IMPACT OF THE REALISTIC SIMULATION METHODOLOGY IN NURSING UNDERGRADUATE COURSE

IMPACTO DA METODOLOGIA DE SIMULAÇÃO REALÍSTICA NA GRADUAÇÃO DE ENFERMAGEM IMPACTO DE LA METODOLOGÍA DE SIMULACIÓN REALÍSTICO EN LA GRADUACIÓN DE ENFERMERÍA

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ABSTRACT

Objective: to analyze the impact of realistic simulation methodology on nursing students' view. **Method:** quantitative-qualitative study, based on action research, using a semistructured questionnaire with a sample of 133 students from the 6th to the 10th semester in a private university. **Results:** 98% of the students said they liked the classes with the simulation methodology; 97% stated they felt a difference in learning with the simulation; of these, 62% affirmed they had a higher learning achievement when using simulation with simulated patients; and 35% stated having higher learning achievement when using the static doll. **Conclusion:** the present study showed a positive impact of the simulation methodology among the students, demonstrating a preference in the use of this methodology in detriment to the traditional teaching method and that the use of this methodology allows improvements in the learning process. **Descriptors:** Simulation; Nursing; Teaching; Education; Learning.

RESUMO

Objetivo: analisar o impacto da metodologia da simulação realística na visão dos acadêmicos de enfermagem. **Método:** estudo quanti-qualitativo, a partir da pesquisa-ação, utilizando questionário semiestruturado com amostra de 133 acadêmicos do 6º ao 10º semestre em uma Universidade privada. **Resultados:** 98% dos acadêmicos afirmaram gostar muito da aula com a metodologia de simulação; 97% relataram ter diferença na aprendizagem com a simulação; destes, 62% confirmaram ter maior rendimento no aprendizado quando utilizada a simulação com paciente simulado; e 35% mencionaram ter melhor rendimento quando utilizado o boneco estático. **Conclusão:** o estudo demonstrou impacto positivo da metodologia de simulação entre os acadêmicos ao demonstrarem preferência no uso desta metodologia em detrimento ao método de ensino tradicional e que o uso dessa metodologia permite melhorias no processo de ensino-aprendizado. **Descritores:** Simulação; Enfermagem; Ensino; Educação.

RESUMEN

Objetivo: analizar el impacto de la metodología de la simulación realística en la visión de los académicos de enfermería. **Método:** estudio cuantitativo-cualitativo, a partir de la investigación, utilizando cuestionario semi-estructurado con muestra de 133 académicos del 6º al 10º semestre en una Universidad privada. **Resultados:** 98% de los académicos afirmaron que gustaban mucho de la clase con la metodología de simulación; 97% relataron tener diferencia en el aprendizaje con la simulación; de este, 62% confirmaron tener mayor rendimiento en el aprendizaje cuando utilizado la simulación con paciente simulado; y 35% mencionaron tener mejor rendimiento cuando utilizado el muñeco estático. **Conclusión:** el estudio demostró impacto positivo de la metodología de simulación entre los académicos al demostrar preferencia en el uso de esta metodología en detrimento al método de enseñanza tradicional y que el uso de esa metodología permite mejorías en el proceso de enseñanza-aprendizaje. **Descriptores:** Simulación; Enfermería; Enseñanza; Educación; Aprendizamiento.

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INTRODUCTION

The National Curriculum Guidelines for Nursing (DNC/Enf) establishes mandatory norms that regulate the training of nurses at the undergraduate level, providing a single direction and establishing the profile of the independent egress from the university of training. The DCN was established by Resolution CNE/CES no. 03/2001, after a movement of articulation and dialogue with nursing professionals, nursing professors, Cofen and ABEN. This guideline highlights the importance of building Political Pedagogical Projects (PPPs), which contemplate the dimensions necessary for the training of nurses for a generalist, critical and reflexive education, capable of acting at all levels of health care in Brazil.¹

In the current context where the virtual world reigns, in which students are immersed in the digital world, often distancing themselves from interpersonal relationships and face-to-face interaction with others, many young people prefer interaction through virtual communities.

This new reality encompasses the challenge of training nurses, and the curriculum and the teaching/learning process have been the subject of many discussions, in which debates on a more complete and holistic curriculum for the training of these health professionals emerge.² The curriculum is guided by the DCN and aims to train a professional qualified for the Nursing Practice, thus enabling the exercise of general skills and abilities such as health care, decision making, communication, leadership, continuing education, administration and management.³ To achieve this result, it is necessary to achieve the goals proposed by each discipline of the curriculum, thus promoting the construction of knowledge, skills, attitude and norms necessary for the participation of students in the teaching/learning process, resulting in the formation of a qualified professional, instigated to participate of his training process as co-author of his teaching/learning process.

However, in order to achieve such challenges, it is necessary to evaluate, monitor and improve the teaching methods used in order to achieve a professional education of this more critical, humanist and reflective nurse.

Faced with the new demands put on by society, the training institutions have been strained to adapt their pedagogical praxis regarding traditional teaching to redirect the teacher to assume a dialogical posture in the

classroom, allowing students to be co-authors of their learning, and preventing the teacher from being seen as the center of the teaching process or the holder of knowledge.

