Original Article
doi: https://doi.org/10.1590/1983-1447.2022.20210344.en

Satisfaction and self-confidence of nursing students as participants and observers in realistic simulations

Satisfação e autoconfiança de estudantes de enfermagem como atuantes e observadores em simulação realística

Satisfacción y autoconfianza de los estudiantes de enfermería como participantes y observadores en simulación realística

Ariane Teixeira[a]
Juliana Petri Tavares[b]
Ana Luísa Petersen Cogo[b]

How to cite this article:
Teixeira A, Tavares JP, Cogo ALP. Satisfaction and self-confidence of nursing students as participants and observers inrealistic simulations.Rev Gaúcha Enferm. 2022;43:e20210344. doi: https://doi.org/10.1590/1983-1447.2022.20210344.en

ABSTRACT

Objective: To analyze the satisfaction and self-confidence of Nursing students regarding the learning process, in the roles of participants and observers, in realistic simulation scenarios.

Method: Observational study with 44 nursing college students in the south of Brazil. Data collection occurred from September to November 2018, through the application of the Learning Satisfaction and Self-Confidence Scale to realistic simulation scenarios. Data were analyzed using descriptive statistics and generalized estimating equations complemented by Bonferroni.

Results: The level of satisfaction was 4.78 (±0.35) and self-confidence in learning was 4.46 (±0.39). Students in the 8th and 9th semesters had the highest means of self-confidence factor ($p<0.001$) when compared to the others.

Conclusion: It was concluded that there was no statistically significant difference in the satisfaction and self-confidence in learning of nursing students with different roles in the simulation scenario.

Keywords: Education, nursing. High fidelity simulation training. Patient safety. Students, nursing. Problem-based learning. Teaching.

RESUMO

Objetivo: Analisar a satisfação e a autoconfiança de estudantes de Enfermagem com a aprendizagem, nos papéis de atuantes e observadores, em cenários de simulação realística.

Método: Estudo observacional com 44 estudantes de Enfermagem de instituições de ensino superior do sul do país. A coleta de dados foi no período de setembro a novembro de 2018, através da Escala de Satisfação e Autoconfiança com a Aprendizagem após participação em cenários de simulação realística. Os dados foram analisados através da estatística descritiva e do modelo de Equações de Estimativas Generalizadas complementado por Bonferroni.

Resultados: O nível de satisfação foi de 4,78 (± 0,35) e o de autoconfiança com a aprendizagem, de 4,46 (± 0,39). Os alunos dos 8º e 9º semestres foram os que apresentaram maiores médias em relação aos demais no fator da autoconfiança ($p < 0,001$).

Conclusão: Conclui-se que não houve diferença estatisticamente significativa na satisfação e na autoconfiança com a aprendizagem de estudantes de Enfermagem com papéis diferentes no cenário de simulação.

Palavras-chave: Educação em enfermagem. Treinamento com simulação de alta fidelidade. Segurança do paciente. Estudantes de enfermagem. Aprendizagem baseada em problemas. Ensino.

RESUMEN

Objetivo: Analizar la satisfacción y autoconfianza de los estudiantes de enfermería con el aprendizaje, en el papel de practicantes y observadores en escenarios de simulación realistas. Método: Estudio observacional con 44 estudiantes de enfermería de instituciones de educación superior del sur del país. La recolección de datos fue de septiembre a noviembre de 2018, a través de la Escala de Satisfacción en el Aprendizaje y Autoconfianza después de participar en escenarios de simulación realistas. Los datos se analizaron mediante estadística descriptiva y el modelo de ecuaciones de estimación generalizadas, complementadas por Bonferroni.

Resultados: El nivel de satisfacción fue de 4.78 (±0.35) y la autoconfianza con el aprendizaje, 4.46 (±0.39). Los estudiantes de 8º y 9º semestres tuvieron las medias más altas con relación a los demás en el factor autoconfianza ($p<0.001$).

Conclusión: Se concluyo que no hubo diferencia estadísticamente significativa en la satisfacción y autoconfianza con el aprendizaje de estudiantes de enfermería con diferentes papeles en el escenario de simulación.

Palabras clave: Educación en enfermería. Enseñanza mediante simulación de alta fidelidad. Seguridad del paciente. Estudiantes de enfermería. Aprendizaje basado en problemas. Enseñanza.

