

# CUIDADO É FUNDAMENTAL

Escola de Enfermagem Alfredo Pinto – UNIRIO

RESEARCH

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## SATISFACTION AND SELF-CONFIDENCE WITH REALISTIC SIMULATION AS AN ACTIVE TEACHING-LEARNING METHOD

*Satisfação e autoconfiança com a simulação realística como método ativo de ensino aprendizagem*

*Satisfacción y confianza en uno mismo con la simulación realista como método activo de enseñanza-aprendizaje*

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### ABSTRACT

**Objetivo:** to analyze the satisfaction and self-confidence of students in a realistic simulation clinical setting. **Method:** almost experimental and quantitative study. Sociodemographic questionnaire, pre-test and post-test knowledge, scenario verification checklist, and satisfaction and self-confidence scale were applied. Approved by the Research Ethics Committee under opinion number 05290\2021. **Results:** sample composed of 53 students from the 4th year of Nursing at a University Center in Araras/SP in 2021. The majority did not have previous training, but all showed more correct answers in the post-test. All considered the teaching methods used in the simulation useful and effective, 94.3% understood that the way the teacher taught was adequate for obtaining knowledge, 64.1% are more confident in mastering the content. **Conclusion:** the combination of active methodologies and realistic simulation resulted in an increase in knowledge and self-confidence of students for the training of qualified professionals.

**DESCRIPTORS:** Simulation; Learning; Teaching; Personal satisfaction; Nursing;

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## RESUMO

**Objetivo:** analisar a satisfação e autoconfiança dos estudantes em cenário clínico de simulação realística. **Método:** estudo quase experimental e quantitativo. Foram aplicados questionário sociodemográfico, pré-teste e pós-teste de conhecimento, checklist de verificação do cenário e escala de satisfação e autoconfiança. Aprovado pelo Comitê de Ética em Pesquisa sob parecer nº 05290\2021. **Resultados:** amostra composta por 53 estudantes da 4ª série de Enfermagem de um Centro Universitário de Araras/SP no ano de 2021. A maioria não possuía formação prévia, porém todos apresentaram mais acertos no pós-teste. Todos consideraram os métodos de ensino utilizados na simulação úteis e eficazes, 94,3% entenderam que a forma como o docente ensinou foi adequada para a obtenção de conhecimentos, 64,1% estão mais confiantes em dominar o conteúdo. **Conclusão:** a combinação de metodologias ativas e simulação realística resultou em um aumento no conhecimento e autoconfiança dos estudantes para a formação de profissionais capacitados.

**DESCRIPTORS:** Simulação; Aprendizagem; Ensino; Satisfação pessoal; Enfermagem;

## RESUMEN

**Objetivos:** analizar la satisfacción y autoconfianza de los estudiantes en un escenario clínico de simulación realista. **Método:** estudio cuasi-experimental y cuantitativo. Se aplicaron cuestionario sociodemográfico, pre-test y post-test de conocimiento, lista de verificación del escenario y escala de satisfacción y autoconfianza. Aprobado por el Comité de Ética en Investigación bajo el dictamen número 05290\2021. **Resultados:** muestra compuesta por 53 estudiantes del 4º año de Enfermería de un Centro Universitario de Araras/SP en el año 2021. La mayoría no tenía formación previa, pero todos presentaron más respuestas correctas en el post-test. Todos consideraron que los métodos de enseñanza utilizados en la simulación fueron útiles y efectivos, el 94,3% entendió que la forma en que el docente enseñó fue adecuada para obtener conocimientos, el 64,1% está más seguro de dominar el contenido. **Conclusión:** la combinación de metodologías activas y simulación realista resultó en un aumento del conocimiento y autoconfianza de los estudiantes para la formación de profesionales capacitados.

**DESCRIPTORES:** Simulación; Aprendizaje; Enseñanza; Satisfacción personal; Enfermería.

## INTRODUCTION

Over the years, education and the professional training process in the health area have undergone various transformations in order to meet the needs of a constantly evolving society.<sup>1</sup> The search for new teaching methods and techniques has become essential for training ethical, competent and skilled future professionals.<sup>2</sup>

Teaching methodologies at university level vary according to the teacher's need to apply certain content in such a way that students find it easy to learn and apply in the future. The active methodology is gaining more and more space and recognition, since the teaching modality itself requires different techniques.<sup>3</sup>

This model focuses on the role of students in acquiring their own knowledge, encouraging learning autonomy so that they can make discoveries that contribute to their education. One of the active methodology models is realistic simulation, which, through clinical scenarios replicating real-life experiences, favors an environment of interactivity, guided reflection, impacting on both knowledge and skills and attitudes related to professional practice, helping with critical thinking and decision-making.<sup>4</sup>

