ORIGINAL ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

IN SITU SIMULATION FOR BASIC LIFE SUPPORT TRAINING IN THE PRIMARY CARE CONTEXT: A pilot study

SIMULAÇÃO IN SITU PARA O TREINAMENTO DE SUPORTE BÁSICO DE VIDA NO CONTEXTO DA ATENÇÃO PRIMÁRIA: estudo piloto

SIMULACIÓN IN SITU PARA EL ENTRENAMIENTO EN SOPORTE VITAL BÁSICO EN EL CONTEXTO DE LA ATENCIÓN PRIMARIA: estudio piloto

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ABSTRACT
Objectives: to identify self-confidence scores for interventions in emergencies, to know the health professionals' perception about in situ simulation as a teaching and learning strategy in topics of urgency and emergency in the Primary Care context, and to train health professionals in Basic Life Support (BLS). Method: this is an action-research study carried out in a Basic Health Unit in the inland of northeastern Brazil. For the intervention, an expository class, skills training, and an in situ simulation session were planned and executed, in addition to complementary clinical simulation sessions. Before and after the intervention, with the aim of measuring self-confidence for interventions in emergencies, a Portuguese version of the Self-confidence Scale was used. Simple descriptive statistics were used for the sociodemographic characterization and analysis of pre- and post-test self-confidence. The qualitative analysis was carried out through the Collective Subject Discourse. Results: most of the participants are female (75.0%), with a mean age of 41 years old, community health agents (25.0%), with a mean professional training time of 7.3 years, and 8 years of professional performance. The majority had no training in BLS (66.7%) or in urgency and emergency (66.7%). Conclusion: regarding self-confidence to act in emergencies, it was possible to identify that, in the post-test, the participants improved the response pattern, attributing higher self-confidence scores to act in emergencies. The contributions of the in situ simulation method for BLS training were also identified, as well as weaknesses and strengths.
Keywords: In situ Simulation; Urgency and Emergency; Health Education.

RESUMEN
Objetivo: identificar puntajes de autoconfianza para intervenciones en emergencias, conocer la percepción de los profesionales de la salud sobre la simulación *in situ* como estrategia de enseñanza y aprendizaje en temas de urgencia y emergencia en el contexto de Atención Primaria y capacitarlos en Soporte Vital Básico (SVB). Método: se trata de una investigación-acción realizada en una Unidad Básica de Salud del interior del nordeste de Brasil. Para la intervención se planificaron y ejecutaron una clase expositiva, un entrenamiento de habilidades y una sesión de simulación *in situ*. Y, de forma complementaria, sesiones de simulación clínica. Antes y después de la intervención, con el objetivo de medir la autoconfianza para intervenciones en emergencias, se utilizó una versión en portugués de la Escala de Autoconfianza. Para la caracterización sociodemográfica y el análisis de la autoconfianza pre y post intervención, se utilizó estadística descriptiva simple. El análisis cualitativo se realizó a través del Discurso del Sujeto Colectivo. Resultados: la mayoría de los participantes es del sexo femenino (75,0%), con edad media de 41 años, agente comunitario de salud (25,0%), con tiempo medio de formación profesional de 7,3 años y antigüedad en el ejercicio de la profesión de 8 años. La mayoría no tenía formación en SVB (66,7%) y en urgencias y emergencias (66,7%). Conclusión: en cuanto a la autoconfianza para actuar en emergencias, fue posible identificar que los participantes, en el postest, mejoraron el patrón de respuesta, asignaron mayores puntajes de autoconfianza a actuar en emergencias. También se identificaron las contribuciones del método de simulación *in situ* para el entrenamiento en SVB, debilidades y fortalezas.
Palabras clave: Simulación *in Situ*; Urgencia y Emergencia; Educación para la Salud.

RESUMO
Objetivo: identificar seus escores de autoconfiança (pré e pós) para intervenções em emergências, conhecer as percepções de profissionais de saúde sobre a simulação *in situ* enquanto estratégia de ensino e aprendizagem em tópicos de urgência e emergência no contexto da Atenção Primária e capacitá-los em Suporte Básico de Vida (SBV). Método: trata-se de uma pesquisa-ação realizada em uma Unidade Básica de Saúde do interior do nordeste brasileiro. Para a intervenção, foram planejadas e executadas aula expositiva, treino de habilidades, sessão de simulação in situ. E, de forma complementar, sessões de simulação clínica. Antes e após a intervenção, com o objetivo de aferir a autoconfiança para intervenções em emergências, foi utilizado uma versão portuguesa da *Self-confidence Scale*. Para a caracterização sociodemográfica e análise da autoconfiança pré e pós, foi utilizada a estatística descritiva simples. A análise qualitativa deu-se por meio do Discurso do Sujeito Coletivo. Resultados: a maioria dos participantes são do sexo feminino (75,0%), com idade média de 41 anos, agentes comunitários de saúde (25,0%), com tempo de formação profissional médio de 7,3 anos, e tempo de atuação profissional de 8 anos. A maioria não possuía formação em SBV (66,7%) e em urgência e emergência (66,7%). Conclusão: em relação a autoconfiança para atuação em emergências, foi possível identificar que os participantes, no pós-teste, melhoraram o padrão de resposta, atribuindo maiores scores de autoconfiança para atuação em emergência. Foram identificadas também as contribuições do método simulação *in situ* para a formação em SBV, as fragilidades e as potencialidades.
Palavras-chave: Simulação *in Situ*; Urgência e Emergência; Ensino em Saúde.