[a] Hospital de Clínicas de Porto Alegre (HCPA). Porto Alegre, Rio Grande do Sul, Brazil.

[b] Universidade Federal do Rio Grande do Sul (UFRGS), Escola de Enfermagem, Programa de Pós-Graduação em Enfermagem. Porto Alegre, Rio Grande do Sul, Brazil.

INTRODUCTION

Realistic simulation in health is presented as an active learning methodology that provides participants with scenarios similar to those of the practice with real patients, but in a safe environment, protected from harm[1]. As an active method of learning, it allows participants to take charge of solving problems presented in these scenarios. This strategy has a facilitator, who proposes a situation to be experienced by the participants, a situation that is framed as a challenge to be overcome. In this case, the teacher assumes the role of facilitator of learning, encouraging the student to achieve self-development[2].

Simulation-based learning enables the development of technical and non-technical skills, such as problem solving, situational awareness, teamwork and communication, based on the presentation of real situations in the field of health[2–3]. This tool has been usefulfor the formation of qualified nursing professionals, so that they advocate in favor of patient safety[3].

Monitoring the learning of students who participate in teaching activities based on realistic simulation provides elements that will collaborate in promoting the quality of the educational process[4–5]. Among the validated and widely used instruments for this monitoring, the Scale of Satisfaction and Self-Confidence with Learning[4–6] stands out.

This scale expresses the perception of students who participate in the realistic simulation regarding their performance, their motivation to perform the activity, and their cognitive and emotional capacity[4].

The roles adopted by the participants as observers or participants during the simulation may not have an impact on the result of learning, trust and satisfaction[7]. On the other hand, studies that compared the two roles played by students in simulation scenarios indicated that they felt more confident to develop their care practice when they were able to take action in the scenario[1,8]. The lack of enthusiasm and involvement with the scenario were presented as negative points when the students were in the role of observers[9]. In realistic simulation scenarios about palliative patient care, observer students had less anxiety and greater engagement with learning[10].

The guiding question of this study was: What influence would the participation of nursing students in simulation scenarios in different roles (participant or observer) have on the levels of satisfaction and self-confidence in learning? The relevance of this study lies on the fact that this methodology does not allow for the presence of many participants in the same environment, so it becomes pertinent to specifically investigate the satisfaction of participants in different roles.

The objective of the present study was to analyze the satisfaction and self-confidence of nursing students with the learning process, in the roles of participants and observers of realistic simulation scenarios.

METHOD

This is an observational study developed at a public university located in the state of Rio Grande do Sul, in the Nursing Practices Laboratory of a university hospital, from September to November 2018.

The study population consisted of undergraduate nursing students from public and private colleges. The inclusion criteria were being a student regularly enrolled, from the 6th semester or later, who was approved in the subjects in the medical-surgical field, regardless of being professionals in the health area or having previous experience with the realistic simulation methodology. The sample size was of 44 students, a value obtained after a calculation performed in the Programs for Epidemiologists for Windows (WinPEPI), version 11.43, and based on the validation study of the Satisfaction and Self-Confidence Scale with Learning in Brazil and on a study similar to the one proposed in this research[1,5]. For this calculation, a significance level of 5%, a power of 90%, an estimated standard deviation of 0.5 on the satisfaction scale, and an effect size of at least 0.5 standard deviation between the two scores (participating and observing) were considered.

The participants were recruited by sending an e-mail advertising the activity to the Coordination of Nursing Schools in the state. Students interested in participating made the appointment by email according to their availability.

Data collection took place with the performance of four scenarios of realistic simulations conducted by the same facilitator, trained as an instructor of realistic simulations in health. The realistic simulation scenarios were developed by the researchers considering the knowledge of the subjects already approached up to the 6th semester students, based on available scientific evidence and contemplating the principles of Patient Safety. They were performed and calibrated by the researchers in the laboratory of skill practice of the teaching hospital of the study. This laboratory has equipment and furniture that faithfully simulate anursing station and a ward with a low-complexity hospital bed. The scenarios addressed topics such as hypoglycemia, the risk of falling, and drug allergies performed with standardized patients (these roles were performed by previously trained professionals or students from the health area who collaborated with the study). The fourth scenario was Basic Life Support and was performed with a low-fidelity mannequin (Chart 1).