In this sense, we do not intended to remove the responsibility of the teaching/learning process from the teacher, but rather to encourage students to have autonomy in the learning process. Thus, the teacher becomes a reference to the students when using methods that provide and stimulate their participation in the construction of the learning process, in which the realistic simulation methodology has been proving to be a useful tool.⁴

Realistic simulation has been used as a technological resource in teaching health sciences, a teaching methodology based on Problem Based Learning (PBL) that enables the student to have training experiences in the various clinical situations based on real facts and in a safe environment, in the which error exposes patient safety to risks, in addition to providing the student with a clinical reasoning, practical performance, acquisition of skills and improvement in the communication between the multidisciplinary team and the patient.⁵

The use of clinical simulation in the teaching/learning process has been a subject of recent studies and has proven to be an effective method in the teaching/learning process and that arouses greater interest on the part of students. The methodology with realistic simulation transports the student to scenarios that are close to the real, in which they are allowed to make mistakes, to redo procedures, to discuss interventions and to perform patient care without risks, which in the real environment could cause damages, increased length of hospitalization and increased expenses during hospitalization.

This methodology can make possible a more robust training by consolidating theory and practice simultaneously. The realistic simulation methodology also contributes as a pedagogical tool for effective communication, which results in a higher quality of patient care and safety, directing it towards a training of a professional who is responsible for the safe and conscious care of their actions.

OBJECTIVE

To analyze the impact of the realistic simulation methodology on nursing students' view.

METHOD

This is a quantitative and qualitative study, based on the action research, since it is a participative methodology, in which the researcher is inserted in the intervention and can map the knowledge produced from the strategy and practice of the research and action, considering the knowledge based on the groups involved. Knowledge can be generated and obtained from the interlocution between researchers and actors of the situation from the intervention carried out by the research, thus enabling changes or improvements in the teaching/learning process.⁶

This research was evaluated and authorized by the Research Ethics Committee of the State University of Bahia under opinion no. 1418717. It is a result of the Scientific Initiation Program of the University Center Jorge Amado, in which the participants belong to a larger sample related to the master's project entitled Use of the Realistic Simulation Methodology as a Technological Resource Applied to the Teaching/Learning Process: Approaches from Basic to Higher Education, through a technical cooperation with the Master's Program in Management and Technology applied to Education (GESTEC) of the State University of Bahia in the year2016.

The codenames were identified with the letter "e" followed by numerical order. The place chosen for the research was a private university in the city of Salvador/Bahia, which has a simulation laboratory.

The data collection instrument used for this research was the semi-structured questionnaire on satisfaction, applied after the didactic intervention, which had been performed with each class. The interventions with the traditional method and with realistic simulation were conducted at different moments, which allowed the analysis of the satisfaction surveys, since the student participated in both interventions and at the end opined about the method used.

The sample had a total of 133 satisfaction surveys of students between the 6th and 10th semesters. The inclusion criteria were nursing students aged 18 or older who had freely agreed to participate in the study; the exclusion criteria were students not enrolled and who had not participated effectively in any of the project stages. For data analysis, we used a worksheet with database in Excel 2016.

RESULTS

A total of 133 students, mainly from the 6th and 10th semesters, participated in the study. Most of the students (98%) who answered the satisfaction survey stated that they like the methodology with simulation, whereas only 1% said they liked it very little and 1% did not like the methodology. It is emphasized that 97% affirmed that there were positive differences in learning when compared to the traditional method.

It was also verified that 21% preferred the teaching method with the simulation methodology using static doll and 78% preferred the simulation using a simulated patient. Also in this perspective, a minority of the students (1%) did not answer to this questionnaire item. In addition, 62% considered that they have a higher performance in their learning when using the simulation methodology with the simulated patient; 35%, using the static doll; 2% said to have higher performance with the traditional teaching method; and only 1% did not answer.

Regarding the qualitative analysis, the comments of the students who participated in the survey extracted from the satisfaction survey is described above:

- Excellent, explanatory and essential class.*
(e1)
- The class using the simulation methodology was much more interesting and with higher performance.* (e2)
- It was very constructive and interesting because it increases the knowledge on the subject, as well as clarifies doubts and enables us to apply this knowledge in an unexpected situation.* (e3)
- The simulation was very constructive and proved to be more effective than the traditional method; it allows for greater and better understanding and it is quite important for saving lives.* (e4)
- I really liked the initiative; I hope to have other opportunities like this.* (e5)
- Classes using the simulation have a greater interaction between students and the teacher and this enhances learning.* (e6)
- I loved the class with simulation; I found it very interesting. It allowed learning the content in a faster and more effective way, thanks!* (e7)
- We need more classes like this.* (e8)
- The introduction of the realistic simulation methodology stimulates and guarantees the effectiveness of theoretical and practical classes!* (e9)
- I hope this innovative learning experience remains.* (e10)

We should have more classes using simulation with simulated patient. (e11)

The results revealed that 99% of the students already knew the method realistic simulation; this research provided a practical experience. Thus, the stigma in participating in the survey was positive and effective,

allowing a better evaluation of the students regarding the method, since during the survey they were not being evaluated and this fact may have corroborated for an improvement in the dynamics of the simulation, as seen in Figure 1.

