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Sequential Clinical Simulation: construction and validation of scenarios on care for parturient and premature newborns

Simulação Clínica Sequencial: construção e validação de cenários sobre atendimento à parturiente e ao recém-nascido pré-termo

Simulación Clínica Secuencial: construcción y validación de escenarios sobre atención a las parturientas y al recién nacido prematuro

ABSTRACT
Objective: To develop and validate two scenarios for sequential clinical simulation about parturient and preterm newborn care with perinatal hypoxia. **Methodology:** Methodological study developed from August 2021 to August 2022, following the steps of Overview, Scenario, Scenario Design Progression, Debriefing, and Assessment. The evaluation by the 5 judges was done through the completion of a Likert scale containing 19 aspects. Content Validity Index (IVC) was calculated to verify scenario validation. **Results:** Two clinical simulation scenarios were developed, with an average fidelity and complexity, lasting 85 minutes each. The scenario was validated with a global IVC equal to 0,87. **Final remarks:** the scenarios and debriefing checklist were validated. This study proposes the use of Sequential Simulation in nursing education, allowing for the evaluation of the patient's clinical progression. It is expected that the product of this study becomes a teaching and professional qualification tool.
Descriptors: Simulation Training; Fetal Hypoxia; Infant, Premature; Obstetric Nursing; Neonatal Nursing.

RESUMO
Objetivo: Elaborar e validar dois cenários para Simulação Clínica Sequencial sobre atendimento à parturiente e ao recém-nascido pré-termo com hipóxia perinatal. **Metodologia:** Estudo metodológico, desenvolvido de agosto de 2021 a agosto de 2022, seguindo as etapas: Overview, Scenario, Scenario Design Progression, Debriefing e Assessment. A avaliação dos cinco juízes se baseou em uma escala likert contendo 19 aspectos. Calculou-se Índice de Validade de Conteúdo (IVC) para verificar se os cenários foram validados. **Resultados:** Foram elaborados dois cenários para simulação clínica com duração de 85 minutos, de média fidelidade e complexidade. Obteve-se um IVC global de 0,87. **Considerações finais:** Conclui-se que os cenários e checklist para debriefing foram validados. Este estudo propõe a utilização de simulação sequencial no ensino de enfermagem, que permite avaliar a evolução clínica do paciente. Espera-se que o produto do presente estudo se torne uma ferramenta de ensino e de qualificação profissional.
Descritores: Treinamento por simulação; Hipóxia fetal; Recém-nascido prematuro; Enfermagem obstétrica; Enfermagem neonatal.

RESUMEN
Objetivo: Elaborar y validar dos escenarios para simulación clínica secuencial sobre el cuidado a las parturientas y recién nacidos prematuros con hipoxia perinatal. **Metodología:** Estudio metodológico desarrollado de agosto de 2021 a agosto de 2022, siguiendo etapas: Overview, Scenario, Scenario Design Progression, Debriefing y Assessment. La evaluación de los 5 jueces se basó en una escala Likert que contenía 19 aspectos. Se calculó el Índice de Validez de Contenido (IVC) para verificar validación de los escenarios. **Resultados:** Se elaboraron dos escenarios para simulación clínica con una duración de 85 minutos, de media fidelidad y complejidad. El escenario fue validado con IVC global igual a 0,87. **Consideraciones finales:** Los escenarios y checklist de debriefing fueron validados. Este estudio propone una innovación para la simulación clínica (la simulación secuencial), que permite evaluar la evolución clínica del paciente. Se espera que el producto de este estudio se convierta en una herramienta de enseñanza y cualificación profesional.
Descriptores: Entrenamiento simulado; Hipoxia fetal; Recien nacido prematuro; Enfermería obstétrica; Enfermería neonatal.

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INTRODUÇÃO

A baby born alive before 37 weeks of gestation is considered premature. According to gestational age, they are classified as: extremely premature, those younger than 28 weeks; very premature, those born between 28 and 32 weeks; and moderate to late premature, those born between 32 and 36 weeks[1].

An estimated 13.4 million babies were born prematurely in 2020, representing more than one in ten babies. Approximately 900,000 children died in 2019 due to complications of premature delivery[1]. In Brazil, about 11% of births are premature[2]. According to the World Health Organization (WHO, 2024), 75% of neonatal deaths occur during the first week of life and about 1 million newborns die within the first 24 hours. Among newborns (NBs), the main causes of death include premature delivery, complications in delivery (asphyxia/trauma in delivery), neonatal infections and congenital anomalies[3].