Scenario theme	Clinical presentation	Expected actions	Practice location and available resources
1. Hypoglycemia	Patient drowsy, sweaty, unresponsive. Had received regular and NPH insulin, was in NPO.	Recognition of signs/ symptoms of hypoglycemia, reading the medical prescription, evaluation, and patient care.	Nursing laboratory similar to a hospital ward; standardized patient; service materials.
2. Risk of falling	Confused patient, lying down in bed with the bed rail lowered, complaining of abdominal pain and wanting to go to the bathroom; the patient wears a fall risk bracelet and had received benzodiazepine.	mplementation of care for the risk of falling, pain management and patient guidance.	Nursing laboratory similar to a hospital ward; standardized patient; service materials.
3. Medication allergy	Patient hospitalized for antibiotic therapy; she doesn't know how to specify the substance to which she is allergic.	Identify the patient's allergy; reading and interpretation of the medical prescription, requesting re-evaluation by the team.	Nursing laboratory similar to a hospital ward; standardized patient; service materials.
4. Cardiopulmonary arrest	Patient (mannequin) found unconscious on the floor of the healthcare institution.	Initial life support (BLS) care by healthcare professionals.	Access corridor to the laboratory; low-fidelity mannequin; training automated external defibrillator (AED).

Chart 1 – Description of simulation scenarios. Porto Alegre, Rio Grande do Sul, Brazil, 2022
Source: Research Data, 2022.

Each student participated in four scenarios, composed of a briefing, lasting five minutes (case presentation, distribution of papers, and information on details about the physical area, operation, and disposition of materials); development of the scenario, which lasted for five to fifteen minutes, according to the peculiarities of each scenario and group; and finally, a debriefing (reflection on events during the simulation — decision making, critical thinking), lasting 20 minutes.

The participants, divided into groups, performed the roles of actors in two different scenarios, and of observers in two other simulation scenarios. The groups were formed by a minimum of four and a maximum of six students, to a total of nine groups. These limits were drawn taking into account the physical area of the laboratory used and their best performance, which would not accommodate more than six students per group. The four scenarios of each group occurred in a single meeting, sequentially, with a total duration of approximately two hours and thirty minutes.

In addition to participating in the briefing and debriefing, the observers received a guide to accompany the simulation with questions regarding the evaluation and clinical judgment of the case, the verification of safety aspects of the scenario, communication between participants, teamwork, and nursing interventions.

Data were collected after the debriefing of each scenario, totaling 4 questionnaires answered by the participant (176 questionnaires), in addition to the filling-in of sociodemographic and academic data, as well as the Satisfaction and Self-Confidence with Learning Scale, a version validated in Brazil of the Student Satisfaction and Self-Confidence in Learning, proposed by the National League for Nursing (NLN). This scale was developed to measure participants' satisfaction and self-confidence, acquired through high-fidelity simulation5. It consists of 13 questions. The first part of the instrument, with 5 questions, regards student satisfaction with the methodology used in the simulation, called "factor 1". The second

part of the instrument consists of 8 questions that reflect on self-confidence in learning with simulation, called "factor 2". Each question has 5 alternatives numbered as follows: (1) I strongly disagree with the statement, (2) I disagree with the statement, (3) undecided – neither agree nor disagree with the statement, (4) I agree with the statement, and (5) I strongly agree with the statement. To calculate the score, the means and standard deviation of each question were measured globally, by domains, and also for each simulation scenario.

A descriptive analysis of the characterization variables of the sample was carried out. Quantitative variables were described by mean and standard deviation and categorical variables were described by absolute and relative frequencies. The Shapiro-Wilk normality test was performed to verify the distribution of variables, as well as the asymmetry and kurtosis values. The Generalized Estimating Equations (GEE) model with adjustments by the Bonferroni test and independent work correlation matrix were applied for the analysis of correlated variables, since each student responded twice in the role of actor and twice as an observer in four realistic simulation scenarios. For data with normal distribution, the linear model was used and, for those with asymmetric distribution, the gamma model was. All analyses were adjusted to the scenarios and roles assumed by the students. The significance level adopted was 5% ($p < 0.05$). The data were input into the Microsoft Excel program using the double independent method and the analyses were performed using the software SPSS version 21.0.