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INTRODUCTION

Primary Health Care (PHC) is understood as the set of individual, family and collective health actions that involve promotion, prevention, protection, diagnosis, treatment, rehabilitation, harm reduction, palliative care and health surveillance, providing comprehensive care through a multiprofessional team and directing care to a population in a defined territory[1]. In Brazil, the terms Basic Health Care and Primary Health Care are considered synonymous and will be used in this paper without any conceptual prejudice.

In Brazil, the National Policy for Emergency Care (*Política Nacional de Atenção às Urgências*, PNAU) recommends that urgency and emergency care should be provided at all levels of the Unified Health System (*Sistema Único de Saúde*, SUS). According to Ordinance 354/2014, an emergency corresponds to the medical verification of conditions that harm health and which imply intense suffering or imminent risk of death, therefore requiring immediate medical treatment, whereas urgency is the unforeseen occurrence of a health problem with or without potential risk to life, whose bearer needs immediate medical assistance[2].

BHC aims at expanding access, strengthening the bond, accountability and the first urgency and emergency care in an appropriate environment, until the patients' transfer/referral to other points of care, when necessary, through the implementation of welcoming with an assessment of risks and vulnerabilities. In addition, BHC is an integral part of the Emergency Care Network (*Rede de Atenção às Urgências*, RAU). It should be structured to provide resolute care in urgent cases considered of low complexity and that do not require high technology, offering a first service to the users, stabilizing the most serious conditions and referring them to other care levels, when necessary[2].

However, professionals working in PHC have difficulty recognizing an urgency and/or emergency and understanding the legal provisions that underlie the Urgency and Emergency Care Network (*Rede de Atenção às Urgências e Emergência*, RUE), the PNAB and BHC as an appropriate level for emergency care assistance. Therefore, they refer clinical situations that might be solved at this care level to other complexity levels[3].

It is known that, in Brazil, PHC has a large structural deficit in urgency and emergency care. According to some researchers[4], in a study carried out with thirteen BHUs in the state of São Paulo, it was possible to identify that the structure of such unit was quite precarious for Basic Life Support (BLS) care.

Basic Life Support (BLS), carried out in an out-of-hospital environment, covers actions up to defibrillation, while post CPA care is attributed to Advanced Life Support[5]. The approach to Cardiopulmonary Arrest (CPA) includes rapid arrest detection, effective external chest compressions, early defibrillation, support after return of spontaneous circulation, and

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treatment of the underlying causes. The main therapeutic maneuver for CPA is Cardiopulmonary Resuscitation (CPR), which allows for a faster return of circulation and spontaneous breathing[6].

Therefore, it is of fundamental importance that the team working in situations involving individuals in CPA has the knowledge and skills required to provide the best prognosis for the victim[7]. CPR can be considered a challenging clinical tool, as it is used in a life or death situation, which causes stress to the professionals involved and requires synchrony, dynamism, good communication skills, leadership and harmonization in the care provided[8].

Some studies point out that health professionals and undergraduates do not have satisfactory theoretical and practical scientific knowledge in CPA/CPR. In part, lack of knowledge about this theme is a consequence of gaps in training. When present, approaches on the topic are punctual and superficial and, therefore, insufficient to provide acquisition of solid knowledge required for acting in front of a CPA victim[9-11]. To minimize the health professionals' theoretical and practical learning deficit, more and more teaching strategies that use meaningful learning, such as clinical simulation, have stood out as positive in gaining knowledge and skills among health professionals[12-13].

Clinical simulation is a teaching strategy that uses technologies to replicate scenarios that mimic the practice in a controlled and realistic environment, where learners actively participate in the teaching and learning process in order to practice exhaustively, learn, reflect and evaluate products and procedures[14]. On the other hand, *in situ* simulation corresponds to any simulation-based activity that takes place in the learners' real environment, that is, simulated clinical scenarios are developed in the work environment itself[15].

In situ simulation eases access to training and enhances the training of real teams of professionals but, above all, it provides an opportunity to reflect on how the practice that is being simulated in the participants' routine has taken place, enabling a detailed look at the management of people, resources and the organizational climate. In addition to that, simulation practice can be considered with greater fidelity and realism to the extent that the teaching and learning context is the practice context itself[16-18].

