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EXPERIENCE RELATE

HEALTH SIMULATION IN THE MANAGEMENT OF POSTPARTUM HEMORRHAGE: EXPERIENCE REPORT IN NURSING EDUCATION

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ABSTRACT

Objective: to describe the experience of using health simulation in undergraduate nursing education in the situation of postpartum hemorrhage. **Method:** descriptive study of the type experience report on the application of health simulation in nursing education based on the strategy - Zero Maternal Death due to Postpartum Hemorrhage (0MDxH) of PAHO/WHO. The simulation was carried out in the first half of 2020, with 15 students from the Sexuality and Human Reproduction Discipline, taught in the sixth semester of the Undergraduate Course of Nursing at a Federal University of the Midwest of Brazil. **Results:** the use of health simulation in this experience enabled the participation of undergraduate nursing students in a postpartum hemorrhage scenario, promoting professional development through experience in clinical practice. **Conclusion:** the inclusion of health simulation in teaching promotes the development of important skills for nursing care practice in the context of care for women with postpartum hemorrhage.

Keywords: Nursing Education. Simulation Training. Postpartum Hemorrhage.

INTRODUCTION

Severe hemorrhages, especially in the postpartum period, are the second leading cause of maternal death in Brazil. The Zero Maternal Death by Postpartum Hemorrhage (0MDxH) strategy is a proposal of the Pan American Health Organization (PAHO) with support from the World Health Organization (WHO), for regions of countries with high levels of maternal death by Postpartum Hemorrhage (PPH), in order to improve the quality of obstetric care in these regions by reducing maternal deaths from this cause[1].

The strategy highlights in its objectives the need to qualify health professionals through training guided by scientific evidence and provides a guidance manual with the methodological proposal of an obstetric prevention and management course for PPH, addressing the development of theoretical activities and skills training through health simulation [1].

The use of realistic simulation in health is a feasible and effective method in the teaching-learning process of students and professionals in the area of nursing. It allows the development of psychomotor skills, communication, decision-making and leadership, essential to the resolution of clinical crisis situations, thus ensuring safer health care [2]. The convergence of this effective and innovative practice, supported by scientific evidence, with the PAHO/WHO proposal to confront maternal deaths from PPH[1], has the potential to prepare future nurses to act safely and quality in the identification and management of this obstetric complication.

The inclusion of the theoretical and practical

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guidelines of the 0MDxH strategy in undergraduate nursing education is extremely relevant for the training of professionals with technical and scientific competence to act in coping with maternal mortality related to this cause in the country. Thus, this study aims to describe the experience of using health simulation in undergraduate nursing education in the situation of Postpartum Hemorrhage.

METHOD

Descriptive study, of the type of experience report, carried out from the application of health simulation in nursing education, based on the Manual of the strategy Zero Maternal Death by Postpartum Hemorrhage (0MDxH) of PAHO/WHO[3], in the Discipline Sexuality and Human Reproduction, taught in the sixth semester of the Undergraduate Course of Nursing of a Federal University of the Midwest of Brazil.

To carry out the simulation activity, the International Nursing Association for Clinical Simulation and Learning (INACSL) guidelines for good practice in simulation were used as a reference, which recommends three stages for its construction: planning; execution of the scenario; and evaluation[4].

In the planning stage, the physical space is structured, learning objectives are defined, facilitators are trained, instruments are adapted and instructional material on the proposed theme is prepared[4].

The scenario execution stage comprises three moments, the briefing, the scenario and the debriefing. The first is defined as the occasion of the instruction of the case to be solved. The scenario is the implementation of the proposed simulation. The debriefing configures the most important stage in the application of the scenario, as it is the phase in which participants reflect on their experiences and feelings, articulate theory and practice through critical thinking and discuss aspects of simulation relevant to their practice[4]. Finally, the evaluation stage must be applied continuously, based on the understanding that all scenarios lack constant adaptations, even if they have been previously tested [4].

For the execution of the scenario, the guidance manual for the course of prevention of obstetric management of hemorrhage was used as a reference: Zero Maternal Death due to Hemorrhage of PAHO/WHO[3]. This document guides the execution of a course with a workload of sixteen hours, aimed at health professionals with the objective of developing skills for the management of PPH situations by all possible causes (“4 Ts - tone, trauma, tissue and thrombin). The proposition was adapted for use with undergraduate nursing students and it was chosen, among the cases proposed in the manual, the use of only one case, a PPH after vaginal delivery, due to uterine atony, which is the main cause of this obstetric complication (Scenario 01 of the PAHO manual).

