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ORIGINAL ARTICLE

SELF-CONFIDENCE OF NURSING STUDENTS IN THE MANAGEMENT OF SEPSIS: REFLEXES OF TELESIMULATION[1]

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ABSTRACT

Objective: To verify the self-confidence of nursing students in the identification and management of the individual with sepsis from the use of telesimulation. **Method:** Intervention study, conducted with nursing students who were attending/attended the discipline of care for critical patients of a public institution located in the Brazilian Midwest. Data collection took place in April 2021, in two stages, one before and the other after tele-broadcasting, through questionnaires on the perception of self-confidence of academics. The data were submitted to descriptive analysis. **Result:** 20 academics participated. Before telesimulation, the "not confident" answer in the four questions was noted by most academics; after the intervention, the "confident" and "very confident" answers prevailed. The reports pointed to the knowledge about the signs and initial management of the patient with sepsis, however, the care was hampered by insecurity, nervousness and difficulty in controlling emotions. **Conclusion:** Telesimulation contributed to the self-confidence of nursing students.

Keywords: Nursing. Sepsis. Critical care. Clinical competence. Nursing education.

INTRODUCTION

Sepsis can be understood as an organic dysfunction that can compromise secondary life to the host's unregulated response to an infection, which is the third and most current definition[1]. The new nomenclatures used regarding the levels of this dysfunction are: infection without dysfunction, sepsis and septic shock, making the term severe sepsis obsolete. Studies conducted in Brazil show the severity of sepsis. In 2012, 105 patients were admitted to an Intensive Care Unit (ICU) and diagnosed with severe sepsis or septic shock, and of these, 75.2% died, constituting a high lethality rate[2]. During the years 2008 to 2016, there were 100,797,269 hospitalizations for sepsis registered in DATASUS, where the mortality rate ranged from 1.10% to 1.46% between 2006 and 2015, respectively, and the average amount to be spent per hospitalization due to sepsis was 3,669.75 BRL in 2016[3].

Also in 2016, an ICU in Santa Catarina had 99 patients diagnosed with sepsis, in which 37.4% evolved to death and the average length of hospitalization was 20 days[4]. Another study[5] pointed out that, in a period of six months, 117 patients who were admitted with diagnosis of sepsis in the general ICU of a high complexity hospital and found that almost half (49.57%) patients evolved to death at the end of 90 days of hospitalization because of the disease. From 2015 to 2018, among 1188 inpatients in an ICU in the State of Paraná, 36.4% (n=432) presented sepsis and, of this total of patients, 54.1% (n=233) evolved to death[6].

Given the magnitude of the clinical and economic consequences of sepsis, early

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identification of signs of organ dysfunction is essential to act in the appropriate time with technical-scientific ability and clinical reasoning to thus reduce and/ or avoid these losses. In this sense, professionals with greater contact with the critical patient need permanent education, especially nursing.

Regarding the knowledge about sepsis, a study that aimed to identify the knowledge of nurses about sepsis and septic shock in a school hospital that performed care for adult patients in inpatient units, reports that of 47 nurses, 80.8% remember having studied sepsis at graduation, but 40.4% reported difficulties in early identification and care and 46.8% did not feel capable or prepared to care for these patients[7].

Faced with a scenario of limited knowledge among professionals who work in the services, the role of graduation in the offer of theoretical-practical foundation with a focus on improving quality in patient care is highlighted. Undergraduate students feel more self-confident and satisfied when they are inserted into learning using traditional methods and content simulation[8]. Practical assistance and theory can help learning and preparation to be able to solve with less difficulty the situations that will find in professional life, and in complex pathophysiology, such as sepsis, it is important that nursing students deepen the subject.

The coronavirus pandemic interrupted the coexistence of people in the same environment in order to reduce and prevent the transmission of the disease. Several activities were suspended and, among them, face-to-face classes, but through the internet, the distance decreased slightly and the studies continued. Everyone had to reinvent themselves and the classrooms were replaced by virtual space in their own residences, which culminated in the need for creativity of students and teachers, including the use of active methodologies such as telesimulation as a way to develop clinical reasoning.

