Opinion of nursing students on realistic simulation and the curriculum internship in hospital setting

Opinião dos estudantes de enfermagem sobre a simulação realística e o estágio curricular em cenário hospitalar

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Abstract

Objective: Comparing the opinion of undergraduate nursing students about the realistic simulation and the curricular internship in a hospital setting.

Methods: A comparative study with 55 nursing students who were divided into a control group that did a curriculum internship in a hospital setting, and an experimental group that participated of a realistic simulation prior to the hospital setting. Both groups answered an instrument based on the Likert scale to verify the effectiveness of the two teaching strategies.

Results: In the experimental group, 69 % totally agreed that the simulation consolidated the teaching-learning process. In the control group, most students (38.5 %) totally disagreed with the internship in the hospital setting as an isolated strategy.

Conclusion: In the opinion of nursing students, the realistic simulation was effective to acquire and refine knowledge and security, in addition to develop critical thinking in face of the common routine clinical situations in nursing care practice.

Resumo

Objetivo: Comparar a opinião dos estudantes de graduação em enfermagem sobre a simulação realística e sobre o estágio curricular em cenário hospitalar.

Métodos: Estudo comparativo realizado com 55 estudantes de enfermagem, divididos em: grupo controle que realizou estágio curricular em cenário hospitalar e grupo experimental realizou simulação realística antes do cenário hospitalar. Ambos os grupos responderam um instrumento baseado na escala de Likert para verificação da efetividade das duas estratégias de ensino.

Resultados: No grupo experimental, 69,0% concordaram totalmente que a simulação consolidava o processo de ensino-aprendizagem. No grupo controle, muitos estudantes (38,5%) discordaram totalmente com o estágio em cenário hospitalar como estratégia isolada.

Conclusão: A simulação realística foi efetiva na opinião dos estudantes de enfermagem para adquirir e aperfeiçoar conhecimentos e segurança, além de desenvolver o raciocínio crítico frente às situações clínicas comuns ao cotidiano da prática assistencial do enfermeiro.

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Introduction

High fidelity simulation is an educational tool capable of mimicking real clinical situations in a safe environment, and it allows that nursing students cognitively develop, as well as developing attitudinal and psychomotor clinical skills/competences.[1]

The simulation is a teaching method with the application of learning exercises that mimic real-life situations. The development of a theoretical framework based on scenarios and care guidelines for nurses is an important step in reshaping nursing education.[2]

The implementation of the simulation allows students to practice and correct their mistakes in situations of clinical routine, without risks to patients and with minimal risk to themselves.[3] The simulation allows the improvement of the performance of students from their own mistakes, learning from failures until getting it right, which is unacceptable practice in a real situation.[4,5]

The simulation is recommended for student assessment, development and exchange of ideas, teamwork and team leadership, creative thinking and problem solving - situations that ultimately focus on motivation.[1,6,7]

The aim of this study was to compare the views of undergraduate nursing students about the realistic simulation and the curricular internship in a hospital setting.

Methods

This is a comparative, prospective study carried out with 55 undergraduate nursing students in the Laboratory of Skills of Care of the Faculty of Ceilândia, in the Universidade de Brasília.

Students enrolled in the seventh, eighth or ninth semester of the nursing course were included in the study. Were excluded those who had not attended the courses "Adult health" and "Nursing care for critical and risk patients".

Students were divided into two groups: experimental and control. The control group did an internship in a hospital setting and attended lectures. The experimental group also did an internship and attended lectures, but with application of the simulation strategy before the internship program.

The experimental group was divided into subgroups consisting of five students to allow effective observation and debriefing (discussion) among all students and the teacher on the subject addressed in the simulation.

The simulation was implemented during a week prior to the internship, using the SimMan® patient simulator connected to a heart monitor and reproducing the vital signs, physiological findings such as heart rate, breath sounds, palpable pulse, among others, in real time. The simulator reproduces sounds and responses to questions by the control of an operator, teacher of the course.