In this perspective, the study aimed at identifying their self-confidence scores (pre- and post-) for interventions in emergencies, at knowing the health professionals' perceptions about *in situ* simulation as a teaching and learning strategy on topics of urgency and emergency in the Primary Care context, and at training them in Basic Life Support (BLS).

METHODS

This paper used action-research as its method. The objectives of action-research are represented in two ways: the practical objectives and the knowledge objectives; the first ones are

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related to the action itself, and the second ones are focused on research, with the intention of raising awareness in the community to produce knowledge[19].

A BLS training course was planned for all employees of a BHU in the inland of northeastern Brazil. Nine professionals from the BHU participated in the study, which has 12 in total. Professionals from the fundamental, mid and higher levels were included. The participants who missed the training session and those who did not fill out all the research instruments were excluded.

An instrument for the participants' enrollment and socioeconomic characterization was used, consisting of open and closed questions. *Self-confidence Scale* (SCS): the Portuguese version of the *Self-confidence Scale* (SCS), called *Autoconfiança para intervenção em emergências: adaptação e validação cultural da Self-confidence Scale*. The scale consists of a list of twelve items with Likert-type answers with five possibilities: “Not at all confident”, “Little confident”, “Confident”, “Very confident” and “Extremely confident”. The different items identify the professionals' ability to: recognize signs and symptoms of alterations in the referred areas; accurately assess the patient; intervene appropriately; and evaluate the effectiveness of the implemented interventions in the respiratory, cardiac and neurological areas[20].

Qualitative evaluation of the training offered: the instrument had three assay questions about perceptions, potentialities and weaknesses of the method, namely:

1) When considering the scenarios experienced in the simulations, which were the contributions of the *in situ* simulation method for training in Basic Life Support?

2) When considering the scenarios experienced, which are the weaknesses of the *in situ* simulation method?

3) When considering the scenarios experienced in the simulations, which are the potentialities of the *in situ* simulation method?

The training was planned in a theoretical and practical way, with a workload of four hours, in the service itself and during office hours. On the day the training was offered, adjustments were made to the appointment schedule, with prior notice to the users.

After due ethical authorization, the researchers proceeded to announce the training. For the enrollments, the researchers communicated the training verbally and used the unit's bulletin board. Those interested were invited to fill out a registration form that contained questions about academic and professional background and sociodemographic data.

The training was offered in one shift. During this period, the researcher and the research team provided the following activities to the participants: lecture on BLS, skills training related to the same theme, and *in situ* simulation sessions. After these practices, for reinforcement in the environment itself, six clinical simulation scenarios were performed, where all the

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necessary resources were available. Before and after the training, the participants answered SCS[20].

After the *in situ* simulation practices, the complementary training session was carried out. Six scenarios were used for the complementary intervention. These scenarios were created and validated in a previous study (Carreiro, 2020), namely: a) Cardiopulmonary Arrest in adult patients in Basic Health Care; b) Cardiopulmonary Arrest in pregnant patients in Basic Health Care; c) Cardiopulmonary Arrest in children in Basic Health Care; d) Airway Obstruction by a Foreign Body in adult patients in Basic Health Care; e) Airway Obstruction by a Foreign Body in pregnant women in Basic Health Care; and f) Airway Obstruction by Foreign Body in children in Basic Health Care.

The scenarios were designed according to criteria that take into account the following aspects: a) the students' prior knowledge; b) learning objective; c) theoretical grounds of the activity; d) scenario preparation; e) scenario development; f) debriefing, and g) evaluation[21].

In addition to that, once the interventions had ended, the participants also evaluated the training offered by the research team. For such purpose, they were invited and described their experiences and conceptions about the *in situ* simulation method through the qualitative evaluation of the training offered.

Chart 1 details the interventions adopted, the learning objectives, the resources used, the workload, and the executing team.

Chart 1 - Activities carried out

Teaching and learning strategy	Learning objectives	Resources	Hour load	Team
Dialogued lecture	To acquire and/or improve knowledge about the subject matter proposed.	Data show	1 hour	Researcher
Skills training	Practical training of cognitive and behavioral skills and effective maneuvers for risk situations.	Low- and medium-fidelity simulators.	1 hour	Research team
In situ simulation	To perform clinical skills gained through in-service training.	Low- and medium-fidelity simulators.	1 hour	Research team
Clinical simulation	To perform clinical skills obtained through the previous	Low- and medium-fidelity simulators, ventilatory and	1 hour	Research team

	sessions, with previously validated scenarios.	cardiac support device.		

Source: The authors.

The data were tabulated and processed in SPSS, version 20.0. Simple descriptive statistics were used to analyze the sociodemographic characterization and pre- and post-test self-confidence. The qualitative data analysis was carried out through the Collective Subject Discourse (CSD).