Telesimulation is an offshoot of clinical simulation that seeks to remotely reproduce the particularities of a given context, to achieve a better understanding of real conditions, performed remotely, synchronously, through video call. Among others, it aims to facilitate contact between instructors and participants in situations of need for social distancing, difficult access for economic reasons, as well as, geographically distant, for the improvement of knowledge, increased confidence and satisfaction with learning in order to improve the skills and abilities of health professionals[9]. Thus, this study aims to verify the self-confidence of nursing students in the identification and management of the individual with sepsis from the use of telesimulation.

METHOD

This was a study of intervention, with qualitative and quantitative approach and descriptive character. It was conducted with 20 nursing students from a public educational institution located in the Brazilian Midwest. The inclusion criteria were the academics who had already completed or were attending the nursing discipline in the care of the critical patient, that is, only academics who had already had theoretical and practical classes on the subject. Academics who did not make this compulsory discipline were excluded, because this theme is part of the syllabus of that discipline.

Data collection took place in April 2021, in two stages, both online (Figure 1). The data collection occurred during the telesimulation, which was carried out through the Google Meet platform, which allowed the meetings to be recorded. The meetings were conducted/ mediated by a professor in the area and two academics who observed and assisted in the notes of the actions performed by the students. The academics were divided into four groups with five students and telesimulation ranged from 1h10min to 1h30min. Initially, academics were invited to answer a questionnaire on the perception of self-confidence in the care of patients with sepsis, which was on a Likert scale of the Google Forms platform and with the answers divided into four options: “not confident”, “confident”, “very confident” and “extremely confident”.

After completing the initial questionnaire, telesimulation was performed. It should be noted that, for the execution of the intervention, a constructed and validated scenario was used, respecting the steps and questions elaborated by the authors to conduct the discussion[10]. Thus, the conduction followed the steps of prebriefing, telesimulation and debriefing (Figure 1).

In the prebriefing, information on learning

objectives, the role of each graduate, steps to follow, explanations of the scenario and guidance on further discussions were provided. At that moment, it was agreed that the discussions that would follow would not be evaluative so that they would be at ease to express themselves, ensuring a dialogical environment with the students. When presenting the clinical case on the slide to the students, they were encouraged to discuss in group and, after consensus, the actions that should be performed were verbalized to the research team, which confirmed the procedure through repetition.