Each labor has singularities that require specific approaches and care from the nurses. A premature birth, by itself, triggers in the parturient and in the family feelings of distress, despair, fear, guilt, impotence and sadness, which are even more exacerbated when associated with a complication, such as perinatal hypoxia. Therefore, it is important that the professional is qualified and sensitized regarding the humanization of care, with special attention to the emotional care of the parturients[4].

The recognition of physiological changes in the newborn and the decision-making carried out quickly and accurately are fundamental for effective neonatal resuscitation, which is essential to reduce the mortality of neonates with perinatal asphyxia. In this context, the role of nursing is of paramount importance from the delivery process to neonatal and puerperal care, with agile clinical reasoning, establishment of priorities and skills focused on creating a bond with the mother and family, offering comfort, security and information about the baby[5,6]. However, studies show the lack of information among nurses on the subject and the need to update themselves through continuing education, in order to improve the quality and effectiveness of care for these professionals in neonatal resuscitation[7].

In recent decades, educational institutions have sought innovations in teaching methodologies, in order to improve learning, based on innovative methods and promoters of collective collaboration. Clinical simulation has been gaining prominence in the teaching-learning process, as it allows the development of skills in a protected environment, where one has the opportunity to test knowledge, experiencing simulated clinical cases. The association of the traditional teaching method with clinical simulation proves to be effective for better fixing the theoretical knowledge taught in the classroom, as well as for the development of other skills related to professional posture. The use of validated simulated scenarios allows students to repeat nursing care until their performance is satisfactory in relation to the techniques employed, nurse-patient communication and between nurses and other team members, professional posture, among other skills[8,9].

The use of clinical simulation in teaching is already well established and has been improving over time. Noting that the simulated scenario requires a defined time for realization, researchers realized that

this limitation implied compartmentalizing student learning[10,11]. Nursing education is based on a holistic view of the human being and the continuity of care 24 hours a day. In this sense, the sequential simulation methodology allows the students to observe the evolution of the patient's health status[12]. Sequential Clinical Simulation (SCS) aims to approach realistic simulation scenarios in a way that allows a complete understanding of the evolution of the patients' case and reflects their journey in the health system, improving learning about continuity of care[11-13].

Given the frequency of premature deliveries, perinatal hypoxia and the restricted workload of practical activities of the nursing course in health units, most students cannot experience such a clinical situation in real practice. Thus, we address the importance of developing this theme in simulated activities to bring the students closer to the theme, to train a qualified professional with humanistic skills, safe and with good emotional control to work in the labor market. In addition, the simulation allows the professional qualification of nurses who already work in care, but who need to be constantly updated to be able to offer quality care [13-15].

Given the above, the objective of this study was to develop and validate two scenarios for Sequential Clinical Simulation on care for parturients and premature newborns with perinatal hypoxia.

METHOD

This is a methodological study, following the stages proposed by the method of Gilbert and Adamsom (2016)[16], based on recommendations of the International Nursing Association for Clinical Simulation and Learning (INACSL)[17]: Overview, Scenario, Scenario Design Progression, Debriefing and Assessment. This methodology includes the stages for scenario elaboration and validation.

The Overview consisted of choosing the theme for the elaboration of the scenarios, according to a clinical development justification, as well as the definition of their objectives, organizational, educator and learning needs and skills and/or competencies to be worked on in the simulation related to the assistance to premature labor and the newborn in need of neonatal resuscitation.

The Scenario consisted of the elaboration of the scenarios based on a solid theoretical basis [1,18-20], with a relevant clinical case and environment close to the reality of assistance to spontaneous premature labor in the Obstetric Center.

The Scenario Design Progression consisted of preparing the simulation event plan, such as defining the roles, writing the scripts and defining the necessary materials appropriate to the objectives proposed in the first stage.

Debriefing is a central element in simulation. This stage consisted of the elaboration of a specific checklist to assist the teacher in conducting the debriefing during the teaching activity, in order to obtain the maximum potential for improving learning. The debriefing instrument was developed according to the Promoting Excellence and Reflective Learning in Simulation (PEARLS) methodology[21], which recommends that there be an objective for debriefing, a moment of exploration of students' feelings in the scenario and an analysis based on defined performance domains. It is important to remember that all debriefing dialogue is student-centered.