This study followed the guidelines and norms prescribed by Resolution 466 from 2012 by, the National Health Council (CNS), aiming to ensure the rights of research participants. The researchers responsible for translating and validating the Scale of Satisfaction and Self-Confidence with Learning in Brazil were consulted by e-mail and authorized its use. The project was approved by the Research Ethics Committee of the institution of the researchers, and all participants signed the Free and Informed Consent Form (TCLE) (CAAE 94630218.9.0000.5327).

RESULTS

The present study had the participation of 44 Nursing students, 20 (45.5%) from public educational institutions, and 24 (54.5%) from private ones. The mean age of the participants was 27.6 years (± 7.5), and 37 (84.1%) were female. The elected students were enrolled in the 6th (13), 7th (13), 8th (8), 9th (4), and 10th (6) semesters of graduation, with 26 (59%) between the 6th and 7th. Regarding knowledge about the realistic simulation methodologies, 26 (59%) declared that they had previous experience with this approach in their educational institutions. Regarding professional experience in the area of health, most students (72.7%) did not have a technical or nursing assistant course.

Each participant answered the questionnaire at the end of each of the four simulations, totaling 176 questionnaires. The instrument questions that obtained the highest score (4.84 ± 0.41) referred to the perception that the teaching method used in the simulation had been useful for learning and that the students had enjoyed learning through the simulation. The mean total score for the five questions that make up the module of the student's satisfaction with the learning process factor was 4.78 ± 0.37 (Table 1).

In the second part of the data collection instrument, the question that obtained the highest result was "my teacher used useful resources to teach the simulation" (4.82 ± 0.42). The mean total score for the eight questions that make up the module of the self-confidence factor was 4.44 ± 0.39 (Table 1).

When comparing satisfaction and self-confidence with learning in relation to the semester the participant was studying, students in the 8th and 9th semesters had higher averages in the self-confidence factor compared to the others ($p<0.001$) (Table 2).

Regarding the assessment of students' satisfaction and self-confidence, according to the role played in the realistic simulation, the observers presented respectively the averages of 4.76 (± 0.05) and 4.43 (± 0.05), while the active participants obtained the averages 4.80 (± 0.04) and 4.45 (± 0.05). These results showed no statistically significant difference ($p<0.05$) when comparing whether students participated in the scenarios by acting or observing.

DISCUSSION

The assessment of satisfaction and self-confidence with learning are important factors to be monitored when new activities or an action seldom experience dare proposed to students. In this sense, the discussion about the usefulness of realistic simulation as a teaching method, as well as the students' approval in its application, corresponded to the questions with the highest score in the study. Such results are similar to other studies that used realistic simulation as a teaching methodology, demonstrating high levels of academic satisfaction, self-confidence, and knowledge(4,11). The students also positively highlighted, in the satisfaction factor, the way their teacher teaches through the methodology of realistic simulation. This fact can be attributed to its nature of providing students with a leading role in their learning, placing the teacher in the role of facilitator, and making the participants develop self-confidence and motivation(12-13).

Table 1 – Assessment of the items of the Student Satisfaction and Self-Confidence in Learning instrument (N = 176). Porto Alegre, Rio Grande do Sul, Brazil, 2022

Instrument Items	Mean	Standard deviation	% agree /totally agree
Factor 1 – Satisfaction with current learning			
1. The teaching methods used in this simulation were helpful.	4.84	0.41	175 (99.4)
2. The simulation provided me with a variety of materials and activities to further my learning of the medical-surgical curriculum.	4.66	0.60	166 (94.3)
3. I liked the way my teacher taught through simulation.	4.84	0.41	175 (99.4)
4. The teaching materials used in this simulation were motivating and helped me to learn.	4.73	0.57	165 (93.8)
5. The way my teacher taught through simulation was appropriate for the way I learn.	4.83	0.41	174 (98.9)
Factor 2 – Self-confidence in learning			
6. I am confident that I have mastered the content of the simulation activity that my teacher presented.	4.26	0.73	158 (89.8)
7. I am confident that this simulation included the content needed to master the medical-surgical curriculum.	4.57	0.64	167 (95.4)
8. I am confident that I am developing skills and gaining the necessary knowledge from this simulation to perform the necessary procedures in a clinical setting.	4.66	0.56	171 (97.7)
9. My teacher used useful resources to teach the simulation.	4.82	0.42	173 (98.8)
10. It is my responsibility as a student to learn what I need to know through simulation.	4.58	0.66	168 (96.0)
11. I know how to get help when I don't understand the concepts covered in the simulation.	4.46	0.64	164 (93.2)
12. I know how to use simulation activities to learn skills.	4.44	0.66	162 (92.0)
13. It is the teacher's responsibility to tell me what I need to learn about the theme developed in the simulation during the class.	3.74	1.23	108 (61.4)
Factor 1 – Satisfaction with current learning	4.78	0.37	170 (96.6)
Factor 2 – Self-confidence in learning	4.44	0.39	157 (89.2)