The structuring of the scenario represented a ward environment, which had a hospital bed, simulated gas network, specific equipment and supplies for intravenous therapy, emergency cart with cardioverter and defibrillator, aneroid sphygmomanometer, procedure cart and trash bin for common and infectious waste.

The site also had sound and video accessories for capturing the image and audio and a control room (command cabin) with a one-way mirror. An auditorium (80 seats) was also used as an observation and debriefing room, in which the other students could watch the transmission of the simulation in real time through computer software connected to three cameras.

Regarding the equipment, an obstetric hemorrhage kit and the shock index scale were allocated in the scenario according to the PAHO manual[3]. To reproduce the patient, a medium-fidelity simulator (Laerdal ® NursingAnne) was used, which allows clinical training in gynecology, obstetrics and postpartum, as well as evaluation and provision of general care. Artificial blood was used to simulate blood loss. For the mimicry of the multiparametric monitor, a computer software-based simulator (Laerdal® LLEAP) was used.

The activity was carried out in the first half of 2020, at the Health Simulation Center of a University Hospital (HSC-UH) linked to the Public University in which the discipline is taught. The participants of the action were 15 students and as facilitators 3 teachers and 2 professionals from the HSC-UH. The activity lasted 12 hours, of which 8 were theoretical and 4 practical.

The data used to carry out this report were

collected through participant observation of the facilitators and oral exposure of the students who participated in the activity. Because it is an experience report, there was no need for approval by the Research Ethics Committee, however, confidentiality was respected and the identity of the participants was safeguarded.

RESULTS AND DISCUSSION

In the planning stage, the theme was aligned among the facilitators. The approximation with the chosen teaching-learning methodology was provided through training and scientific meetings, which included discussion of cases between teachers and the team of the UH simulation center. As an alignment strategy, a pilot simulation was developed with teachers who did not participate in the activity. These were experts in the subject and made contributions to the scenario and the instruments built/adapted. At that time, the skills checklist was tested, as well as the briefing script, scenario and debriefing.

On the day of the development of the activity, to verify the students' previous knowledge about the theme, a theoretical knowledge test was applied, consisting of ten multiple-choice questions. Subsequently, the professors presented the theorization about PPH in a dialogued expository manner, with the support of videos, based on current scientific evidence, highlighting the global, national and regional panorama about this obstetric complication, as well as the measures of prevention, identification and management of this condition. Students were given the opportunity to discuss and manifest their personal experiences related to the subject during classes and in the practical field of the discipline.

After the moment of theorizing, students were asked to choose four volunteers to act in the scenario. Although the manual guides the performance of the simulation with the participation of a multiprofessional health team, because it is an activity with undergraduate nursing students, it was decided to perform the simulation only with the performance of the nursing team, which was consistent with the choice of the case – PPH after vaginal delivery of parturient of usual risk, caused by uterine atony and corrected with medication and uterine massage.

The simulation began with the briefing, at which time the participants were presented with the clinical case that would be implemented and aspects such as time, available resources, reinforcing the need to act as in a real situation.

The participants were divided according to the team that works in the delivery room of the UH where the action was carried out: two nurses (one on duty and one teacher); one nursing technician and one nursing student. The simulation was performed following the protocol of the service, which supports the administration of medications by the obstetric nurse until the arrival of the medical professional. The other participants remained in the auditorium assuming the role of observers, for whom a skills checklist proposed by the manual was made available[4], and they were instructed to mark the necessary stages with a view to evaluating and monitoring the skills expected by colleagues who were working in the simulation scenario.

Initially, the scenario featured a patient (simulator) covered with a clean sheet and lying under another that contained approximately 1000 ml of a reddish substance, simulating the amount of blood loss from a severe hemorrhage. The initial parameters presented on the monitor were HR: 98bpm, BP: 85x30mmHg and RR: 22irpm, being verbalized through the sound system of the command cabin that the patient was pale, sweaty and with cold skin, which according to the classification of Baskett[4] denoted a mild shock index.

The scenario lasted approximately ten minutes and, at the beginning, the students showed apprehension and disorientation about the decision-making and protocol stages to be followed for the care of PPH. However, after discussion and quick reflection with the team on the points necessary for assessment and management of the situation, they were able to evaluate the patient, measure volume loss, weigh the shock index and apply the necessary interventions, according to the care protocol. The students were able to develop the necessary assistance following the stages recommended by the manual[4] and reversed the patient's condition. When verbalizing that they started the administration of misoprostol®, the command cabin informed that the condition had been

reversed and the patient was stable.