And, finally, the Assessment corresponded to the evaluation of the judges and validation of the scenario based on the analysis of the documents produced throughout all the previous stages.

The first four stages corresponded to the elaboration of the scenario and the checklist. The fifth stage, on the other hand, consisted of the validation itself. Validation in online format was chosen due to the covid-19 pandemic. The first four stages were developed from August 2021 to May 2022, and the validation stage from June to August 2022.

Invitations were sent to 27 experts, of whom five accepted to participate in the study. The experts were selected by searching the Lattes® Platform and invited via e-mail. The inclusion criterion for participation in the study was obtaining at least four points in the Scoring System for the Selection of Judges, adapted from Goes et al. (2014)[22], considering training, professional performance and scientific production. Each level of degree generated one point and each segment of professional activity generated two points. In the results, it is possible to observe a table with the judges' scores (Table 1). It was considered an exclusion criterion for professionals away from care or teaching for two years or more, as it is understood that recent scientific updates of professional knowledge are fundamental for the evaluation of the scenario.

After the acceptance of the judges, signaled by e-mail, the documents referring to the stages of preparation of the scenarios, the checklist and an instrument to characterize the profile of the participants were sent. The evaluation took place by completing an instrument in Google Forms® containing a Likert scale with 19 evaluated aspects. Each aspect contained four alternative responses: totally inadequate; inadequate, but can be reformulated; adequate with minor adjustments; and totally adequate. In addition, in any response other than "totally adequate", suggestions for improvements were requested.

After obtaining the data, the Content Validity Index (CVI) was calculated in Microsoft Excel® software, version 2016. For the analysis of the CVI obtained, the objective was a minimum CVI of 0.80[23]. The only alternative that scored positively for the CVI calculation was "fully adequate".

The data related to the profile of the judges were expressed as mean and standard deviation, when the variables were continuous symmetric; and as median and interquartile range, when the variables were continuous asymmetric. The numerical variables were expressed as absolute and relative frequencies.

The study was approved by the Ethics Committee of the institution of origin under CAAE number 03107418.5.0000.8093, and the assumptions of Resolution number 466/12 of the National Health Council were strictly followed.

RESULTS

The scenarios elaborated refer to a 27-year-old parturient, with 35 weeks and six days of gestation, admitted to the Hospital Obstetric Center, in the company of her husband, in spontaneous premature labor. She has a history of pregnancy loss (37 weeks) due to a car accident about two years ago. Until the initial moment of assistance in the scenario, the amniorrhexis had not occurred and the parturient showed an extremely shaken emotional state.

For the first scenario, it is important to emphasize that one of the main objectives is to develop empathy and awareness skills regarding the humanization of care in the face of premature delivery, in addition to developing routine active labor management activities, based on scientific evidence. With the birth of the baby, the second scenario begins, whose main objective is to develop the technical skills related to neonatal resuscitation, according to the Resuscitation Protocol of the Brazilian Society of Pediatrics (2021)[18], in addition to developing routine care in the delivery room with the puerperal woman and the NB. Table 1 presents the scenarios elaborated in a summarized way.

It is important that, before carrying out the simulation, the educator works in the classroom on the theoretical contents on active labor assistance, routine care in the delivery room with the puerperal woman and the NB and neonatal resuscitation, so that students can achieve the proposed learning objectives.

Box1 – Summary of the elements of the scenarios entitled "Nursing care in the face of premature birth with perinatal hypoxia", Brasília, 2022.