This method is configured as a methodological conception, whose objective is to obtain common answers to the individual statements, in order to build a collective discourse with the possibility of generating the effect of collective stance in the receiver[22].

In this way, the following stages were carried out: 1) obtaining the answers through the questionnaires; 2) phase to transcribe and clarify the text of the answers, in order to reduce the speeches; 3) identifying the central ideas and extracting the key expressions from the testimonies; 4) making the categorization: identifying similar Central Ideas; and, finally, 5) elaborating a unique discourse, adding the phrases from the Central Ideas and forming the Collective Subject Discourse (CSD)[23].

After due authorization from the Municipal Health Department, the study was submitted to the Research Ethics Committee of the Federal University of Rio Grande do Norte (*Comitê de Ética em Pesquisa/Universidade Federal do Rio Grande do Norte*, CEP/UFRN) in October 2021, via *Plataforma Brasil*; and was approved under number 5,163,206 and CAAE: 54027521.7.0000.5568. A Free and Informed Consent Form was used.

RESULTS

Most of the participants are female (75.0%), with a mean age of 41 years old, minimum of 22 and maximum of 59, community health agents (25.0%), with a mean time of professional training of 7.3 years, and 8 years of professional performance. In addition to that, the majority did not have training in BLS (66.7%) or in urgency and emergency (66.7%). Table 1 presents the sociodemographic characterization of the subjects.

Table 1 - Sociodemographic characterization. Caicó, RN, Brazil, 2022. (n=12)

Variables	(%)
Age group	
22 – 32 years old	16.7
33 – 43 years old	41.7
>43 years old	41.7

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Gender	
Female	75.0
Male	25.0
Profession	
GSA	16.7
CHA	25.0
Nursing technician	16.7
Oral health technician	8.3
Nurse	8.3
Dentist	8.3
Physician	8.3
Director	8.3
Training time	
0 – 5 years	41.7
5 – 10 years	41.7
>10 years	16.7
Professional performance time	
0 – 5 years	41.7
5 – 10 years	41.7
>10 years	16.7
Training in Basic Life Support	
No	66.7
Yes	33.3
Training in Urgency and Emergency	
No	66.7
Yes	33.3
Training in Urgency and Emergency in PHC	
No	66.7
Yes	33.3

When asked about the provision of training sessions by the municipality in relation to urgency and emergency services in the Primary Care context, only one respondent (8.3%) mentioned that the municipality offered a course in the last five years.

In relation to the experience at the BHU in urgency and emergency cases, half of those surveyed (50.0%) reported having faced

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situations of this nature. However, when asked about feeling prepared to deal with urgency and emergency situations in the PHC context, only 25.0% reported such aptitude.

It is important to highlight that this initial strategy was developed based on the identification of the participants' sociodemographic profile, as it was possible to identify that more than 60% of them did not have previous training on the BLS theme.

After the lecture, the researchers and the research team demonstrated the procedures and courses of action provided for in BLS, namely: recognizing out-of-hospital cardiopulmonary arrest and calling the emergency medical service; starting immediate and high-quality cardiopulmonary resuscitation (chest compressions at a rate of 100 to 120 per minute, allowing chest recoil after each compression of at least five centimeters deep); promoting rapid defibrillation; and acting promptly to minimize neurological harms. For such purpose, low-tech simulators from the Skills and Simulation Laboratory at the Multicampi Medical Sciences School of the Federal University of Rio Grande do Norte were used (adult and pediatric simulators - RessuciAnne® and BabyAnne®). After this session, three *in situ* simulation scenarios were performed.

Three *in situ* simulation scenarios were carried out, namely: a scenario in a child younger than two years old; a scenario of a child over the age of two; and an adult scenario, all related to CPA. The objective of these scenarios was to perform initial care for victims without a pulse and without breathing, found unconscious in the BHU waiting room.

The participants were induced to perform the service in pairs. As the BHU where the intervention took place lacked the necessary equipment for this initial care, it was possible to perceive that they had difficulties handling the situations presented. The moment was important and culminated in the team's reflections on the resource limitations and the survival chances for patients with similar conditions.

When asked about the contributions of the *in situ* simulation method for training in Basic Life Support, it was possible to identify three central ideas, namely: skills development (50.0%), learning (30.0%) and association between theory and practice (20.0%). The discourses that were assembled are presented below:

> After going through the theoretical and practical class, I felt confident to act correctly in situations that require similar assistance. Through the simulation, we can really get a sense of force, pressure and maneuvers performed. I learned how to perform all the procedures. I have more confidence to execute them. Now I can be more self-confident in my services. I will have a sense of action when faced with a similar situation. I will be able to give tips on how to proceed. Now, we are able to help (CSD 1).
>
> The method helps professionals to fix knowledge. It made the course more tangible. When I started, I did not know how to react to an emergency. I am more confident to perform the maneuvers. It was very important for our learning. It contributed a lot to my training. Through the simulation, the content taught was better fixed in my memory (CSD 2).