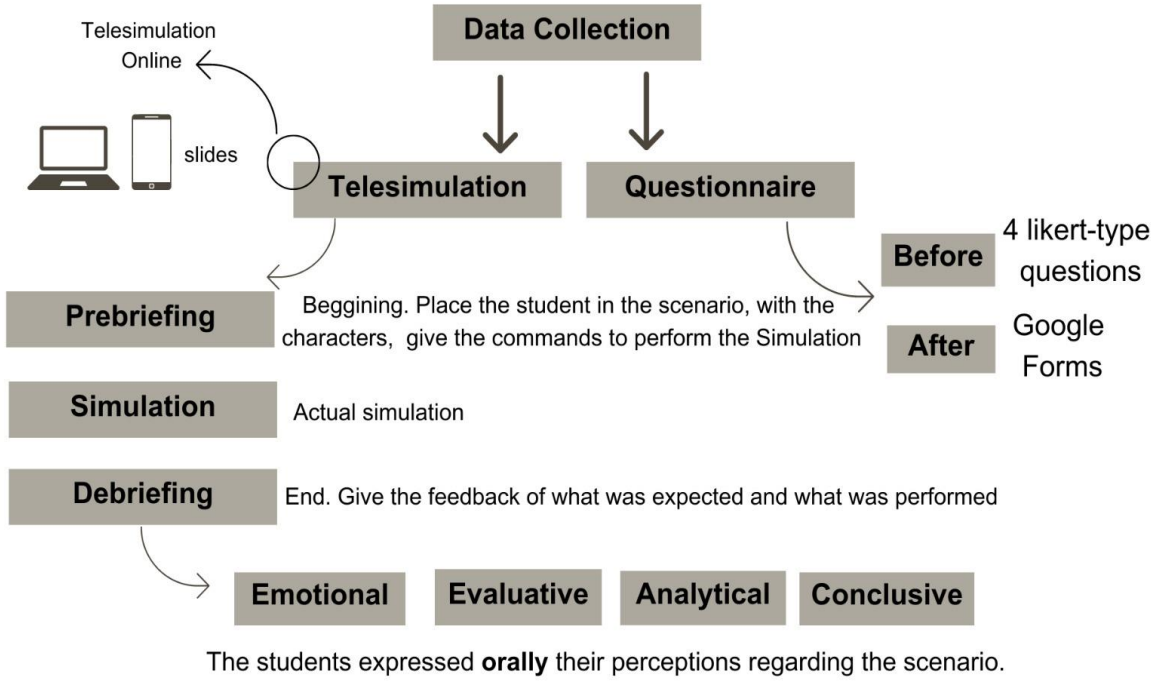

Figura1. Fluxograma da condução do estudo.

The end of patient care was signaled by the students themselves and, after, debriefing was initiated through the presentation of the feedback of the expected actions. After confronting the information, the students were invited to express their perceptions about the scenario orally, addressing the phases: emotional, evaluative, analytical and conclusive, according to what was recommended in the validation of the scenario[10]. Finally, the self-assurance perception questionnaire to perform the care to the individual with sepsis was reapplied to identify possible changes in the responses.

The data of the self-confidence questionnaire were transcribed from the result itself granted by Google Forms and submitted to descriptive analysis through the presentation of frequencies and percentages that can be observed in tables 1 and 2 and the reports of the academics were transcribed and presented by means of table synthesis, Table 1.

The students were identified by the order of the presentation of the groups of telesimulation with the letter G of Group, followed by numeral that indicated the order of telesimulations (G1, G2, G3 and G4). In addition, they were identified within each group by the alphabetic letters from A to Z, in the order that each one was reporting, if the student returned to speaking, the letter first identified by him/her remained the same.

All ethical precepts involving research with human beings were respected, according to Resolution n. 466 of December 12, 2012, and the proposal of this investigation was approved by the Research Ethics Committee under opinion n. 4,416,693 of November 24, 2020. The Informed Consent Form was online and included in the first question of the two Google Forms questionnaires, and the authorization to proceed with the recording of the telesimulation was requested and they needed to indicate their authorization.

RESULTS

Twenty nursing students participated, with

a mean age of 29 years (SD± 8), minimum age 22 years and maximum age 47 years. Other information is presented in Table 1.

Table 1. Characterization of nursing students. Midwest, Brazil, 2021.

Sex	
Masculine	
Feminine	18 (90%)
Regarding the discipline nursing to the critical patient	
Already atteded	
Were attending	13 (65%)
Semester of participants	
8th semester	
9th semestre	5 (25%)
10th semester	7 (35%)

Fonte: dados da pesquisa.

The perception of self-confidence in caring for a patient with sepsis is shown in Table 2.

Table 2. Self-confidence of nursing students in the care of patients with sepsis before and after telesimulation. Midwest, Brazil, 2021

How confident are you of your ability to:	**BEFORE TELESIMULATION (n:20)**				**AFTER TELESIMULATION**			
	Not confident at all	Confident	Very confident	Extremely confidente	Not confident at all	Confident	Very confident	Extremely confidente
Recognize signs and symptoms of a patient with sepsis?	7 (35%)	12 (60%)	1 (5%)	0	1 (5%)	10 (50%)	8 (40%)	1 (5%)
Accurately assess a patient with sepsis?	10 (50%)	9 (45%)	1 (5%)	0	1 (5%)	12 (60%)	7 (35%)	0
Perform interventions appropriately in patients with sepsis?	11 (55%)	8 (40%)	1 (5%)	0	1 (5%)	13 (65%)	6 (30%)	0
How confident are you of your ability to:	11 (55%)	8 (40%)	1 (5%)	0	1 (5%)	13 (65%)	6 (30%)	0

Source: research data.