In the planning phase of the activity, the teachers established in the project that the simulated framework would cease from the administration of misoprostol®, however, if the students were unable to follow the recommendations established by the protocol, the command cabin would change the parameters on the monitor, so that the framework would be aggravated, and the participants would be informed by the sound system that the patient would have died.

In the execution of the scenario, it was verified that the academics were able to apply the theoretical knowledge about the management of PPH in practice, as they reversed the situation presented. It was also noticed that the activity favored the development of communication skills, teamwork and leadership, since the academics after discussing the case together made the decisions that were directed by a student who stood out as leader of the situation.

A study that carried out training in first aid for Primary Care health teams corroborates these results, since during the use of the simulation the articulation between theory and practice and the development of technical skills essential for the performance of situations were observed among the participants. In addition, it was identified that the activity provided the sharing of knowledge and experiences, as well as the expression and approach of doubts and difficulties among the participants[5].

Carrying out training in a safe and controlled environment, before providing the care itself, allows the identification and reconstruction of conducts, favors the development of professional safety and patient safety resulting from the reduction of adverse events, since some simulated critical situations may be faced in reality later[6]. In addition to developing technical skills, simulation allows crisis management, leadership, teamwork and clinical reasoning to be developed[7]. In addition, the use of simulation has the potential to expand participants' self-confidence in both the roles of actors and observers. In this sense, a research carried out with 44 nursing students in the south of the country identified that participation in simulation scenarios significantly increased the level of self-confidence in the learning of academics[8].

After the scenario was completed, the students were sent to the auditorium (observation room) to join the other participants who assumed the role of observers to carry out the debriefing. In the debriefing, the team that participated in the scenario was questioned by the teachers and other students about the evaluation of their performance, their thoughts and feelings during the simulation, as well as about the potential and limitations of the actions developed. They were also prompted to reflect on the application of the situation experienced in real life.

The students verbalized that they were initially disoriented in relation to "what to do" and, when they stopped, discussed and reflected, they were safer and were able to follow the recommended stages for the management of PPH. However, they stated that they considered their performance unsatisfactory and that the simulation provided reflection on how necessary the training, experience and repetition of their actions are for the development of clinical competence in nursing care.

Research that sought to verify the stress factors experienced by nursing students during academic training highlights that the fear of making mistakes during patient care, the feeling of having acquired little knowledge to take practical tests and the insecurity to carry out theoretical tests are stressors commonly present in the process of training the area[9]. These factors can affect everything from the learning process to professional performance. Furthermore, as observed in the students' speech about the learning experience through simulation practice in the context of this study, the use of simulation allows the critical reflection of the theoretical contents learned and the improvement of performance in the execution of clinical practice in nursing.

Another study that discusses the Health Systems and nursing competencies in Portugal states that the competencies necessary for the professional practice of nursing are based on the interpersonal relationship between the nurse and the individual subject and/or group, in decision making based on scientific evidence, in the clinic anchored in individual and/or collective health needs and in safe and resolutive nursing care[10]. Therefore, the use of simulation as a learning strategy in nursing education is a powerful tool

for the development of the aforementioned skills.

Regarding the use of simulation specifically in the theme selected for this study that built and validated a clinical simulation scenario for PPH, based on WHO guidelines, the insertion of this strategy is a novelty in the framework of teaching material in the area of nursing in Women's Health/Obstetrics, which enhances the teaching-learning process, as it strengthens the theory/practice relationship, stimulates critical and reflective thinking of students and enables the development of skills in the care of women with PPH[11].

Another important aspect of the experience was that the students who performed the role of observers, for the most part, reported that although they did not actively participate in the scenario, initially they felt apprehensive by their colleagues and many expressed feelings of anxiety for not being able to help them. They also verified the importance of experiencing practical situations through simulation for the development of care attitudes that are fundamental for the future exercise of nursing. For academics, such methodology should be incorporated in all disciplines in the training process, since it enabled the experience in practice of a situation seen only in theory and allows self-confidence to act in a real situation.

The simulation stands out mainly for the training of professional nurses, since for the development of their profile some practical skills are necessary, and this teaching strategy allows the reproduction of techniques in scenarios close to reality[12]. It is noteworthy that, in view of the scenario of reality proposed by the simulation, a reflective practice is promoted, the resignification of learning and knowledge construction processes, thus contributing to better acquisition of skills necessary for the training of health professionals[12].

The evaluation stage was carried out through the application of the following instruments: evaluation of the simulation design[13]; evaluation of satisfaction with the debriefing[14]; and students' self-confidence[15]. To assess the retention of knowledge, the post-test of theoretical knowledge was applied with the same questions applied at the beginning of the activity.