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> Practical demonstrations contributed to learning, as theory alone would be difficult. After going through the theoretical and practical classes, I feel very confident (CSD 3).

When asked about the weaknesses of the *in situ* simulation method, it was possible to identify only one central idea, namely: there are no 100% weaknesses. Below are the discourses obtained:

> There are no weaknesses. The weakness is not in the method, but in our public health reality. We often do not have the necessary materials! (CSD 4)

When asked about the potential of the *in situ* simulation method, it was possible to identify three central ideas, namely: learning (50%), professional training (25%) and technologies (25%). The discourses that were assembled are presented below:

> It was a great learning experience. To make tangible body resistance, the force and pressure necessary for the maneuver to be effective. We were able to perform first aid. The best first aid method (CSD 5).

> "Through simulation, it is easier to assimilate a real situation. It stimulates professionals to undergo training. To qualify in the workplace. Bringing several possible situations to our reality (CSD 6).

> Everything was demonstrated with practice and proper devices and it eased learning. I really enjoyed the service with the simulators (CSD 7).

In relation to self-confidence to act in emergencies, Table 2 presents the synthesis of the pre- and post- intervention results. It was possible to identify that, before the intervention, all participants chose answers 1 and 2, respectively, "Not at all confident" and "Not very confident" to act in BLS-related emergencies. However, at the end of the clinical simulation session and the experience in the scenarios performed, it was possible to identify a change in the response pattern. Among the nine participants, eight indicated that they were "Confident" to act in the same scenario (BLS-related emergencies). Only one participant chose answer 4 (Very confident).

Table 2 - Details of the comparison between the control and experimental groups regarding self-confidence in emergencies in the pre-test and post-test (n=9). Caicó, RN, Brazil, 2021.

	Pre-test			Post-test		
	Mean	SD	Mode	Mean	SD	Mode
1. How confident are you that you can recognize signs and symptoms of a cardiac event?	1.77	0.97	1.00	3.11	0.92	3.00
2. How confident are you that you can recognize signs and symptoms of a respiratory event?	2.11	0.78	2.00	3.11	0.92	3.00
3. How confident are you that you can recognize signs and	1.77	0.83	1.00	3.00	1.11	3.00

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symptoms of a neurological event?						
4. How confident are you that you can accurately assess an individual with chest pain?	1.88	0.78	2.00	2.88	0.78	3.00
5. How confident are you that you are can accurately assess an individual with dyspnea?	2.11	0.78	2.00	3.11	0.78	3.00
6. How confident are you that you can accurately assess an individual with altered mental status?	2.33	1.00	2.00	3.11	0.92	3.00
7. How confident are you that you can appropriately intervene in an individual with chest pain?	1.44	0.52	1.00	2.77	0.44	3.00
8. How confident are you that you can appropriately intervene in an individual with dyspnea?	1.44	0.72	1.00	3.44	0.72	4.00
9. How confident are you that you can appropriately intervene in an individual with altered mental status?	1.66	0.70	1.00	3.11	0.92	3.00
10. How confident are you that you can assess the effectiveness of your interventions in an individual with chest pain?	1.44	0.52	1.00	2.88	0.78	3.00
11. How confident are you that you can assess the effectiveness of your interventions in an individual with dyspnea?	1.55	0.72	1.00	3.22	0.97	3.00
12. How confident are you that you can assess the effectiveness of your interventions in an individual with altered mental status?	1.77	0.83	1.00	2.88	0.92	3.00

Source: The authors.
Abbreviations: SD – Standard Deviation;
*Mode
1 for Not at all confident
2 for Little confident
3 for Confident
4 for Very confident
5 for Extremely confident

DISCUSSION

In relation to the contributions of *in situ* simulation, reasserting CSD 1, in a safe environment such as simulation, it is possible to enhance students' self-confidence and, in an integrated way, systematize, improve and develop cognitive processes, favoring motivation and satisfaction. Implementing the *in situ* simulation strategy culminates in gaining confidence due to anticipating situations that may occur in the care practice[24].

In turn, CSD 2 reflects the professionals' feeling of concern regarding the lack of knowledge about the care protocols in BLS.

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When health professionals with outdated knowledge provide assistance, they can compromise quality of the services and, therefore, exert impacts on patient safety[25].

Hands-on simulation training expands teaching outside the classroom. A study carried out in Denmark evidences that, when carried out in health services, simulation provides ideas for organizational changes[16].