The perceptions presented from the telesimulation debriefing are summarized in Chart 1.

The four phases of debriefing explain different feelings experienced by nursing students, as well as nursing care to the individual with sepsis from the use of telesimulation.

Quadro 1. Síntese das fases do *debriefing* a partir de relatos de estudantes de enfermagem. Centro-Oeste, Brasil, 2021

Telesimulation Phase	Participants' report
Emotional "How did you feel assisting this patient?"	*I believe that simulation makes us live, right, in fact we can put this situation in our head and experience the situation. (G1. Student A)* *I think insecurity gets in the way. Because we knew what we really had to do, what the interventions were and yet we contradicted each other, we self-sabotaged [...] But I really enjoyed seeing this patient [...] I think it was a very good experience. (G2. Student C)* *Insecurities have been part of our lives for a long time and I think activities like these make us notice and as we are not having much practice, We get this feeling of nervousness I will kill the patient as if the responsibility of the patient was one hundred percent ours and our nervousness gets in the way of having contributed to the well-being of the patient, because we knew, I knew the protocol of the first hour, It's in my head but I lost myself many times, I was thinking my reasoning he was lost. I started a path of reasoning, but then I got lost, because of nervousness. (G2. Student C)* *I knew what I had to do, so we know what to do, but despair seems to make us dumb. We forget things, we do not know if it is really that there is doubt, as much as we know [...]We just have to*

	keep calm. (G4. Student B) *And I thought it was cool, I thought it was cool [...]Only I think there should be more times there for us to get the hang... I think so, right! And now this very theoretical business...theoretical is kind of weird. But I think that way it got a little closer to practice. It was cool! (G4. Student D)*
Evaluative "What were the positive actions that you performed?"	*I believe that we managed to stabilize the signals, stabilize right, moving towards an improvement. (G1)* *I think it is already a very important step for us to know how to identify that he has sepsis, that he is going into shock. I think it was positive. We have known, ask for the exams. (G2. Student C)* *[...] that we came in a good way, even, like, in question of the examinations, the question of vital signs, evaluate and identify a sepsis, identify how much you are referring to a shock, I think the clinical reasoning was good. (G2. Student D)* *I think the monitoring of signs, tests and antibiotic, antibiotics. (G3. Student C)*
Analytical "What would you do if you had other opportunity?"	*I think knowing how to control emotions [...]. In the emergency room, mainly, I think that, instead of calming down the patient and helping him, we were going crazy. So, I think we know how to organize ourselves. (G2. Student C)* *I would pay attention to the neurological part. That I passed over. (G3. Student A)* *I focused a lot on the patient's fever and pain, and I saw that this was not a priority. (G3. Student C)* *I think we would act faster, right! Because we took a long time with the indecision. (G4. Student B)*
Conclusive "What learning do you take from this experience to your clinical experience?"	*I believe that the simulation leaves this...it's resourcefulness in the process. (G1. Student B)* *Knowing how to control your emotions so that you can open the drawers at the right time and assist the patient, I think it's also important. Working on emotional control is essential for an hour in the emergency room. (G2. Student D)* *Working on our security, because I think that it interferes a lot, we had knowledge, even so we got lost, so I think that, we are more sure of ourselves. (G2. Student C)* *Whenever we receive the patient, we have to, it is essential that we attend to him following the order, according to the protocol. And we take today's learning too. (G3. Student B)* *Nurses are always learning, right? Learning new knowledge. And I think that's where I'm going to take it. (G3. Student A)* *I think so, the question of organization, right, following the right protocol and having more confidence, I think in what we say, because sometimes we even know. (G4. Student B)*

