decided to invite eight judges.

Population: The target population is formed by the professors of the Undergraduate Nursing Course at the Public University of the State of São Paulo.

Selection criteria Judges should be health professionals and have been working as simulation instructors for at least four years, and it is desirable to be familiar with VLE. All professors of the institution's undergraduate nursing course who enrolled in the 30-day period would be admitted to the course, after previous disclosure of the course through e-mail and posters, or until all vacancies were filled. The criterion for discontinuation would be to have a participation of less than 75% of face-to-face and distance activities.

Data analysis and treatment: The judges evaluated the content of the training course using an assessment instrument built for this purpose, with 33 questions and answer options on a Likert17 scale, with four ordinal points: 1 = applicable; 2 = needs to be reformulated; 3 = adequate with the possibility of revision and 4 = adequate. The items were evaluated for clarity, relevance or representativeness and comprehensiveness of the items, as well as the general appearance of the course in terms of visual identity, information provision, menu location, responses to class links, sequence of activities and ease of navigation. For such evaluation and opinion, a period of 30 days was granted. To assess the agreement between judges, the content validity index (CVI) was calculated or calculated [18,19]. The index score for each item was calculated using the total number of responses "3" or "4", divided by the total number of responses. Items that received a score of "1" or "2" underwent review and adequacy, while those with a score of "3" underwent review or not, as assessed by the surveys. It was also calculated on the total CVI to sum up all the CVI calculated and divided by the number of items considered in the assessment.[18] The teachers conclude by answering the course evaluation questionnaire, available for free on Moodle, Constructivist Survey of Online Learning Environment (COLLES), which is composed of 24 questions grouped in six dimensions (relevance, critical reflection, interactivity, support from teachers , peer support and understanding) and has been used in other studies.[20] They should choose between the options 'almost never', 'rarely', 'sometimes', 'often' and 'almost always', with the expectation of participating in regarding the following items: (do the developed theme). Students' responses to the course evaluation questionnaire were quantified by VLE in related and absolute frequencies.

***Ethical aspects*:** This study was approved by the Board of the Faculty of Nursing and by the University's Research Ethics Committee. Each participant received a Informed Consent Form–ICF with information about the research, the guarantee of total confidentiality regarding their identification and image in the dissemination of results in works and events, and the right to leave at any time of the research, taking into account Resolution 466/2012 of the National Health Council, which regulates research with human beings in Brazil..

RESULTS

For the preparation of the course, 30 hours were used in the customization of the VLE, about 320 hours between the

development of the learning objects (texts, videos, animations) and posting in the VLE, approximately 25 hours were dedicated to the testing of the pages with the help of web designer, plus about 50 hours between tests and corrections. The disclosure was made three months before the beginning of the course. Fourteen teachers signed up and 11 completed the course. First, the course program, course load, basic requirements for participation and minimum frequency to receive the certificate of completion were informed (Chart 1). It is noted that, when using a VLE, the first topic to be presented is navigation in the environment, enabling the recognition of its resources and tools to be used in the course.

Table 1. Program for the "Training course for clinical simulation instructors in nursing using VLE"

Coursename	Training course for clinical simulation instructors in nursing using VLE
Courseobjective	Train nursing teachers to use clinical therapy in their teaching practice
Workload	Classroom: 18 hours Virtual: 18 hours
N. ofvacancies	15 places
Durationofthecourse	Sixweeks
Target Audience	UndergraduateNursingProfessors
Prerequisites	Knowledge of using Windows and the Internet
Accessibility	Screenreader, Zoom tool
Proposal	Use clinical simulation as a teaching method, taking into account the concepts of Active Learning, Problem Based Learning (PBL) and Learning Styles. Develop classes using clinical simulation as a methodological resource. Perform ambiance for clinical simulation practices. Develop technical and behavioral scenarios. Provide feedback and mediate debriefing of the simulation.
Programcontent	1. Use of Moodle and its tools; 2. History and concept of clinical simulation and its applicability; 3. Simulated terminology; 4. Applied Andragogy: concepts of Active Learning Methodology, Problem Based Learning (PBL) and Learning Styles; 5. Professional integrity of the participant: characteristics inherent to the simulation instructor; 6. Development of classes in clinical simulation: Development of objectives, briefing, running and checklists of scenarios, physical structure and environment; 7. Elaboration of technical scenarios; 8. Elaboration of behavioral scenarios; 9. The role of the facilitator in learning; 10 Debriefing and feedback techniques; 11. Types of assessment (diagnostic, formative and summative). Participant evaluation. Practice of the technical and behavioral scenarios developed by the participants: "Building a technical-behavioral scenario in Clinical Simulation".
CompletionCriteria	Participation in at least 75% of the face-to-face activities and carrying out at least 75% of the activities proposed in the VLE.