The scenarios are based on clinical cases that help develop techniques, orientation and teamwork. Students learn from their own mistakes in everyday clinical situations, without being exposed to risks, and with the opportunity to repeat the scene several times, they return to techniques and situations in which they had failures or difficulties in performing.<sup>5</sup>

Healthcare teams have a lot of contact with patients and their families, which is why it is necessary to transmit trust, empathy,

attention and develop clinical reasoning, which is often not stimulated in the theoretical part of the studies. It is necessary to have the preparation that only real situations can provide.<sup>6</sup> The main objective of this study was to analyze students' satisfaction and self-confidence with the application of a realistic simulation clinical scenario as a teaching-learning method.

## METHOD

### Type of study

This is a quasi-experimental study with a quantitative approach that used three self-administered instruments: a questionnaire to characterize sociodemographics and specific knowledge before and after realistic simulation, a validated Student Satisfaction and Self-Confidence Scale<sup>7</sup> and a scenario monitoring checklist.

The study population consisted of students in the 4th year of the Nursing course at a private university center in the city of Araras/SP in the academic year 2021, corresponding to approximately 150 participants. All the students present in the practical classes in which the realistic simulations took place between June and December 2021 were included. To take part in the study, students had to meet the following criteria: be enrolled in the 4th year of the Nursing course and take part in practical classes. Those who refused to take part in the study were excluded from the sample.

Considering the context of the SARS-COV-2 pandemic and financial and environmental sustainability, these instruments were applied online via Google Form.

The sociodemographic characterization questionnaire was designed with variables of interest and is made up of items covering: age, gender, marital status, previous training in the health area and occupation.

The specific knowledge instrument is made up of three thematic questions, according to the main subject of the simulation scenario and will be answered before and after the application of the simulation.

During the execution of the scenario (scenario running), a scenario monitoring checklist was applied which allowed the students to monitor the competencies, skills and attitudes expected to be developed by the students taking part in the simulation.

The Student Satisfaction and Self-Confidence Scale,<sup>(7)</sup> is a scale made up of 13 items ranging from 1 to 3, which correspond to agree, indifferent and disagree respectively.

These instruments were applied individually and privately, after due explanations and assurances that they would participate voluntarily, following the Informed Consent Form (ICF), also presented online and with the possibility of downloading the signed copy by the researcher responsible for each participant.

The data obtained was organized into tables using Google Spreadsheets and analyzed descriptively. For the inferential analysis, after examining whether or not there was a normal distribution, possible associations were analyzed using the Chi-square and Fisher's exact tests. The responses to the satisfaction scale were analyzed using the Wilcoxon Ranks

test. Statistical analysis considered significance levels of 5% and a 95% confidence interval.

The project complies with National Health Council Resolution 466/2012. The project was approved by the Research Ethics Committee under opinion number 05290/2021.

The participants voluntarily signed an informed consent form, guaranteeing their confidentiality and anonymity and that there would be no direct or individual harm or benefit from the research.

## RESULTS

This study presents the results of student satisfaction with learning, as well as self-confidence, with reference to the teaching method: realistic simulation.

Of the 53 participants in the study in the first scenario, 83.1% were female with an average age of 31, and in the second scenario, of the 48 participants, 89.7% were female with an average age of 31. 73.3% of these students had no previous training in the health area.

There was no disagreement among the participants about the effectiveness of the teaching methods used in the simulation. In addition, 49 (92.45%) students believed that the simulation provided a variety of teaching materials and activities that were useful in promoting learning of the clinical-surgical nursing curriculum, suggesting that the simulation was successful in promoting learning and that the teaching methods used were well received by the students. Only three students (5.66%) were indifferent to the way the teacher conducted the simulation and its suitability for the learning process.

**Table 1** – Simulation 1 - Satisfaction with current learning (n=53). Araras, SP, Brazil, 2022

	AGREE	INDIFFERENT	DISAGREE
The teaching methods used in this simulation were useful and effective.	53(100%)	0(0%)	0(0%)
The simulation provided me with a variety of teaching materials and activities to promote my learning of the clinical-surgical nursing curriculum.	49(92,45%)	3(5,66%)	1(1,89%)
I liked the way my teacher taught through simulation.	52(98,11%)	1(1,88%)	0(0%)
The teaching materials used in this simulation were motivating and helped me learn.	50(94,33%)	2(3,77%)	1(1,88%)
The way my teacher taught me through simulation suited the way I learn.	50(94,33%)	3(5,66%)	0(0%)

Source: Authors' creation

Of the 53 participants, 34 (64.15%) showed confidence in mastering the content of the simulation activity presented by the teacher, while 10 (18.86%) did not agree with this statement. Of those interviewed, 47 (88.68%) believe that the simulation included the content needed to master the clinical-surgical nursing curriculum and that it is developing the skills and knowledge needed to perform procedures in a clinical environment. The students took responsibility for their own learning during the simulation activity, and believe they know how to seek help when necessary during the activity.

