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Building and developing realistic simulation scenarios on safe drug administration

Construção e desenvolvimento de cenários de simulação realística sobre a administração segura de medicamentos

Construcción y desarrollo de escenarios de simulación realística sobre la administración segura de medicamentos

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ABSTRACT

Objective: To describe the construction of the scenarios and the development of the realistic simulation technique in health on safe administration of drugs for nursing professionals.
Method: Report of experience developed from October 2017 to May 2018 involving the steps of training of the facilitators, construction of the scenarios, development of the realistic simulation with nursing staff of a teaching hospital in the southern region of Brazil. The best simulation practice guidelines used from the International Nursing Association for Clinical Simulation and Learning.
Results: Four practice-based scenarios were constructed based on adverse events. The nurses educators trained the facilitators participating in all stages. There was concern about the fidelity of the scenarios, as well as the execution of the briefing and debriefing stages.
Conclusions: The simulation allowed the reflection of the "way of doing" of the teams adjusting the process of preparation and administration of medicines to the institutional recommendations and, thus, promoting the safety of the process.
Keywords: Education, continuing. Education department, hospital. Education, nursing. Simulation training. Patient safety.

RESUMO

Objetivo: Descrever a construção de cenários e desenvolvimento da técnica de simulação realística em saúde sobre administração segura de medicamentos pela enfermagem.
Método: Relato de experiência envolvendo as etapas de formação dos facilitadores, construção de cenários, desenvolvimento da simulação realística com a enfermagem de um hospital de ensino na Região Sul do Brasil fundamentada pelas diretrizes das melhores práticas em simulação da International Nursing Association for Clinical Simulation and Learning. A atividade foi desenvolvida de outubro de 2017 a maio de 2018.
Resultados: Foram construídos quatro cenários baseados em eventos adversos ocorridos na instituição hospitalar. As enfermeiras educadoras realizaram formação como facilitadoras. Houve preocupação com a fidelidade dos cenários e com a execução das etapas de briefing e debriefing.
Conclusões: A simulação permitiu a reflexão do "modo de fazer" das equipes, ajustando o processo de preparo e administração de medicamentos às recomendações institucionais com foco na segurança do processo.
Palavras-chave: Educação continuada. Serviço hospitalar de educação. Educação em enfermagem. Treinamento por simulação. Segurança do paciente.

RESUMEN

Objetivo: Describir la construcción de los escenarios y el desarrollo de la técnica de simulación realista en salud sobre administración segura de medicamentos para profesionales de enfermería.
Método: Relato de experiencia, desarrollado de octubre de 2017 a mayo de 2018, que involucra las etapas de formación de los facilitadores, la construcción de los escenarios, el desarrollo de la simulación realista con un equipo de enfermería de un hospital de enseñanza en la región sur de Brasil. Las directrices de las mejores prácticas en simulación utilizadas fueron de la International Nursing Association for Clinical Simulation and Learning.
Resultados: Se construyeron cuatro escenarios alineados con la práctica, basados en eventos adversos. Las enfermeras educadoras realizaron formación como facilitadoras. Hubo preocupación por la fidelidad de los escenarios y, también, con la ejecución de las etapas de briefing y debriefing.
Conclusiones: La simulación permitió reflexionar sobre el "modo de hacer" de los equipos, ajustando el proceso de preparación y administración de medicamentos a las recomendaciones institucionales y, de esta forma, promoviendo la seguridad del proceso.
Palabras clave: Educación continua. Servicio de educación en hospital. Educación en enfermería. Entrenamiento simulado. Seguridad del paciente.

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INTRODUCTION

In 2017, the Global Patient Safety Challenge emphasized the theme of "No-harm Medication", aimed at reducing serious and preventable drug-related harm by 50 percent over the next five years. This initiative proposed to health institutions to develop more efficient and safe care systems at each stage of the drug process, as well as to assess the nature and scope of preventable harm[1].

Health systems have focused the actions of permanent education on the safety culture, recognizing its importance and the impact of improvements in the quality of patient care[1]. Investing in the change of work processes in health requires having as educational political option[2]. In this sense, it is the convergence of the purposes of permanent education with the realistic simulation technique in health, providing educational spaces that integrate and/or reproduce the work environments, allowing the dialogic reflection of the everyday of the processes and identifying what needs to be transformed.

Since 2013, the Nursing Education Service (SEDE) of a University Hospital in the South of Brazil has been using different educational strategies with the support of the Pharmacy Service, Risk Management and Quality Program to propagate in the institution the adoption measures in this process. The process of drug preparation and administration is part of the training matrix for the nursing team of this institution.