Fonte: Dados da Pesquisa, 2022.

Table 2 – Assessment of Student Satisfaction and Self-Confidence in Learning according to the semester of the participant's undergraduate course. Porto Alegre, Rio Grande do Sul, Brazil, 2022

Items	Factor 1 – Satisfaction with current learning	Factor 2 – Self-confidence in learning
6th semester Means±SE*	4.80 ± 0.05	4.38 ± 0.05[b]
7th semester Means±SE*	4.74 ± 0.05	4.46 ± 0.05[b]
8th semester Means±SE*	4.86 ± 0.06	4.66 ± 0.06[c]
9th semester Means±SE*	4.85 ± 0.09	4.69 ± 0.09[c]
10th semester Means±SE*	4.67 ± 0.07	4.07 ± 0.07[a]
p†	0.207	< 0.001

Source: Research Data, 2022.
* Standard error; † Adjusted for the role and the scenario by the Generalized Estimating Equations (GEE) model; [a, b, c] Equal letters do not differ according with Bonferroni test at 5% significance.

In regard to self-confidence with learning, the students highlighted the resources used to execute the simulations, as well as the familiarity of the realistic simulation scenarios with the situations experienced in practice with real patients. The fidelity of the space in which the realistic simulation is intended to be carried out is an extremely important aspect in the structuring of the scenarios, and the facilitator should be concerned with making it as similar as possible to what is found in the environment that it aims to represent[14].

The question of the scale used, which dealt with the teacher's responsibility for the student's learning, presented lower means than the others. We believe that the interpretation of the statement proposed to the students was not clear, or they placed the responsibility for their learning on the teacher, without placing themselves critically as protagonists of this process. Active methodologies seek to make the student responsible for their own learning, making them assume the central role, granting the teacher the role of supporter in the construction of knowledge[15]. It should be considered that the difficulty in understanding the teacher's role in active methodologies may result from training (prior to graduation) based on totally unilateral teaching methodologies[15].

Comparing the roles of participant and observer, no statistically significant results were found that showed a difference in satisfaction and self-confidence between the two types. In the results of a comparative study between the roles of participant and observer, the first was highlighted, as the students reported that they "learn by doing"[1]. In other studies that address this issue, no significant differences were demonstrated in satisfaction between the two roles played in the realistic simulation(16-18). Concern about the role of the observer in realistic simulation is necessary, as it interferes with learning outcomes. The use of an orientation guide for the observer is able to make them more attentive and immersed in the realistic simulation, because, by focusing on the objectives of the activity, the student has a better understanding and, consequently, higher levels of satisfaction with learning[19].

Carrying out realistic simulation scenarios based on good practices involves important elements, which must be followed with methodological rigor, valuing each stage. In addition, for learning to occur in the most equal way possible, it is essential to involve all participants, regardless of their role, from the briefing to the debriefing[20].

It should be considered that realistic simulations are under development as a teaching methodology, and can be performed in different debriefing formats, for example[2]. The participants of the present study were students from different educational institutions, and previous experience with realistic simulation activities did not influence the high scores of satisfaction and self-confidence with learning.

The sample of this study consisted of students from five undergraduate nursing semesters (from the 6th to the 10th), and the students from the 8th and 9th semesters showed higher levels of self-confidence in relation to the others. Realistic simulation provides greater levels of self-confidence, which influence learning and improve one's perception of their professional role[4]. Aspects such as fear and insecurity may be present in students in their first contact with patients, especially because they are faced with the necessary demands for the performance of their future profession, and teaching strategies based on realistic simulation help dealing with difficult situations.