In general, they took responsibility for their own learning and were confident in their acquired knowledge and skills, as shown in the table below. Among the students, 40 (75.47%) agreed that it is the teacher's responsibility to tell them what they need to learn about the topic developed in the simulation during the lesson, while a minority of 8 students disagreed (15.09%) and another was indifferent (9.43%).

The data presented below refers to the second realistic simulation carried out with the students. As observed in the first simulation, the students unanimously agreed that the

**Table 2** – Simulation 1 - Self-confidence in learning (n=53). Araras, SP, Brazil, 2022

	AGREE	INDIFFERENT	DISAGREE
I'm confident that I've mastered the content of the simulation activity my teacher has given me.	34(64,15%)	9(16,98%)	10(18,86%)
I am confident that this simulation included the content necessary for mastering the clinical-surgical nursing curriculum.	47(88,68%)	2(3,77%)	4(7,55%)
I am confident that I am developing skills and gaining the necessary knowledge from this simulation to perform the necessary procedures in a clinical environment.	47(88,68%)	1(1,32%)	0(0%)
It's my responsibility as a student to learn what I need to know through the simulation activity.	52(98,11%)	0(0%)	1(1,88%)
I know how to get help when I don't understand the concepts covered in the simulation.	49(92,45%)	4(7,55%)	0(0%)
I know how to use simulation activities to learn skills.	51(96,22%)	2(3,77%)	0(0%)
It's the teacher's responsibility to tell me what I need to learn about the topic developed in the simulation during the lesson.	40(75,47%)	8(15,09%)	5(9,43%)

Source: Authors' creation

methods used in the simulation were useful and effective and that they provided a variety of teaching materials and activities to promote their learning. Unlike the first simulation, only one student (2.08%) was indifferent to the motivation and use of the teaching materials provided by the teacher.

Se tratando da autoconfiança na aprendizagem, houve uma diminuição com relação à autoconfiança na aprendizagem, houve uma diminuição no número de estudantes que discordaram da confiança e maestria do conteúdo da atividade. Na segunda simulação, todos os 48 participantes (100%) disseram que estavam confiantes de que a simulação incluía o conteúdo necessa-

ry to master the clinical-surgical nursing curriculum. Two students (4.17%) interviewed were indifferent about getting help when they didn't understand the concepts used in the simulation, and the same number were indifferent about using simulation activities to learn skills.

## DISCUSSION

In this study, even though most of the students had no previous training in the health area, they all showed a significant increase

**Table 3 - Simulation 2 - Satisfaction with current learning (n=48). Araras, SP, Brazil, 2022**

	AGREE	INDIFFERENT	DISAGREE
The teaching methods used in this simulation were useful and effective.	48(100%)	0(0%)	0(0%)
The simulation provided me with a variety of teaching materials and activities to promote my learning of the clinical-surgical nursing curriculum.	48(100%)	0(0%)	0(0%)
I liked the way my teacher taught through simulation.	48(100%)	0(0%)	0(0%)
The teaching materials used in this simulation were motivating and helped me learn.	47(97,92%)	1(2,08%)	0(0%)
The way my teacher taught me through simulation suited the way I learn.	48(100%)	0(0%)	0(0%)

Source: Authors' creation

**Table 4 - Simulation 2 - Self-confidence in learning (n=48), Araras, SP, Brazil, 2022**

	AGREE	INDIFFERENT	DISAGREE
I'm confident that I've mastered the content of the simulation activity my teacher has given me.	41(85,42%)	2(4,16%)	5(10,42%)
I am confident that this simulation included the content necessary for mastering the clinical-surgical nursing curriculum.	48(100%)	0(0%)	0(0%)
I am confident that I am developing skills and gaining the necessary knowledge from this simulation to perform the necessary procedures in a clinical environment.	47(88,68%)	1(11,32%)	0(0%)
It's my responsibility as a student to learn what I need to know through the simulation activity.	48(100%)	0(0%)	0(00%)
I know how to get help when I don't understand the concepts covered in the simulation.	46(95,83%)	2(4,17%)	0(0%)
I know how to use simulation activities to learn skills.	46(95,83%)	2(4,17%)	0(0%)
It's the teacher's responsibility to tell me what I need to learn about the topic developed in the simulation during the lesson.	40(83,33%)	3(6,25%)	5(10,42%)