It was considered that the participants, because they are university professors, could have prior knowledge of some contents and sought to diversify the types of activities, as a way to streamline both classroom and virtual classes, applying the concept of Learning Styles, which are the individual sensory cognitive preference in the learning process[18]. There was a concern to explore the media available in the chosen VLE, Moodle, this incites the curiosity of the participant to always explore the next activity because it is not routine, but always a new dynamic. All classes involve a forum for clarifying doubts and another for the discussion on the current topic, which participants should be involved with others, and also as a tutor, on the proposed topics as a way of collaborating with the group's knowledge and exchanging experiences and information. In all, 33 activities were developed. A more created tool was the Forum (20%). In contrast, a "Task" tool, in which the student sends a file with activities developed by himself to the course tutor, corresponds to a small percentage (6%), since the first task was recorded from proposal for the development of the simulation scenario, the individual activity of evaluating the course and the second task, or the formal registration of the final version of the scenario. We highlight as practical activities that were used in clinical situations (14%), which corresponded to five activities during the course, including planning and scenario development, with the use of a script to facilitate the execution of each stage. Videos (17%), slide shows (9%) and course evaluation questionnaire available at VLE (6%) were also included. Student participation was followed up as a form of formative assessment for better targeting of themes and consequent learning for participants. When choosing media to present the course content and promote student learning, it is necessary to cover, as much as possible, different learning styles[13]. That way in each class at least, then two learning styles - visual, auditory or kinesthetic - were favored with the use of different media.

Course evaluation by expert judges: The course was evaluated by eight judges with experience in clinical practice in nursing and health, six of whom were familiar with distance education, four were nurses, two doctors, a psychology and a biomedical. As for the content, 34 activities were evaluated, of which 20 were used successfully according to the three evaluation requirements. Without the "scope" criterion, seven activities had a CVI lower than 0.80. Other suggestions were pointed to the need for musical audio in the background of an explanatory video, a suggestion that was accepted. Another suggestion was regarding the definition and better conception of the term PBL (Problem Based Learning) [7] and its differentiation from the simulation method. It was informed in the corresponding activity that it treated different methods and that it can be used in the same curricular model, however, this is not configured as interdependent. As for "clarity", three activities had CVI less than 0.80 due to the presence of many terms in a foreign language in the languages of activities and explanatory texts, in addition, a question from the forum was unclear as to its objective. Both requests were met, except for foreign terms, because they are generally used in changes such as briefing, debriefing and feedback[14]. In assessing the general appearance of the VLE, there was a suggestion about the sequence of activities and a comment on the difficulty of navigation, but in this case, according to the judge himself, the difficulty pointed out was due to his unfamiliarity with Moodle, although he used another VLE routinely. In general, the analyzes of the judges, as well as their suggestions and reservations, were

considered and the necessary changes were made. The general appearance of the VLE was also considered adequate since it received concepts 3 and 4, with CVI of 1 or 100%. All taxed items (84 items), the total CVI was 0.93. It can be stated, then, which course was considered valid in terms of its content and general appearance.

Participation and evaluation of course participants: Fourteen teachers signed up, of which one dropped out before classes started (claiming lack of time), one dropped out after the first class for the same reason and one dropped out after a second class for not identifying with the theme (realistic simulation). The remaining participants, 11, completed or completed the course with 75% or more of the activities presented essentially by the VLE, of which nine responded or a course evaluation questionnaire, also available on the VLE. Note that the two topics related to interactivity and support from colleagues during the course had a lower frequency (sometimes), as well as a lower expectation of occurrence. The other items related to the relevance of the content, critical reflection, support for teachers and understanding, according to the participants occur "frequently" and "almost always".