As limitations of this study, the non-randomization of participants and the use of a convenience sample can be cited. The small sample with students from different institutions indicates the need to expand this research.

CONCLUSION

The present study showed no statistically significant difference in satisfaction and self-confidence in the learning of nursing between studentswho were observers and those who were participants in realistic simulation scenarios. Likewise, prior knowledge of the realistic simulation methodology did not prove to be a determining factor in participants' satisfaction and self-confidence.

Nursing students in the final semesters of the undergraduate course showed higher levels of self-confidence with learning. The fidelity of the scenarios performed was also one of the aspects highlighted by the participants. As a challenge for future studies, it is valid to evaluate the structure of a syllabus that makes use of realistic simulations and the results in the assessment of satisfaction and self-confidence with learning; it would also be relevant to analyze the different roles played (participants and observers) in the scenarios. The sample size and the fact that the sample was selected by convenience can be considered as limitations of this study, since even having reached the proposed objectives, it was not possible to correlate students from different institutions, which leads to the need for new investigations.

The contribution that the present work intends to bring to the field concerns the expansion of knowledge about the design of the realistic simulation methodology. When carrying out educational activities that use realistic simulations, the planning of the objectives to be achieved, the preparation of the participants, and the degree of fidelity of the scenarios are all relevant factors.

REFERENCES

1. Reime MH, Johnsgaard T, Kvam FI, Engeberg JM, Breivik M, Brattebo G. Learning by viewing versus learning by doing: a comparative study of observer and participant experiences during an interprofessional simulation training. J Interprof Care. 2017;31(1):51-8. doi: http://doi.org/10.1080/13561820.2016.1233390.
2. Nascimento JSG, Oliveira JLG, Alves MG, Braga FTMM, Góes FSN, Dalri MCB. Métodos Debriefing methods and techniques used in nursing simulation. Rev Gaúcha Enferm. 2020;41:e20190182. doi: https://doi.org/10.1590/1983-1447.2020.20190182.
3. Guinea S, Andersen P, Reid-Searl K, Levett-Jones T, Dwyer T, Heaton L, et al. Simulation-based learning for patient safety: the development of the tag team patient safety simulation methodology for nursing education. Collegian. 2019;26:392-8. doi: http://doi.org/10.1016/j.colegn.2018.09.008.
4. Costa RRO, Medeiros SM, Coutinho VRD, Mazzo A, Araújo MS. Satisfaction and self-confidence in the learning of nursing students: randomized clinical trial. Esc Anna Nery. 2020;24(1):e20190094. doi: http://doi.org/10.1590/2177-9465-EAN-2019-0094.
5. Almeida RGS, Mazzo A, Martins JCA, Baptista RCN, Girão FB, Mendes IAC. Validation to Portuguese of the scale student satisfaction and self-confidence in learning. Rev Latinoam Enferm. 2015;23(6):1007-13. doi: http://doi.org/10.1590/0104-1169.0472.2643.
6. Franzon JC, Meska MHG, Cotta Filho CK, Machado GCC, Mazzo A. Implications of the clinical practice in simulated activities: student satisfaction and self-confidence. Rev Min Enferm. 2020;24:e-1274. doi: http://doi.org/10.5935/1415-2762.20200003.
7. Bates TA, Moore LC, Greene D, Cranford JS. Comparing outcomes of active student and observer roles in nursing simulation. Nurse Educ. 2019;44(4):216-21. doi: http://doi.org/10.1097/NNE.0000000000000603.
8. Blanié A, Gorse S, Roulleau P, Figueiredo S, Benhamou D. Impact of learners' role (active participant-observer or observer only) on learning outcomes during high-fidelity simulation sessions in anaesthesia: a single center, prospective and randomised study. Anaesth Crit Care Pain Med. 2018;37(5):417-22. doi: http://doi.org/10.1016/j.accpm.2017.11.016.
9. Harder N, Ross CJM, Paul P. Student perspective of roles assignment in high-fidelity simulation: an ethnographic study. Clin Simul Nurs. 2013;9(9):329-34. doi: http://doi.org/10.1016/j.ecns.2012.09.003.
10. Fluharty L, Hayes AS, Milgrom L, Malarney K, Smith D, Reklau MA, et al. A multisite, multi-academic track evaluation of end-of-life simulation for nursing education. Clin Simul Nurs. 2012;8(4):135-43. doi: http://doi.org/10.1016/j.ecns.2010.08.003.
11. Ferreira RPN, Guedes HM, Oliveira DWD, Miranda JL. Realistic simulation as a method of teaching in the learning of the health field students. Rev Enferm Cent-Oeste Min. 2018 [cited 2020 Mar 20];8:e2508. Available from: http://seer.ufsj.edu.br/index.php/recom/article/view/2508/1932.
12. Olaussen C, Heggdal K, Tvedt CR. Elements in scenario-based simulation associated with nursing students' self-confidence and satisfaction: a crosssectional study. Nurs Open. 2019;7(1):170-9. doi: https://doi.org/10.1002/nop2.375.
13. Zapko KA, Ferranto MLG, Blasiman R, Shelestak D. Evaluating best educational practices, student satisfaction, and self-confidence in simulation: a descriptive study. Nurse Educ Today. 2018;60:28-34. doi: http://doi.org/10.1016/j.nedt.2017.09.006.
14. INACSL Standards Committee. INACSL standards of best practice: simulationSM simulation design. Clin Simul Nurs. 2016;12(1):S5-S12. doi: http://doi.org/10.1016/j.ecns.2016.09.005.