Learning Objectives	Scenario 1: to develop empathy and awareness skills regarding the humanization of care in the face of premature delivery, in addition to developing routine active labor management activities, according to scientific evidence. Scenario 2: to develop the technical skills related to neonatal resuscitation, according to the Resuscitation Protocol of the Brazilian Society of Pediatrics (2021)(18) and conduct the immediate puerperium with the puerperal woman.
Complexity	Medium
Fidelity	Medium
Duration	85 minutes (briefing: 5min; scenario 1:20 min; scenario 2:20 min; debriefing: 40min).
Participants	Four students who will play nurses: two in the first scenario and two in the second. Five actors in the following roles: pregnant woman; companion; hospital nursing technician; obstetrician; pediatrician.
Brief clinical case	J.O.P, 27 years old, admitted to the Obstetric Center with signs of labor. DLM: should be provided to the student when the pregnant woman is 35 weeks and six days gestational age on the day of the simulation. At screening, the following vital signs and anthropometric measurements were found: HR: 91 bpm; BP: 130 x 80 mmHg; RR: 19 ipm; Saturation: 99%; Weight: 73 kg; Height: 1.63 m, data that are already described in the pregnant woman's booklet. Note: The actress uses the following devices: belly compatible with the gestational period, breast and perineum prostheses.
Scenario 1 **Physical examination of the pregnant woman.**	Gravid abdomen, UH: 31 cm; FHB: 153 bpm; longitudinal fetal position with back to the mother's left and cephalic presentation; active fetal movements; UD: 4/10; uterine contractions with medium intensity and duration of approximately 60-70 seconds. When performing a digital examination, nurses will note cervical dilation of 7 cm, 90% effaced cervix, De Lee plane 0 and left occiput posterior position (OPP). Assessment of the presence of edema: extremities with good perfusion and presence of edema 2+/4+ in the lower limbs, absence of varicose veins.

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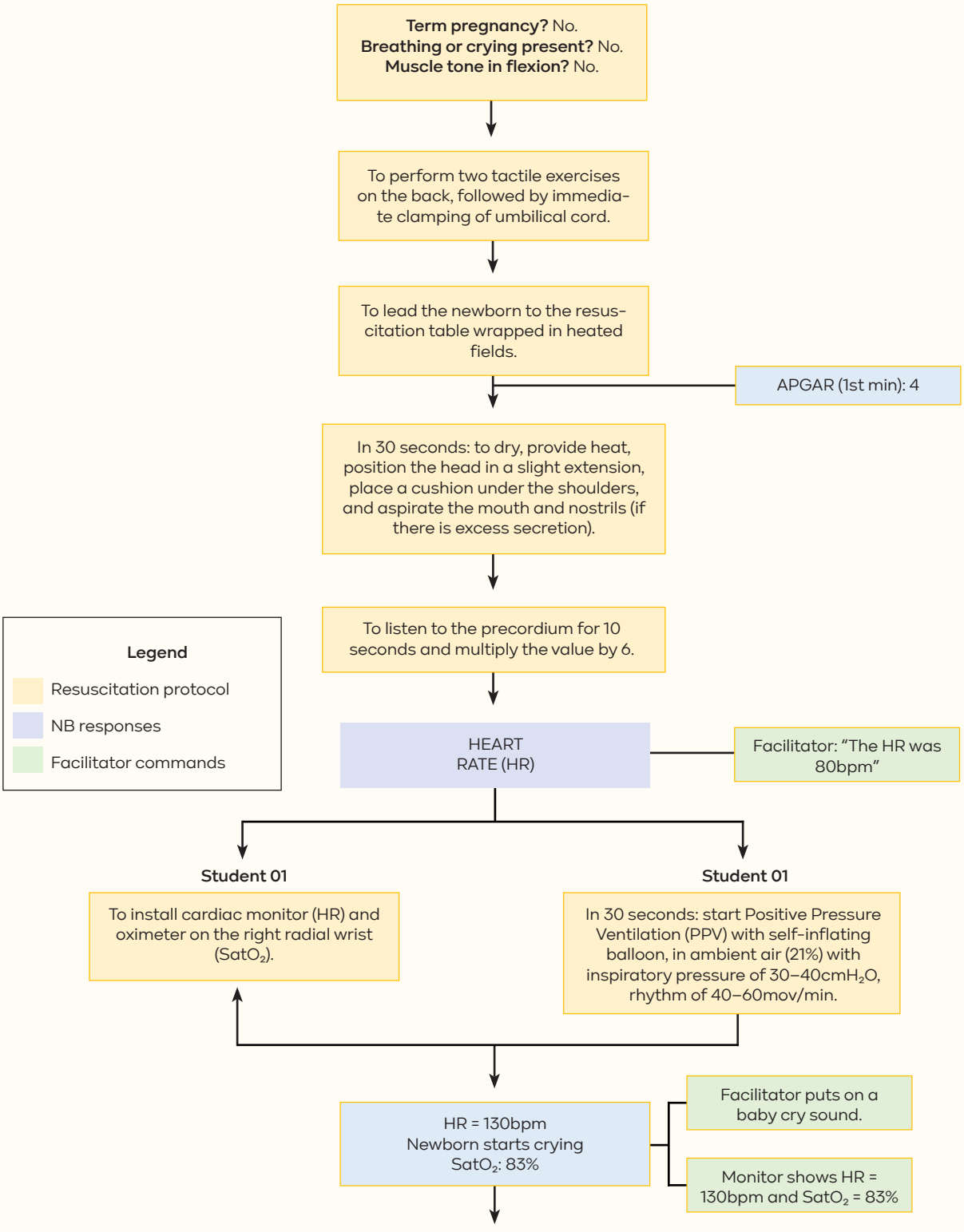
Scenario 2