The participation of the teachers was activated, in addition to the presentation activities in the VLE and the presence in the classes, nine finalizations of the project "Building a technical-behavioral scenario in the Clinical Simulation", presenting their project during the classes and in the use of the VLE" Task "Destinations, two chosen to be rotated, that is, implemented, in the last meeting, a saber, a scenario about 'Nursing care in the Intensive Care Unit' and one about 'Qualified listening of the mental health nurse to schizophrenic patients'. Two participants suggested reducing the number of activities and a point for the elaboration of the scenario, proposed as a project in the course of the course, which was carried out in a group.

Two testimonies from the participants were selected that were in line with the results obtained by the group at the end of the course:

I really liked it. I think it opened my mind to change and to be of realizable importance. I suggest "repeated" and deepened. (Participant "A")

I would like to thank you for the opportunity to take the course. It was very good and interactive, excellent material, suggested for the next existing more activities with scenarios. As well as the group setting up a common scenario and saving the items before carrying out theirs, I think that way I feel safer with my scenario. (Participant "B")

DISCUSSION

The benefits of simulation in the teaching of health professionals, specifically in nursing, have been widely discussed and demonstrated over the past few years, which justifies the great advance and growing interest of educational institutions in applying this strategy in their curricula. However, the authors' concern about the adequate preparation of professionals who use this method is evident[3,10], because without proper preparation, its use can become not only inadequate, but ineffective and superficial, meaning little for the process learning process. As demonstrated in this study, the development of a face-to-face course with distance education support and online activities can be exhaustive, naturally it takes much longer than the development of a traditional face-to-face course, considering the implications with preparing activities and resources such as videos, animations, forums and their insertion in VLE, followed by tests on different operating systems and internet access devices. However, its benefits are also largely advantageous, such as the possibility of reviewing the student or the same number of times that are necessary for the understanding of knowledge, accompanying the tutor in activities performed by the student and his support in clarifying doubts and discussions in forums. In addition, the course can be replicated as many times as necessary, allowing for updates and improvements. The judges considered the course content appropriate, which was based on the theories or model presented by Pamela Jeffries, in 2005, or "Jeffries Simulation Framework" [21], a reference for simulation instructors in several areas of health and widely cited in the literature as robust theoretical contribution to simulation initiatives, today considered Jeffries' Theory; and as Standards of Best Practice of the International Nursing Association for Simulation and Clinical Learning (INACSL), which periodically produces scientifically relevant publications on simulation, presents as "best practices in the use of this strategy, the" Standards of Good Practice: Simulation[SM], being the main ones world reference on nursing simulation.[15]

The use of foreign terms was criticized by judges, however, many still have no translation and are used in national publications such as, for example, the terms briefing, debriefing and feedback[14]. Another suggestion was the use of musical audio in explanatory video, or that reform and affirmation that learning becomes easier when more than one sense is sharpened at the same time[18]. Regarding the PBL, the judges suggested to make this methodology clearer. In fact, through theoretical references for the use of distance education, an active learning methodology, or constructivism and PBL[7], were taken into account as well as the learning styles[13] in the evaluation of classes and activities, as a way to enhance the learning of different styles in the same class, reaffirming or leading the student in the learning process[11], where the tutoring and the direction of the face-to-face classes act as facilitators in this process. It is possible to notice that teachers were interested in learning and applying changes in classes and scores of recommendations[3-4] in the literature, which does not allow comparing the results with other training initiatives for instructors in clinical practice. Finally, consider how the limitation of this study or the fact that the course was applied to a small group of teachers, with the proposal being applied and evaluated with other groups of participants, using this experience being considered a study with promising results.

Conclusion

Finally, consider how the limitation of this study or the fact that the course was applied to a small group of teachers, with the proposal being applied and evaluated with other groups of participants, using this experience being considered a study with promising results.

REFERENCES

Affeldt FS; Fernandez FF. Problem-Based Learning: A Teaching and Learning Model for Organization Theory.

Revista Ibero-Americana de Estudos em Educação, Araraquara, v. 13, n. esp1, p. 440-455, maio 2018. E-ISSN: 19825587. DOI: 10.21723/riaee.nesp1.v13. 2018.11437

Alexander M. Effectiveness of traditional clinical and simulation experiences. J NursRegul 2014;5(3):3

Alexandre NMC, Coluci MZO. Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. Rev C S Col 2011; 16(7):3061-8.