CSD 3 emphasizes the contribution of *in situ* simulation in the association between theory and practice. The literature points out that this strategy contributes to solving tensions between theory and practice in a safe way, as errors do not endanger the patient, in addition to promoting an authentic representation of reality[26-27].

Those surveyed did not mention weaknesses in relation to *in situ* simulation. However, they point to lack of materials in the Basic Health Units, attributed as a weakness in Primary Health Care. A number of studies show inconsistency between the standard structure of a BHU determined by the Ministry of Health and the one found in the reality of Basic Care[4,28-29]. A study points out that some of them operated in small houses, even improvised, without accessibility or the minimum adequate to accommodate the demands that arrive at the locus[29].

In relation to the results referring to the method's potentialities, it can be seen that it dialogues with studies carried out in other Brazilian regions. A survey carried out in southern Brazil evidenced that, among the contributions of simulation for Nursing students, improving knowledge/learning and increasing psychomotor skills are the most predominant[30]. Simulation enables the development of competencies and critical thinking, as well as of the students' active participation[31].

In relation to facilitation of the teaching-learning process, evidenced in CSD 7, it corroborates with a study whose conclusion evidences that *in situ* simulation allowed for a safe opportunity to evaluate and observe the multidisciplinary team's technical, behavioral and operational performance[32]. The literature also highlights that using educational technologies assists in the teaching and learning process[33].

Regarding the pre- and post-intervention self-confidence results, and when considering the difference between means and Standard Deviation (SD) of four of the 12 variables, there was no improvement in the response pattern, namely: 2, 3, 6 and 12. These variables refer to confidence in recognizing signs and symptoms of a respiratory event (variable 2) and confidence in recognizing and evaluating an individual with altered mental/neurological status.

These results can be directly related to the contents of the BLS theme, which address, in too much evidence, the recognition of events and changes in the respiratory and cardiovascular systems, as they are more present in the approach to the victims. However, the recognition of events and neurological alterations is reduced to tactile and verbal stimulation towards the victims. In addition to

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that, in this study, the participants had different schooling levels, which may have influenced this result.

In a methodological study for the adaptation and validation of a measuring instrument that verified nurses' self-confidence in caring for critically-ill patients[20], the values obtained through the descriptive data analysis indicated greater self-confidence among the participants in the "respiratory" dimension and lower self-confidence in the "cardiac" dimension, both in the pre- and post-intervention stages. The highest self-confidence score in the respiratory dimension is similar to the results found in the validation study[20]; this fact may perhaps be interpreted from the perspective that the respiratory assessment parameters are more visible than the others and, thus, the subjects feel safer in evaluating this dimension; however, the cardiac dimension was the domain in which the highest increase in self-confidence among the participants was observed[20].

When *in situ* simulation is used as a strategy in an active methodology for the production of educational activities, it enables a significant association between active participation in the simulated scenarios and the mean self-confidence score[34]. Self-confidence is related to the professionals' ability to believe in their skills and in self-success of their actions, factors that directly influence their confidence to provide clinical care. It is linked to self-efficacy and promotes professional autonomy, stability in decision-making and positive results with the assistance provided[35].

Although the results of this study mention a small number of participants, as it is a pilot study, the number can be highlighted as a limiting factor.

CONCLUSIONS

In relation to self-confidence to act in emergencies, it was possible to identify that the participants improved the response pattern in the post-test, attributing higher self-confidence scores to act in emergencies. In the participants' perception, *in situ* simulation contributed to skills development, to improving learning and the association between theory and practice. As potentialities, the lessons learned and the technologies used in the research and in the professional training session were pointed out. The results show that the method has potential for BLS health training for BHC teams.

REFERENCES

1. Ministério da Saúde (BR). Portaria n. 2.436, de 21 de setembro de 2017. Aprova a Política Nacional de Atenção Básica, estabelecendo a revisão de diretrizes para a organização da Atenção Básica, no âmbito do Sistema Único de Saúde (SUS). Brasília (DF): Ministério da Saúde; 2017.

2. Brasil. Ministério da Saúde. Departamento de Atenção Especializada. Manual Instrutivo da Rede de Atenção às Urgências e Emergências no Sistema Único de Saúde (SUS). Brasília: Ministério da Saúde; 2013.