Newborn development



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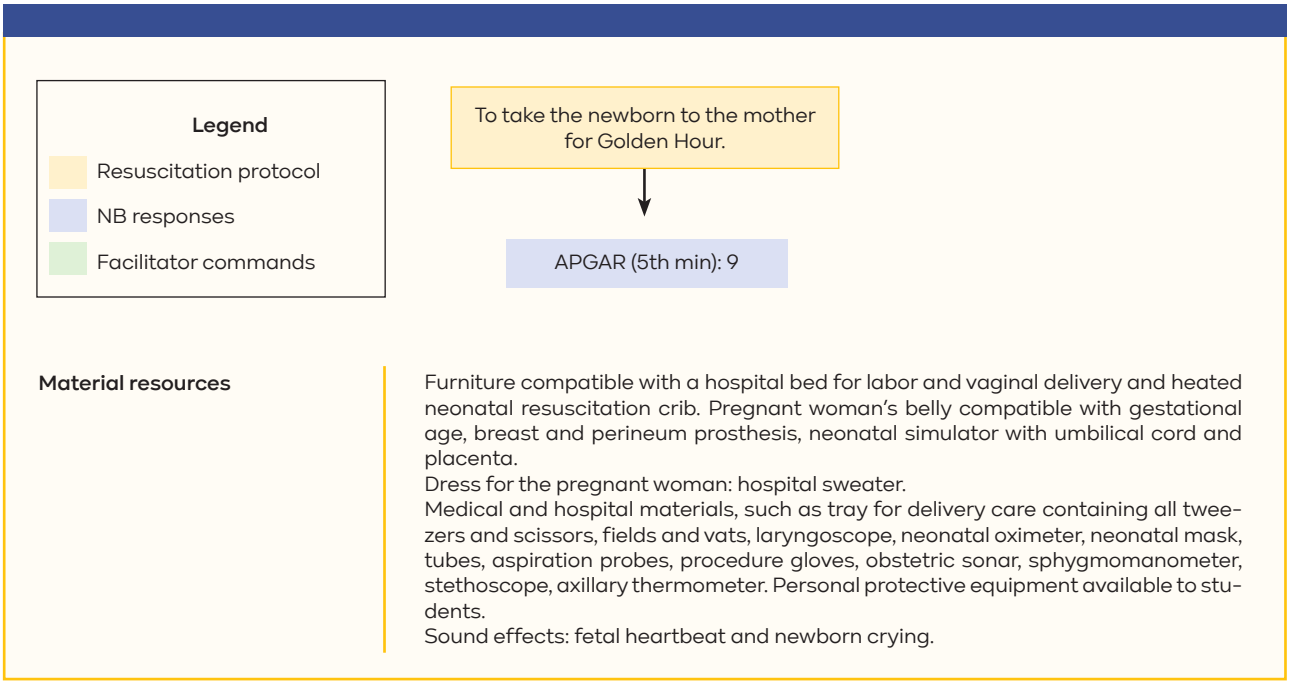
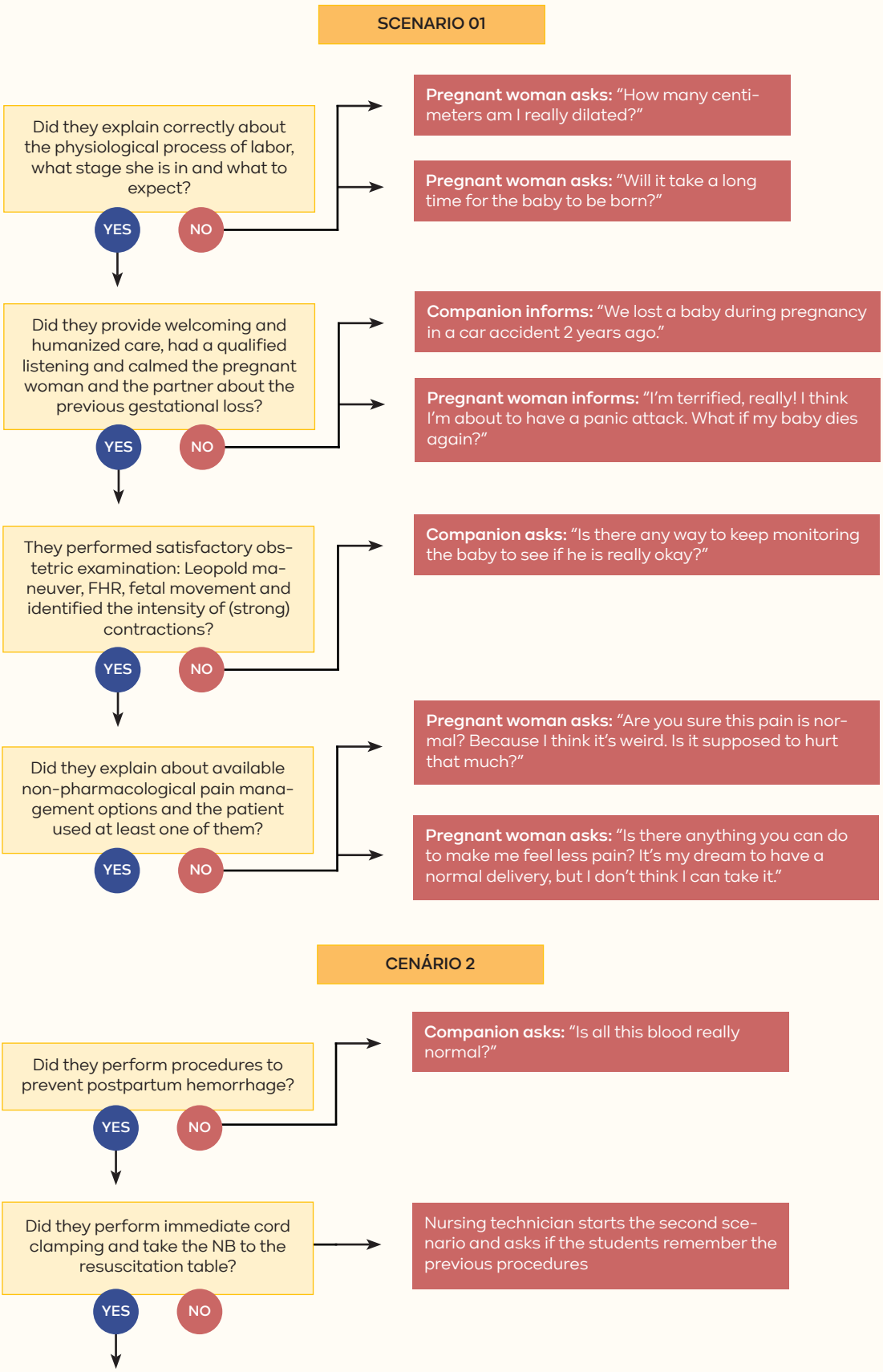