Different clinical cases were used, which allowed the reproduction of objective and consistent situations in real time. During the simulation the participating student was able to call the patient's family and experts (played by the teacher and monitors) immediately, request spreadsheets with laboratory and radiological findings as deemed necessary, in order to promote spontaneity and reality to the proposed situation.

In order to maintain uniformity and realism among the different scenarios of operation, each participant was given 15 minutes to perform, after which the students in the experimental group (simulation), conducted by the teacher, gathered in the laboratory to discuss best practices, conflicts and issues related to self-confidence of students during the activities.

Students in the experimental group completed an instrument based on the Likert scale to verify the effectiveness of the strategy of realistic simulation as a vehicle to acquire and refine knowledge and security, and to develop critical and clinical thinking in face of common clinical situations in the daily care practice of nurses.

The control group filled out the same instrument, in which they expressed the influence of traditional pedagogical strategy to ensure a safe performance and the development of clinical and critical thinking in patient care.

All data were expressed as mean and standard deviation for quantitative variables, and as absolute and relative frequencies for qualitative variables. For statistical analysis and comparison between different groups, the Mann-Whitney test was used. In this analysis, the responses to the questions were represented by categories corresponding to values from one to five as follows: one as totally disagree, two as partially disagree, three as neutral, four as partially agree and five as totally agree.

The development of the study met the national and international standards of ethics in research involving human beings.

Results

A total of 55 students were accompanied, predominantly female and in the seventh semester, with a mean age of 22 years.

In the experimental group, most students (69%) totally agreed that this strategy consolidated the teaching-learning process and 27% partially agreed with this.

In addition, 44.8% totally agreed with the isolated use of this strategy in the curricular grid and 20.7% partially agreed. In the group without simulation 38.5% of participants totally disagreed that the internship should be kept as a curricular strategy alone (Figure 1).

According to the two groups, both strategies (simulation and internship) were relevant tools in the teaching-learning process. Hence, it was not possible to identify a statistically significant difference (p=0.1) between the approaches.

It is noteworthy that 51.7% said that the simulation should be implemented in the teaching-learning process due to broadening the relationships between teachers, students and patients; 58.6% considered this strategy a good tool for the more active development of autonomy; 76.9% stated that simulation promoted exposure to real clinical situations in a simulated and safe environment as the laboratory; and 55.2% affirmed that it has minimized damage to patients during care in the hospital setting (real).

In the control group, 31.2% of students stated that one of the main difficulties was coping with the insecurity in face of patients, followed by the lack of independence for care activities (25%). In this group, a minority (6.2%) reported that the main difficulties were to apply the newly learned techniques directly to patients, the lack of temporal parity between practice and theory, the exposure to situations that had not been studied yet, and the reduced time of internship.

The predominant advantages reported by students in the control group were the experience of the hospital reality even without the ad-

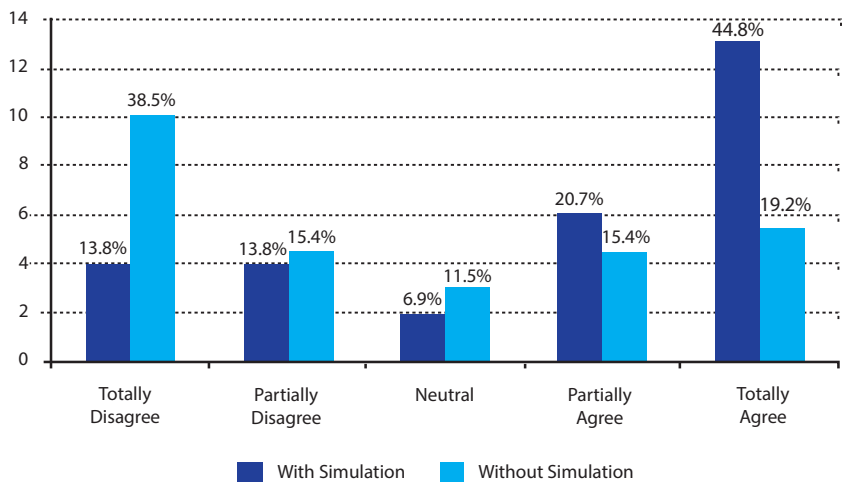

Figure 1. Opinion regarding the use of simulation as an isolated curricular strategy

equate contribution (37.5%), correlation of theory with practice (31.2%), exposure to different cases (25%) and only a minority (6.2%) stated that the internship isolatedly allowed the elaboration of critical thinking.