DISCUSSION

The results on the perception of self-confidence show that the students left the "*not confident at all*" level before telesimulation to the "*confident*" and "*very confident*" levels afterwards. In this direction, it can be said that it was positive to use teleassistance as a teaching method and its innovative and urgent use as a pedagogical tool in the pandemic scenario stands out. It is known that face-to-face simulations increase the self-confidence of academics, as identified in one study[11] in order to verify the efficacy of simulation in the self-confidence of nursing students for extra-hospital cardiopulmonary resuscitation and other[12] this study aimed to evaluate the effectiveness of a High Fidelity Simulation training program in the performance and satisfaction of nurses in the transportation of critically ill patients. However, few studies describe the influence of telesimulation as a strategy for translating knowledge.

In order to report the strategies used by teachers of undergraduate nursing courses in Rio Grande do Sul and Santa Catarina, and the challenges faced by remote education during the pandemic by the new coronavirus, study[13] pointed out that, because of this new context, Nursing courses need to seek problematizing pedagogical approaches, propelling dialogue, sensitivity and creativity to leave more

enjoyable study. In this perspective, the use of telesimulation is presented as a strategy that can favor the development of skills throughout nursing graduation.

In the responses to the phases of debriefing, especially the emotional and conclusive items, the academics reported insecurity and nervousness when attending the patient of the clinical case. Generally, new challenges generate a feeling of "threat" and the body reacts to this with hormones that generate a response to stress[14]. A health professional also felt insecure because he was experiencing experiences of a multidisciplinary team in pre-hospital care in advanced life support to polytrauma victims and other professionals had feelings of stress and anxiety[15]. Moreover, anxiety can be justified by the fact that sometimes participants may be feeling evaluated even if warned that it did not consist of evaluation, as was reported by the students interviewed in another investigation[16] who stated that, when faced with a proof, be it theoretical and/ or practical, throughout the course, they were quite anxious.

Team unity and mutual help can be a strategy to maintain effectiveness and performance during times of crisis. In this sense, a study[17] with the objective of analyzing the experiences of nurses at the frontline of the fight against the covid-19 pandemic regarding the performance of emotional work, aiming at their characterization and identification of support strategies, obtained that emotional work in nursing was fundamental for effective coping with challenges, to deal with disturbing emotions and minimize negative emotional responses, as well as to transform the experience into learning. Feelings, whether positive or negative, will arise at all times, which makes learning emotional intelligence, self-control and resilience one of the challenges of training health and nursing professionals. Therefore, the telesimulation, because it was carried out in small groups, helped in the communication and development of academics, and may have strengthened the spirit of teamwork.

When asked about the positive points they made, in the evaluation phase of telesimulation, some academics reported that it was to recognize the signs of sepsis, to monitor the patient, among others. Some studies report that nurses have difficulties in early identification based on clinical suspicion of sepsis[7] and knowledge that falls short of what is necessary for early identification and management of sepsis[18]. However, other studies show that there are nurses who have presented an understanding of the signs and symptoms of sepsis[19], which reinforces the importance of knowledge of this dysfunction in graduation. In a survey[20] with 41 participating nurses, 39 received this content at graduation and classified learning as good (n=16); when they were admitted to the health service, 30 nurses did not have training on the subject.

In addition to the knowledge of the signs of sepsis, the means of preventing this dysfunction in health settings become paramount. In a study[21] carried out in southern Brazil, the severity of the development of sepsis and its consequence on the health of the child was evidenced. Thus, it is necessary to make efforts based on educational actions of nurses and other members of the health team, addressing the prevention of sepsis, which is fundamental to improve the quality of health care, as well as to reduce hospitalization costs, as it avoids worse outcomes for the patient.