What do you think of the simulation methodology?	%
I do not know	-
I do not like it	1
I like it a little	1
I like it a lot	98
When comparing a class using the simulation methodology with a normal (traditional) class, you would say the simulation:	
Presents no difference in learning	3
Presents difference in learning	97
Do you prefer a class with:	
Projection and the teacher explaining the subject	-
Simulation using a static doll	21
Simulation using simulated patient doll	78
NA (not applicable)	1

Figure 1. Results of students (n = 133) regarding satisfaction issues, applied after the two interventions. Salvador (BA), Brazil, 2016.

DISCUSSION

The results of this study showed that the use of realistic simulation methodology has a better acceptance of students when compared to the traditional method and that it can positively influence the performance of practical skills of nursing students. It may also contribute to the immersion of the students as co-authors of their learning by involving them in this process.

The affirmation of the majority of the participants (78%) that there was difference in learning by using the simulation methodology can be associated to the safe and simulated environment; it is the moment to address the high quality of the learning, review contents understood in the theory of the other curricular components, that dialogue with the context addressed. The students end up taking time and feel free to make mistakes and be guided by the teacher to the correct or more adequate conduct for a given situation applied to the simulated practice of the daily work.⁷

In addition to the random learning opportunities through clinical experiences that are often linked to the patient type and to the practice scenario, it is essential for nursing students to train before they work so that they can consider issues related to patient safety.⁸⁻⁹⁻¹⁰⁻¹¹

The fact that 79% of the participants affirmed that they prefer a class with the simulation methodology reinforces the necessity of adherence to new methodologies in undergraduate teaching that provide interaction among the students in the construction and application of contents to

the simulated practice, since the use of the methodology of realistic simulation requires a demand in the mastery of skills that depend on the practice of tasks, involving people, equipment and devices that provide a real clinical setting. The use of this methodology allows the student to develop skills related to teamwork, clinical reasoning, intense learning experiences and improvement in the quality of patient care and safety with experiences that imply characteristics of a real clinical situation.¹²⁻¹³

These skills are generated through the identification of health needs, preparation of care plans and development of cognitive, affective and psychomotor skills.

In this way, the realistic simulation methodology is a way that allows the academic to have mastery of learning and managing a real practical situation in a controlled and safe environment, in which errors will not cause serious or real repercussions in patients. Training skills during Nursing undergraduate course is a constant practice in the teaching process and has always been linked to simulation.¹⁴ Realistic simulation allows for a more integrated training, since the student, from the beginning of the academic process, has been instigated to work in the clinical situations that are no longer only known theoretically and happen to be performed throughout the training process, thus making theory closer to practical reality.⁸⁻¹⁵

The old manikins used in universities only facilitate the demonstration of techniques by the teacher and were not tied to a situation or environment that represented a real clinical scenario. With the advances of

technology and the search for the implementation of practical classes, universities have invested in technologies and equipment that enable teachers to apply this methodology more reliably.

Skills improvement, coupled with cognitive and psychomotor skills gain, is possible because the simulation represents a technique that adds dexterity, mental ability and assertive responsiveness in which there is opportunity to practice skills in a safe environment, thus allowing skills improvement with repeated exposure over time.¹⁶

For the application of the simulation methodology, several types of technological resources can be used in the teaching/learning process, which can be classified in high technology (high costs), such as robots or manikins, monitors, which are classified as low, moderate or high fidelity, according to their ability to accurately reproduce sounds or images, and those of low technology, which are people who simulate the patient and family member, with the help of low-cost scenic makeup, and have the capacity to impact the academics before a clinical situation closer to reality in almost all the characteristics of a clinical experience.¹⁷

So that simulation practices happen correctly, they must be planned and structured respecting the complexity between the performance scenarios and the requirements, so that the students receive a feedback after each practice, with a discussion of the actions performed.

CONCLUSION

The results of this study evidenced the positive impact of the use of the simulation methodology among the students since they showed their preference for applying the realistic simulation methodology as a potential tool for the teaching/learning process, having the nursing undergraduate curriculum as a supporting tool, proving to be able to meet the current educational demands.

When analyzing the joint use of the two methodologies, simulation with scenic makeup in the Nursing undergraduate course, it showed to be an innovative method and that encourages improvements in the teaching/learning process.

The results and opinions of the students who participated in the research revealed that the impact of this method was effective in making students develop critical thinking in face of the clinical situations of the nurses' practice and of care in a safe, real and

controlled environment. Also, there was a preference for the use of the simulation methodology when compared to the traditional method (theory).

Therefore, further studies and more in-depth reflections on the subject are needed to analyze the effectiveness of the use of realistic simulation methodology and the traditional method, linked to the use and preparation of teachers and teaching institutions to apply this method at undergraduate courses.

The limitations of this study are related to the costs, which made it impossible to select a larger sample.

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Impact of the realistic simulation methodology...

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