In the experimental group, on its turn, the results showed that 33.3% of students considered the lack of time and space to implement the simulation one of the greatest difficulties; 16.7% cited few practices and little access to the lab. Moreover, the exacerbation of anxiety triggered by the implementation of an active/participatory evaluation, the lack of adequate physical infrastructure and the excessive number of students in classes (11.1%) were also considered limiting factors. Still from this perspective, a minority of students (5.6%) cited as difficulties faced in the implementation of high fidelity simulation, the high cost and the resistance of some professionals to accept the simulation as an effective practical strategy, as well as the insecurity and fear of adopting the wrong procedures.

In this group it was also found that the simulation has improved practice and theory (35%), produced greater confidence and safety during care (25%), developed agility and critical thinking (15%), allowed better interaction with the group and contact with various clinical situations (10%). Only 5% of the students mentioned that through the simulation strategy it was possible to experience situations that required more speed and agility from professionals.

As a suggestion, 81% of students indicated the need for extensive use of simulation throughout the semester together with lectures. In addition, 14.2% suggested adding the simulation in all disciplines (basic and specific) and 4.8% reinforced the need for a specific location to implement this strategy.

Discussion

The limitations of this study are related primarily to the sample size, because it was carried out in a single institution. The contribution of this study results are the new possibilities of knowledge acquisition, through a participative and realistic methodology that enables the learning itself, adding knowledge in the training process of the student.

The quality of care allied to patient safety demanded by citizens, requires higher professional qualifications, skills and safety to promote the welfare desired by the population.

Over the years, the high fidelity simulation has achieved consistency as an educational and training tool for the academic education and health professionals.[8] The scientific evidence reveals this is an important, innovative and complementary strategy that should be incorporated into the curriculum grid in order to consolidate and optimize the teaching- learning process of students.[4]

Practices involving simulation should be planned respecting the complexity of the scenarios of operation and the demands, in a way that students can gradually acquire the skills.[9]

Although students consider that this strategy can be adopted solely, studies recommend the integration of simulation in the learning environment as a support and complementary tool, allowing reasonable adjustments of students' skills in a systematic way. This process develops the capacity to perform, promote wellness, alleviate risks and ensure the safety of all involved.[1,10]

Students recognize the simulation and curriculum internship as practices that, when combined, broadly contribute to training and the opportunity to mix modalities that enrich and consolidate learning.[11]

The contact of students with an innovative situation can create tensions and interfere with the learning process.[12] However, the participation in simulation scenarios promotes mainly the learning and improvement of critical thinking.[13]

In this direction, recent systematic reviews have highlighted the use of this strategy as a vehicle for knowledge acquisition and early identification of deterioration of patients.[14,15] The simulation, if appropriately integrated, can be used in academic environments as an active learning methodology that provides advantages for the group of students, such as possibility of adapting theory into practice, greater confidence

and security in clinical practice, development of agility and critical thinking, in addition to allowing team interaction and enhancing the clinical experience from various clinical situations. In contrast, it was found that the curriculum internship isolated, exposes students to cope with the insecurity and lack of independence to act, and makes them apply newly learned techniques directly into patients without previous training.