In the responses of the analytical and conclusive phases, students diverged in their reports, citing the need to control emotions, choose priorities, have agility and use protocols. In addition to what has already been mentioned about emotions, it is noticed that, due to lack of knowledge, there is greater difficulty in the management of the patient. One study pointed out that the implementation of the protocol, the use of checklist and the support of the sepsis protocol manager showed a positive impact on treatment quality indicators and that by this attitude, the chances of the patient receiving the package of measurements in one hour increased by 14 times[22]. In addition, a literature review[23] showed in 16 studies a reduction in sepsis mortality after the implementation of protocols, since its use directs actions and optimizes time in care. However, it should be noted that, even if nurses recognize sepsis and follow the protocols, in less collaborative environments, they may be in a cast to manage it in an agile manner because they depend on medical prescription, pharmacy drugs and laboratory tests[24].

CONCLUSION

Telesimulation reflected an increase in

students' self-confidence in the identification and management of sepsis. This methodological tool can help the academic to approach the care practice and develop clinical reasoning for problem solving. It should be noted that telesimulation can be an ally to theoretical activities in the classroom and that face-to-face activity in clinical simulation is irreplaceable for the development of the academic, especially in the health area. In this sense, among the limitations of the study, we highlight the small sample of a single course and descriptive analysis, which suggests the execution of new studies with a multiprofessional approach and face-to-face, using high fidelity scenario.

AUTOCONFIANÇA DE ACADÊMICOS DE ENFERMAGEM NO MANEJO DA SEPSE: REFLEXOS DA TELESSIMULAÇÃO

RESUMO

Objetivo: verificar a autoconfiança dos acadêmicos de enfermagem na identificação e manejo do indivíduo com sepse a partir do uso da telessimulação. **Método:** Estudo de intervenção, realizado com acadêmicos de enfermagem que cursavam/cursaram a disciplina de cuidado ao paciente crítico de uma instituição pública localizada no Centro-Oeste brasileiro. A coleta de dados aconteceu em abril de 2021, em duas etapas, sendo uma antes e outra depois da telessimulação, por meio de questionários sobre a percepção da autoconfiança dos acadêmicos. Os dados foram submetidos à análise descritiva. **Resultado:** Participaram 20 acadêmicos. Antes da telessimulação, a resposta "nada confiante" nas quatro perguntas foi assinalada pela maioria dos acadêmicos; depois da intervenção, as respostas "confiante" e "muito confiante" prevaleceram. Os relatos apontaram para o conhecimento acerca dos sinais e manejo inicial do paciente com sepse, entretanto, o atendimento foi tolhido pela insegurança, nervosismo e dificuldade no controle das emoções. **Conclusão:** A telessimulação contribuiu para a autoconfiança dos acadêmicos de enfermagem.

Palavras-chave: Enfermagem. Sepse. Cuidados críticos. Competência clínica. Educação em enfermagem.

AUTOCONFIANZA DE DISCENTES DE ENFERMERÍA EN EL MANEJO DE LA SEPSIS: REFLEJOS DE LA TELESIMULACIÓN

RESUMEN

Objetivo: verificar la autoconfianza de los discentes de enfermería en la identificación y el manejo del individuo con sepsis a partir del uso de la telesimulación. **Método**: estudio de intervención, realizado con discentes de enfermería que cursaban/cursaron la asignatura de cuidado al paciente crítico de una institución pública ubicada en el Centro-Oeste brasileño. La recolección de datos tuvo lugar en abril de 2021, en dos etapas, siendo una antes y otra después de la telesimulación, por medio de cuestionarios sobre la percepción de la autoconfianza de los discentes. Los datos fueron sometidos al análisis descriptivo. **Resultado**: participaron 20 discentes. Antes de la telesimulación, la respuesta "nada confiado" en las cuatro preguntas fue señalada por la mayoría de los académicos; después de la intervención, las respuestas "confiado" y "muy confiado" prevalecieron. Los relatos señalaron para el conocimiento respecto a las señales y el manejo inicial del paciente con sepsis, sin embargo, la atención fue obstaculizada por la inseguridad, el nerviosismo y la dificultad en el control de las emociones. **Conclusión**: la telesimulación contribuyó para la autoconfianza de los discentes de enfermería.

Palabras clave: Enfermería. Sepsis. Cuidados críticos. Competencia clínica. Educación en enfermería.

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