In addition to these activities, SEDE participates in the review, construction and validation of Standard Operational Procedures (POPs) through the training of teams, many of them using active methodologies. Currently, the realistic simulation technique presents the possibility of approaching the actions of permanent education in health with the reality lived by the nursing professionals, considering the errors in the preparation and administration of medicines not as isolated facts, but as multifactorial necessitating an analysis expanded[1].

The SEDE approached the realistic simulation in health because this technique has demonstrated that professionals develop skills such as decision making, communication and teamwork[3-4]**.** It is recognized the importance of the institutions to propose permanent education actions based on these premises with a view to adopting safe practices in the care of the patient[5]**)**. The relevance of this report is to disseminate participatory educational actions aimed at contributing to patient safety.

Thus, the guiding question that guided the present experience report was: how the methodology of realistic simulation contributes in the permanent education in health approaching the theme drug process. The present report of experience had the objective of describing the construction of scenarios and the development of the realistic simulation technique from the perspective of the permanent education in health on the safe administration of medicines for nursing professionals.

METHODOLOGY

The development of the activities present in this experience report was carried out with the Nursing Education Service of a university hospital in the southern region of Brazil. In this service a pedagogue and eight nurses educators with specific training to act in the permanent education in the Institution work. Its educational actions are aimed at the 2,400 nursing professionals, possibly counting on the participation of other professionals, both as lecturers and participants. In the activities with realistic simulation, three pilot units were selected to begin the implementation of this technique, considering that this was a new teaching technique in the context of this hospital institution. The development stages of the realistic simulation, starting with the training of the facilitators until the simulation development, was from October 2017 to May 2018.

The framework of the realistic health simulation steps presented in this study followed the guidelines of the best simulation practices published by the *International Nursing Association for Clinical Simulation and Learning* with the *briefing* phases, scenario and *debriefing*[6]. The four scenarios that addressed the preparation and administration of medicines were prepared by the SEDE nurses together with the institution's pharmacists. The scenarios were evaluated for content, veracity and facticity by hospital professionals.

The audience participating in each realistic simulation scenario was a nursing technician and nurses from clinical and surgical units, with a minimum of four participants, at least one nurse per group, and a maximum of ten people. The professionals participated in the activity that consisted of one of the scenarios, with a maximum duration of one hour, in working hours or outside of their journey. It was tried to alternate the scenarios so that there was a diversity of situations to be problematized. The simulations were included in the training matrix of the participating units. Each simulation scenario had a facilitator, a support professional and an actress, who could be a nurse or a volunteer nursing student, all linked to the SEDE.

The present study observed the ethical aspects in human research[7], which due to its characterization as an experience report, preserved the anonymity of the institution and participants in educational activities.

Realistic simulation development in health

In the in-service training activities, international recommendations were observed that indicate the purpose of the construction of the scenarios in line with the practice and supported by evidence, the fidelity of the same to ensure the realistic immersion of the professionals, the clear and precise execution with the steps of *briefing* and *debriefing*[6]. Following are the construction and development phases of the simulation scenarios.

Training of facilitators in simulation

The training of nurse educators as facilitators was given by participation in events on the theme and internal educational activities that deepened the stages of realistic simulation in health coordinated by nurse with technical experience. The internal training included concepts, pedagogical references, practical workshops that provided the identification of needs, the *design* simulation scenarios, structuring the logistics to execute them, and the *debriefing*. The training of nurses as facilitators was considered finalized after the conduction of a scenario by them, in which they performed *briefing*, coordinated the execution of the scenario and the *debriefing*.

Construction of realistic simulation scenarios

The use of realistic simulation as a teaching technique for the development of training on safe drug administration began in 2017, after a survey of nursing teams questioning the most critical stage in the preparation and administration of medications, taking because of 'reading and interpreting the medical prescription'. With the identification of this priority, the nurses educators, assisted by clinical pharmacists, constructed four scenarios with the primary objective of identifying the steps of reading and interpreting the medical prescription and discussing the understanding of the 'Table of Injectable Medications' of the Hospital Pharmacy Service . Each scenario had secondary objectives, among which, calculation of dose and dilution of drugs, choice of route of administration, such as the case of *off-label*[8] drugs and search for resources to clarify doubts. In the scenario planning, two roles of actors were proposed for each scenario, which were a nurse and a nursing technician, the patient would be represented by an actress.

The situations that supported the construction of the simulation scenarios were reported as occurrences of adverse events in the institution. As the simulation technique has been related as a suitable approach to review the work processes related to adverse events[9], it was considered opportune to present these situations to the nursing teams and to develop a reflection on the *debriefing* on decision-making and prevention strategies for future adverse events.