In simulation activities, students have the opportunity to make mistakes, improve techniques and adopt procedures without fear of damages, considering the lab practices as a transition to reality in care. Thus, from the simulation experiments, it is believed that there is a reduction of errors in procedures in clinical situations identified from a continuum of action with reflection in the nursing process, a condition reinforced by the simulation group.[16]

However, the learning subsidized by the simulation has clear synergies with the curriculum of the nursing program and consistency with the educational intent of our times. As nursing is a practical profession, it presupposes competence in a number of predominantly psychomotor skills, and it needs to provide strategies for students that combine the act of caring with the theoretical-scientific framework of the classroom.

A high fidelity simulation enhances the teaching-learning process, due to the fact of being a relevant teaching strategy, which can be implemented in the curriculum grid to consolidate this process and expand the competencies and skills of students. Moreover, it contributes significantly when aggregated to a curriculum internship program. The results suggest that the use of simulation actively develops the abilities of clinical reasoning and critical thinking, enabling a safe practice, minimizing risks and improving students' performance in face of patients.

Conclusion

In the opinion of nursing students, the realistic simulation was effective to acquire and refine knowledge and security, in addition to develop critical thinking in face of the common routine clinical situations in nursing care practice.

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Collaborations

Valadares AFM participated in the project design, data collection and interpretation of data and writing of the article. Magro MCS contributed to the project design and planning, data interpretation, drafting and critical review of the relevant intellectual content, and approval of the final version to be published.

References

1. Bland AJ, Topping A, Wood B. A concept analysis of simulation as a learning strategy in the education of undergraduate nursing students. Nurse Educ Today. 2011;31(7):664-70.
2. Waxman KT. The development of evidence-based clinical simulation scenarios: guidelines for nurse educators. J Nurs Educ. 2010;49(1):29-35.
3. McCaughey CS, Traynor MK. The role of simulation in nurse education. Nurse Educ Today. 2010;30(8):827-32.
4. Kardong-Edgren SE, Starkweather AR, Ward LD. The integration of simulation into a clinical foundations of nursing course: student and faculty perspectives. Int J Nurs Educ Scholarsh. 2008;5: Article 26.
5. Berragan L. Simulation: an effective pedagogical approach for nursing? Nurse Educ Today. 2011;31(7):660-3.
6. Ricketts B. The role of simulation for learning within pre registration nursing education - a literature review. Nurse Educ Today. 2011;31(7):650-4.
7. Shapira-Lishchinsky O. Simulations in nursing practice: toward authentic leadership. J Nurs Manag. 2014; 22(1):60-9.
8. Patow CA. Advancing medical education and patient safety through simulation learning. Patient safety & quality Healthcare [Internet]. 2005 [cited 2013 Nov 21]. Available from http://www.psqh.com/marapr05/simulation.html.
9. Wall BM. Religion and gender in a men's hospital and school of nursing, 1866-1969. Nurs Res. 2009;58(3):158-165.
10. Khalaila R. Simulation in nursing education: An evaluation of students' outcomes at their first clinical practice combined with simulations. Nurse Educ Today. 2014;34(2):252-8.
11. Cardoza MP, Hood PA. Comparative study of baccalaureate nursing student self-efficacy before and after simulation. Comput Inform Nurs. 2012;30(3):142-7.

12. Szpak JL, Kameg KM. Simulation decreases nursing student anxiety prior to communication with mentally ill patients. Clinical Simulation in Nursing. 2013;9(1):e13-9.

13. Guhde J. Using online exercises and patient simulation to improve students' clinical decision-making. Nurs Educ Perspect. 2010;31(6):387-9.

14. Lapkin S, Levett-Jones T, Bellchambers H, Fernandez R. Effectiveness of patient simulation manikins in teaching clinical reasoning skills to undergraduate nursing students: a systematic review. Clin Simul Nurs. 2010;6(6):e207-22.

15. Harder BN. Use of simulation in teaching and learning in health sciences: a systematic review. J Nurs Educ. 2010;49(1):23-8.

16. Kaddoura MA. New graduate nurses' perceptions of the effects of clinical simulation on their critical thinking, learning, and confidence. J Contin Educ Nurs. 2010;41(11):506-16.