15. Marques LMNSR. Active methodologies as strategies to develop education in values in nursing graduation. Esc Anna Nery. 2018;22(3):e20180023. doi: http://doi.org/10.1590/2177-9465-EAN-2018-0023.
16. Rogers T, Andler C, O'Brian C, van Schaik S. Self-reported emotions in simulation-based learning: active participants vs. observers. Simul Healthc. 2019;14(3):140-5. doi: http://doi.org/10.1097/SIH.0000000000000354.
17. Ying Y, Yacob M, Khambati H, Seabrook C, Gerridzen L. Does being in the hot seat matter? effect of passive vs active learning in surgical simulation. Am J Surg. 2020;220(3):593-6. doi: http://doi.org/10.1016/j.amjsurg.2020.01.052.
18. Fusco NM, Foltz-Ramos K. Effect of observation versus active participation on self-reported interprofessional collaborative behaviors. Am J Pharm Educ. 2019;86(5):ajpe7492. doi: https://doi.org/10.5688/ajpe7492.
19. Norman J. Differences in learning outcomes in simulation: the observer role. Nurse Educ Pract. 2018;28:242-7. doi: http://doi.org/10.1016/j.nepr.2017.10.025.
20. Kaneko RMU, Lopes MHBM. Realistic health care simulation scenario: what is relevant for its design? Rev Esc Enferm USP. 2019;53:e03453. doi: http://doi.org/10.1590/S1980-220X2018015703453.

Acknowledgments/Funding:
National Council for Scientific and Technological Development (CNPq).

Authorship contributions:
Project management: Ariane Teixeira, Ana Luísa Petersen Cogo.
Formal analysis: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.
Funding acquisition: Ariane Teixeira, Ana Luísa Petersen Cogo.
Concept: Ariane Teixeira, Ana Luísa Petersen Cogo.
Data selection: Ariane Teixeira, Ana Luísa Petersen Cogo.
Writing – original draft: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.
Writing – proofreading and editing: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.
Research: Ariane Teixeira, Ana Luísa Petersen Cogo.
Methodology: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.
Resources: Ariane Teixeira, Ana Luísa Petersen Cogo.
Software: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.
Supervision: Ana Luísa Petersen Cogo.
Validation: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.
Visualization: Ariane Teixeira, Juliana Petri Tavares, Ana Luísa Petersen Cogo.

The authors declare that there is no conflict of interest.

Corresponding author:
Ana Luísa Petersen Cogo
E-mail: analuisa@enf.ufrgs.br

Associate editor:
Carlise Rigon Dalla Nora

Received: 12.22.2021
Approved: 05.16.2022

Editor-in-chief:
Maria da Graça Oliveira Crossetti