The script of the scenarios, the nursing and medical prescriptions, specially elaborated for the simulation, were presented initially for physicians, with experience in the simulation technique and clinical knowledge, and nurses, to obtain their appreciation and recommendations of adequacy. After minor adjustments, the assessment of the fidelity of the scenarios was continued in a teaching laboratory with the participation of a nurse and a nursing technique that would not participate in the training involving these scenarios. From the observations of the professionals, the necessary adjustments were made, and the organization of the logistics for the training was started, such as: definition of the participants, the contact with the heads, the schedule and the schedules with the respective units.

Realistic simulation development

The training took place in March and April of 2018, contemplating clinical and surgical units which attend patients in situations depicted in the simulation scenarios. The trainings were offered to one unit at a time, until reaching the goal of 90% of the cadre of participating nursing professionals. Each simulation had a maximum of one hour and an average of six participants. The training took place in a Simulation Laboratory, with a complete nursing post, a hospital ward for low and medium complexity care, a classroom for the *debriefing*. The nursing station was like the one in the hospital, and all the materials necessary for the preparation and administration of medications were available. This care contributed to the trustworthiness of the scenario, increasing the immersion of the participants in the activity. The infirmary was equipped as described in the scenario to be run.

The role of patient was performed by actresses, nurses or volunteer students and linked to the Education Service, who had no contact with these teams for not being recognized. The actresses received adequate characterization of the role and orientation about their participation, about the context of care, answers to possible questions, desirable reactions to specific actions and necessary tensions. The option to use actresses and not mannequin was one of the strengths of the process, as it allowed different unfolding for the same scenario.

The application of the realistic simulation technique is strongly associated with the prevention and approach to adverse events[9-10]. The fidelity of the scenario is of extreme importance, especially when it is being performed with health professionals. The issue of patient safety is not easy to approach in educational actions, considering this observation, the possibility of simulating everyday actions, free of risks, allows a deepening of the discussion of the care process involved in it[10].

The execution of the scenarios followed the stages of *briefing* in 5 minutes, setting the scene in 15 minutes and *debriefing* in 20 minutes observing the international recommendations[6]. Participants were greeted by classroom facilitators and pharmacists for the *briefing,* was explained how the training would be given, the pact of respect, confidentiality and commitment to immersion in the scenario. Two actuators (one nurse technician and one nurse) were requested and then referred for the recognition of the nursing station. The others would be observers, being instructed not to interact with the actors and remain silent. They received cards indicating which stage of the drug preparation and administration process they should observe: hand hygiene, patient identification, drug preparation, drug administration, and communication. After the guidelines, all were gathered at the nursing station to read the case and the beginning of the scenario. The participants needed to read and interpret the medical prescription, prepare the medication according to the medication table and administer it, following the standard procedure (POP) for the preparation and administration of medication by the prescribed route.

For the *debriefing* the facilitator followed a roadmap to assist in the discussion, according to the objectives of each scenario and in line with good practices in realistic simulation[6]. Initially, the actors in the scenario talked about the problem presented to them, then what they did, how they felt, the positives and what could be improved. In the sequence, the observers also had the opportunity to verbalize their contributions and, finally, everyone shared what they had learned from the simulated case. In some settings, it was possible to have a pharmacist present, which contributed to the understanding of this process. The *debriefing* made it possible to rescue some of the POP topics of drug preparation and administration, as well as understand specific issues that interfere with decision-making by professionals when reading the drug dilution table. At the end of each realistic simulation, an instrument with validated translation was used to evaluate the suitability of the proposed design.

CONCLUSIONS

The use of the realistic simulation technique was a new experience in the institution, posing a challenge to nurses educators and pharmacists. The simulation allowed the approach and reflection of the "way of doing" of the educators from a new modality of approach, in which knowledge and experiences were shared. Integration with other health professionals, who in this case were pharmacists, deserves to be highlighted as an expanded approach in this educational practice. Within the proposed objectives, it is necessary to invest in the construction of scenarios based on real events, the realization of *design* to be as realistic as possible and the importance of preparing the facilitators so that they can carry out a problematizing *debriefing*.

As recommendations for the use of the realistic simulation technique in in-service training, there is a need for investment in the qualification of the professionals who will act as facilitators, the detailed planning of the scenarios and the organization now of its application. It is believed that this technique can be expanded by addressing other issues related to patient safety, such as the transfer of care, effective communication and validation of work processes.

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