Barbosa PP, Ursi S. Motivação para formação continuada em Educação a Distância: um estudo exploratório com professores de Biologia. Rev. Electrónica de Enseñanza de lasCiencias. 2019; (18). Disponível em url: http://reec.uvigo.es/volumenes/volumen18/REEC_18_1_8_ex1312.pdf.

Bergamasco EC,Murakami BM; da Cruz DALM. Uso da Escala de Satisfação dos Estudantes e Autoconfiança com a Aprendizagem (ESEAA) e da Escala do Design da Simulação (EDS) no ensino de enfermagem. Scientia Medica, 2018;(28) ISSN-e 1980-6108.

Crozeta K, Roehrs H, Stocco JGD, Meier MJ. Pesquisa metodológica: novos e velhos desafios. In: Seminário Nacional de Pesquisa em Enfermagem; 2013 Jun 3-5. Disponível em: http://www.abeneventos.com.br/anais_senpe/17senpe/pdf/0835po.pdf.

Hallmark BF. Faculty Development in Simulation Education. NursClin North America 2015;50(2):389-97.

INACSL Standards Committee (2016, December). INACSL standards of best practice: SimulationSM Simulation design. Clinical Simulation in Nursing, 12(S), S5-S12. http://dx.doi.org/10.1016/j.ecns.2016.09.005

INACSL Standards Committee. INACSL standards of best practice: SimulationSM Debriefing. Clinical Simulation in Nursing, 2016; 12(S), S21-S25. http://dx.doi.org/10.1016/j.ecns.2016.09.008

Jeffries PR. A framework for designing, implementing, and evaluating: Simulations used as teaching strategies in nursing. NursingEducationPerspectives. 2005;26(2):96-103.

Jennifer KH, Richard AS, Maryann A, Suzan K, Pamela RJ. The NCSBN National Simulation Study: A Longitudinal, Randomized, Controlled Study Replacing Clinical Hours with Simulation in Prelicensure Nursing Education. JournaulofNursingRegulation. 2014; July 5;(2).

Leathrum, JF, Mielke JRR, Audette M, McKenzie F, Armstrong RK, Miller GT, Cross AE, Scerbo M. An Architecture to Support Integrated Manikin-Based Simulations. SCSC 2015;(7)26-29.

Likert, R. A technique for the measurement of attitude. *ArchivesofPsychology*, 1932; *140*, 5-55. Disponível em: https://legacy.voteview.com/pdf/Likert_1932.pdf

Luo QQ, Petrini MA. A review of clinical reasoning in nursing education: based on high-fidelity simulation teaching method. Sciendo, FrontiersofNursing 2018; (5)

Lynn, MR. Determination and quantification of content validity. Nursing Research, v. 35, n. 6, p. 382–385, 1986.

Miller P. Learning styles: the multimedia of the mind. Research Report. 2001; [S.l.: s.n.]. Disponível em: https://eric.ed.gov/?id=ED451140

Naomi T, Mary R, Fiona C, Lewis PA. (2018) Collaborative facilitation of debrief after high-fidelity simulation and its implications for reflective thinking: student experiences,Studies in Higher Education, 43:9, 1654-1667, DOI: 10.1080/03075079.2017.1281238

Nye, C, Campbell, SH, Hebert, SH, Short, C, & Thomas, M. Simulation in advancedpractice nursing programs: A north-american survey. ClinicalSimulation in Nursing 2019; 26(C), 3-10.

Shepherd I, Burton T. A conceptual framework for simulation in healthcare education—The need. Nurse EducationToday 2019; (76) 21-25.

Wynd CA, Schmidt B, Schaefer MA. Two quantitative approaches for estimating content validity. West J Nurs Res. 2003; 25(5):508-18.

Yen SC, Lo Y, Lee A. et al. Learning online, offline, and in-between: comparing student academic outcomes and course satisfaction in face-to-face, online, and blended teaching modalities. EducInfTechnol (2018) 23: 2141. Disponível em: https://doi.org/10.1007/s10639-018-9707-5

****