Source: Authors' creation

in their theoretical knowledge after the lectures and the realistic simulation. It can be inferred that the realistic simulation teaching method is effective in terms of its interdisciplinary approach to increasing knowledge. This method encourages active and reflective student participation, giving them the opportunity to assimilate all the knowledge in a clinical situation and assume a professional stance, in line with the findings of Araújo and Quilici,<sup>8</sup> who state that simulations are important tools for creating the integrality that is so necessary in patient care.

The analysis of errors took place at two moments (considering that the study would not be of value to the students just for quantitative analysis), before the simulation, observing previous or basic knowledge of the subject and after the simulation and discussion among the students. There was a statistically significant difference between the scores obtained in the two questionnaires, showing an increasing average score between them and only in one isolated case did the percentage of correct answers drop from 73.5% to 69.8% corresponding to the first scenario.

The debriefing held after the simulation allows for a review of an experience in which participants explore, analyze their action and thought processes, emotional state and other information that can improve their performance in real situations, and can also be titled as an enhancer of emotional resistance to pressure situations and quick thinking when they go on to work as trained health professionals.<sup>9</sup>

Simulations can provide stressful situations that require quick thinking and appropriate interventions.<sup>(10)</sup> During the debriefing, the students reported enjoying taking part in the simulations, describing them as a real experience, which may justify the fact that they also reported feelings such as fear, insecurity and a sense of powerlessness, even though their interventions were extremely important. At this point, it was important to report and demonstrate that small attitudes make great nurses, even if they are not invasive, such as raising the head of the bed or protecting the patient with personal safety equipment.<sup>8</sup>

Self-confidence is considered an indicator of proactivity to intervene in emergency situations. Professionals must be confident that they are capable of acting appropriately, otherwise this can lead to a greater number of anxiety attacks and higher error rates. (11) 88.68% of the participants in the survey believe that they are developing skills and gaining practical and theoretical knowledge from the simulation, directly impacting on safer nursing care, preventing patients from being placed in risky situations due to the inexperience of the team,<sup>12</sup> this methodology provides students with the development of skills and gains in cognitive and psychomotor competencies, adding dexterity, clinical thinking and mental ability, making care more assertive.<sup>13</sup>

Simulation cannot take place in isolation. It requires prior knowledge on the part of the students, integrating theory and practice, including, for example, the use of didactic materials. This is in line with 94.33% of the students who believe that these materials were motivating and helped in the learning process and that, through the active methodology and the clinical situation exposed, they were able to retain the knowledge acquired in a practical way.<sup>4,15</sup>

Recognizing the students' possible satisfaction and dissatisfaction can help establish strategies aimed at improving learning. One inference that can be made from the results is that the students were more satisfied than self-confident with the learning they received during the simulation activity.

## FINAL CONSIDERATIONS

O preparo de enfermeiros para o mercado de trabalho demanda. The preparation of nurses for the job market demands quality teaching and learning, with the aim of fostering the development of competencies and skills that cover the areas of care, management, teaching and research. Therefore, the importance and impact of using different teaching methods is clear, in order to build up knowledge and train students in the situations they will encounter in professional practice. Analysis of the results showed that the combination of traditional methodologies in theoretical and expository classes and active methodology through realistic simulation provided students with increased knowledge, self-confidence and clinical reasoning, resulting in a combination of theoretical and practical knowledge, contributing to the training of qualified professionals who work towards patient safety and individual and holistic care.

It is suggested that future research be carried out with another audience, for example, practicing health professionals or non-health professionals, for example a specific company that has needed or witnessed an emergency situation that could be resolved more quickly, taking into account permanent in-service education. The simulated scenarios could be carried out during free time, with the aim of giving them more knowledge about the subject, as well as standardizing the conduct carried out.

The limitation of this study was the students' adherence to answering the questionnaire before and after the simulation, some of whom did not have access to the internet at the time or were without a cell phone, there was a proposal to answer remotely at home for those who could not access it, but the rate of non-participation was low, but it was present.

It is hoped that this study will help to expand theoretical and practical knowledge in a safe environment to contribute to professional training, highlighting new teaching methodologies that will have a positive impact on the practice of future nurses.

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