3. Farias DC, Celino SDM, Peixoto JBS, Barbosa ML, Costa GMC. Acolhimento e resolubilidade das urgências na Estratégia Saúde da Família. Rev Bras Educ Méd. 2015; 39(1): 79-87. Disponível em: https://doi.org/10.1590/1981-52712015v39n1e00472014

4. Cassinelli F, Melo ES, Costa CRB, Reis RK. Avaliação da estrutura na atenção primária em saúde para o suporte básico de vida. Saúde Pesqui. 2019; 12(2): 317-322. Disponível em: https://doi.org/10.17765/2176-9206.2019v12n2p317-322

6. Gonzalez M, Timerman S, Gianotto-Oliveira R, Polastri T, Canesin M, Schimidt A, et al. I Diretriz de Ressuscitação Cardiopulmonar e Cuidados Cardiovasculares de Emergência da Sociedade Brasileira de Cardiologia. Arq Bras Cardiol. 2013;101(2). Disponível em: Diretriz_Emergencia.pdf (cardiol.br)

5. Panchal AR, Bartos JA, Cabañas JG, Donnino MW, Drennan IR, Hirsch KG, et al. Part 3: Adult Basic and Advanced Life Support: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020;142(16):366-468. Disponível em: https://doi.org/10.1161/CIR.0000000000000916

6. Zonta JB, Eduardo AHA, Ferreira MVF, Chaves GH, Okido ACC, et al. Self-confidence in the management of health complications at school: contributions of the in situ simulation. Rev Latino-Am Enfermagem. 2019;27:1-9. Disponível em: https://doi.org/10.1590/1518-8345.2909.3174

7. Cheng A, Magid DJ, Auerbach M, Bhanji F, Bigham BL, Blewer AL, et al. Part 6: Resuscitation Education Science: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020;142(16):551-79. Disponível em: https://doi.org/10.1161/CIR.0000000000000903

8. Sjoberg F, Schonning E, Salzmann-Erikson M. Nurses' experiences of performing cardiopulmonary resuscitation in intensive care units: a qualitative study. Journ Clin Nurs. 2015; 24(17): 2522-28. Disponível em: https://doi.org/10.1111/jocn.12844

9. Capovill NC. Ressuscitação cardiorrespiratória: uma análise do processo de ensino/aprendizagem nas universidades públicas estaduais paulistas [dissertação]. Campinas (SP): Universidade Estadual de Campinas; 2002.

10. Gomes JAP, Braz MR. Conhecimento de acadêmicos de enfermagem frente à parada cardiorrespiratória. Cad UniFOA. 2012; 7(18): 85-91. Disponível em: https://doi.org/10.47385/cadunifoa.v7.n18.1094

11. Neves LMT, Silva MSV, Carneiro SR, Aquino VS, Reis HJL. Conhecimento de fisioterapeutas sobre a atuação em suporte básico de vida. Fisioter Pesq. 2010; 17(1): 69-74. Disponível em: https://doi.org/10.1590/S1809-29502010000100013

12. Meira Júnior, Luiz E. Avaliação de treinamento em suporte básico de vida para médicos e enfermeiros da atenção primária. Rev Bras Med Fam Comun. 2016; 11(38): 1-10. Disponível em: https://doi.org/10.5712/rbmfc11(38)1231

13. Santos ECA, Fontes CJF, D'Artibale EF, Miravete JC, Ferreira GE, Ribeiro MRR. Simulation for teaching cardiorespiratory resuscitation by teams: setting and performance assessment. Rev Latino-Am Enfermagem. 2021;29:1-12. Disponível em: https://doi.org/10.1590/1518-8345.3932.3406

14. Costa RRO, Medeiros SM, Martins JCA, Enders BC, Lira ALBC, Araújo MS. A Simulação no ensino de enfermagem: uma análise conceitual. Rev Enferm Centro-Oeste Min. 2018; 8. Disponível em: https://doi.org/10.19175/recom.v8i0.1928

15. Couto TB. Simulação in situ. In: Scalabrini Neto A, Fonseca AS, Brandão CFS. Simulação realística e habilidades na saúde. São Paulo: Atheneu; 2017. p.127-33.

16. Sorensen JL, Van der Vleuten C, Rosthoj S, Ostergaard D, LeBlanc V, Johansen M, et al. Simulation-based multiprofessional obstetric anaesthesia training conducted in situ versus off-site leads to similar individual and team outcomes: a randomised educational trial. BMJ Open. 2015;5(10). Disponível em: Simulation-based multiprofessional obstetric anaesthesia training conducted in situ versus off-site leads to similar individual and team outcomes: a randomised educational trial | BMJ Open

17. Posner GD, Clark ML, Grant VJ. Simulation in the clinical setting: towards a standard lexicon. Adv Simul. 2017;2:15. Disponível em: Simulation in the clinical setting: towards a standard lexicon | Advances in Simulation | Full Text (biomedcentral.com)

18. Dieckmann P, Gaba DM, Rall M. Deepening the theoretical foundations of patient simulation as social practice. Simul Healthc. 2007;2(3):183-93. Disponível em: https://doi.org/10.1097/sih.0b013e3180f637f5

19. Thiollent M. Metodologia da pesquisa-ação. 18. ed. São Paulo: Cortez; 2011.

20. Martins JCA, Batista RCN, Coutinho VRD, Mazzo A, Rodrigues MA, Mendes IAC. Self-confidence for emergency intervention: adaptation and cultural validation of the Self-confidence Scale in nursing students. Rev Latino-Am Enfermagem. 2014; 22(4): 554-561. Disponível em: https://doi.org/10.1590%2F0104-1169.3128.2451