The evaluation, through the analysis of the instruments applied, showed students' satisfaction with the activity performed and its importance for the development of competencies and skills essential to the nursing professional. These results were also described in a study that evaluated the teaching-learning process in the realistic simulation environment of undergraduate nursing students and reaffirmed that health simulation is an instrument that favors and adds value to higher education in nursing[16].

Another research[17], which evaluated the use of realistic simulation in the maternal and child area with nursing students, through the design[13] and self-confidence[15] scales, points out a satisfactory evaluation of the students both with regard to the design of the scenario and the levels of self-confidence acquired with the activity. This result was identified both in less complex scenarios, such as prenatal care, and in more complex scenarios, such as resuscitation in the delivery room.

The results of the study point out the importance of the insertion and expansion of health simulation as a teaching practice in nursing training and in the context of coping with maternal mortality at the regional and national levels. In addition, the dissemination of initiatives that promote the development of education and professional improvement favors the advancement of the profession.

FINAL CONSIDERATIONS

This study sought to report the experience of using health simulation in undergraduate nursing education as an effective and innovative practice, supported by scientific evidence, in order to promote professional development to face a serious public health problem, maternal mortality due to postpartum hemorrhage.

Simulation-based teaching allowed students and teachers to reflect on the importance of adequate professional training to face obstetric clinical emergencies and that this technology is a powerful tool to promote the development of the skills necessary for the training of nurses. In addition, it made it possible for students to learn, through the recognition of errors and successes, in order to enable the understanding of the consequences of their actions based on the quality of care and patient safety.

The study was limited to the non-participation

of the multiprofessional health team, as foreseen by PAHO, being restricted to professors and undergraduate students in Nursing, nurse and laboratory technician.

SIMULAÇÃO EM SAÚDE NO MANEJO DA HEMORRAGIA PÓS-PARTO: RELATO DE EXPERIÊNCIA NO ENSINO EM ENFERMAGEM

RESUMO

Objetivo: descrever a experiência do uso da simulação em saúde no ensino de graduação em Enfermagem na situação de Hemorragia Pós-Parto. **Método:** estudo descritivo, do tipo relato de experiência, sobre a aplicação da simulação em saúde no ensino em Enfermagem com base na estratégia - Zero Morte Materna por Hemorragia Pós-Parto (0MMxH) da OPAS/OMS. A simulação foi realizada no primeiro semestre de 2020, com 15 discentes da Disciplina Sexualidade e Reprodução Humana, ministrada no sexto período do Curso de Graduação em Enfermagem de uma Universidade Federal do Centro-Oeste brasileiro. **Resultados:** o uso da simulação em saúde nesta experiência possibilitou a participação dos alunos de graduação em enfermagem em um cenário de hemorragia pós-parto, promovendo o desenvolvimento profissional por meio de vivência na prática clínica. **Conclusão:** a inserção de simulação em saúde no ensino promove o desenvolvimento de competências e habilidades importantes para a prática assistencial da enfermagem no contexto do cuidado às mulheres com quadros de hemorragia pós-parto.

Palavras-chave: Educação em Enfermagem. Treinamento por Simulação. Hemorragia Pós-parto.

SIMULACIÓN EN SALUD EN EL MANEJO DE LA HEMORRAGIA POSTPARTO: RELATO DE EXPERIENCIA EN LA ENSEÑANZA EN ENFERMERÍA

RESUMEN

Objetivo: describir la experiencia del uso de la simulación en salud en la enseñanza de pregrado en Enfermería en la situación de Hemorragia Postparto. **Método**: estudio descriptivo, del tipo relato de experiencia, sobre la aplicación de la simulación en salud en la enseñanza en Enfermería con base en la estrategia - Cero Muerte Materna por Hemorragia Postparto (0MMxH) de la OPAS/OMS. La simulación fue realizada en el primer semestre de 2020, con 15 estudiantes de la Asignatura Sexualidad y Reproducción Humana, ministrada en el sexto período del Curso de Pregrado en Enfermería de una Universidad Federal del Centro-Oeste brasileño. **Resultados**: el uso de la simulación en salud en esta experiencia posibilitó la participación de los alumnos de pregrado en enfermería en un escenario de hemorragia postparto, promoviendo el desarrollo profesional por medio de vivencia en la práctica clínica. **Conclusión**: la inserción de simulación en salud en la enseñanza promueve el desarrollo de competencias y habilidades importantes para la práctica asistencial de la enfermería en el contexto del cuidado a las mujeres en caso de hemorragia posparto.

Palabras clave: Educación en Enfermería. Entrenamiento por Simulación. Hemorragia Posparto.

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