21. Fabri RP, Mazzo A, Martins JCA, Fonseca A da S, Pedersoli CE, Miranda FBG, et al. Development of a theoretical-practical script for clinical simulation. Rev esc enferm USP. 2017;51. Disponível em: SciELO - Brasil - Development of a theoretical-practical script for clinical simulation Development of a theoretical-practical script for clinical simulation

22. Lefevre F, Lefevre AMC. O sujeito coletivo que fala. Interface. 2006; 10(20): 517-24.

23. Lefèvre F. Discurso do sujeito coletivo: nossos modos de pensar, nosso eu coletivo. 1 ed. São Paulo: Andreoli; 2017.

24. Knobel A, Overheu D, Gruessing M, Juergensen I, Struewer J. Regular, in-situ, team-based training in trauma resuscitation with video debriefing enhances confidence and clinical efficiency. BMC Med Educ. 2018;18(1):127. Disponível em: https://doi.org/10.1186%2Fs12909-018-1243-x

25. Rafter N, Hickey A, Condell S, Conroy R, O'Connor P, Vaughan D, et al. Adverse events in healthcare: learning from mistakes. QJM. 2015;108(4):273-7. Disponível em: Adverse events in healthcare: learning from mistakes - PubMed (nih.gov)

26. Fleetwood VA, Veenstra B, Wojtowicz A, Kerchberger J, Velasco J. Communication through simulation: Developing a curriculum to teach interpersonal skills. Surgery. 2018;164(4):802-809. Disponível em: https://doi.org/10.1016/j.surg.2018.05.037

27. Gundrosen S, Solligård E, Aadahl P. Team competence among nurses in an intensive care unit: the feasibility of in situ simulation and assessing non-technical skills. Intensive Crit Care Nurs. 2014;30(6):312-7. Disponível em: Team competence among nurses in an intensive care unit: the feasibility of in situ simulation and assessing non-technical skills - PubMed (nih.gov)

28. Oliveira TA, Mesquita GV, Valle ARC, Moura MEB, Tapety FI. Percepção de profissionais da estratégia saúde da família sobre o atendimento de urgência e emergência. Rev Enferm UFPE. 2016; 10(3):1397-406. Disponível em: https://doi.org/10.5205/1981-8963-v10i3a11080p1397-1406-2016

29. Moreira KS, Lima CA, Vieira MA, Costa SM, et al. Avaliação da infraestrutura das unidades de saúde da família e equipamentos para ações na atenção básica. Cogitare Enferm. 2017; 22(2): 1-10. Disponível em: http://dx.doi.org/10.5380/ce.v22i2.51283

30. Bortolato-Major C, Mantovani MF, Felix JVC, Boostel R, Mattei AT, Arthur JP, et al. Autoconfiança e satisfação dos estudantes de Enfermagem em simulação de emergência. Rev Min Enferm. 2020; 24: 1-5. Disponível em: 1415-2762-reme-24-e1336.pdf (bvs.br)

31. Barreto DG, Silva KGNS, Moreira SSCR, Silva TS, Magro MCS. Realistic simulation as a teaching strategy: an integrative review. Rev Baiana Enferm. 2014; 28(2): 208-14. Disponível em: Vista do simulação realística como estratégia de ensino para o curso de graduação em enfermagem: revisão integrativa (ufba.br)

32. Kaneko RMU, Couto TB, Coelho MM, Taneno AK, Barduzzi NN, Barreto JKS, et al. Simulação in Situ, uma metodologia de treinamento multidisciplinar para identificar oportunidades de melhoria na segurança do paciente em uma unidade de alto risco. Rev Bras Educ Med. 2015;39(2). Disponível em: https://doi.org/10.1590/1981-52712015v39n2e00242014

33. Kobayashi RM, Araújo GD. Avaliação do treinamento mediado por tecnologias educacionais: revisão integrativa. Journ Health Inform. 2019; 11(3). Disponível em: Vista do Avaliação do treinamento mediado por

tecnologias educacionais: revisão integrativa (sbis.org.br)

34. Costa RRO, Medeiros SM, Martins JCA, Cossi MS, Araújo MS. Percepção de estudantes da graduação em enfermagem sobre a simulação realística. Rev Cuid. 2017; 8(3): 1799-808. Disponível em: https://doi.org/10.15649/cuidarte.v8i3.425

35. Van Dyk J, Siedlecki SL, Fitzpatrick JJ. Frontline nurse managers' confidence and self-efficacy. J Nurs Manag. 2016 May;24(4):533-9. Disponível em: Frontline nurse managers' confidence and self-efficacy - PubMed (nih.gov)

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