DLM = Date of Last Menstruation; HR = Heart Rate; BP = Blood Pressure; RR = Respiratory Rate; UH = Uterine Height; FHB = Fetal Heartbeat; UD = Uterine Dynamics.
Source: Prepared by the authors.

The flowchart proposed for neonatal resuscitation care was prepared so that the conduction of the scenarios is standardized, containing the responses presented by the baby in the scenario from the actions performed by the students inserted in the scenario. As students perform nursing care, the facilitator informs the parameters of the newborn so that they can make the next decisions. Parameters related to the mother throughout the scenario will also be informed by the facilitator.

According to the International Nursing Association for Clinical Simulation and Learning[17], it is important to use facilitating methods before, during and after simulation. To fulfill this objective, a Decision-Making Tree was elaborated, represented in Figure 1. The purpose of the Decision Tree is to provide directions that the actors and facilitator can give to the students during the development of the scenarios, when they cannot perceive the situation, making it possible to continue the care. This instrument is in the hands of the facilitator in the execution of the scenario and is known to the actors before the simulation.

Figure 1. Decision Making Tree – Brasília, 2022


SCENARIO 01
Did they explain correctly about the physiological process of labor, what stage she is in and what to expect?
YES
NO
Pregnant woman asks: "How many centimeters am I really dilated?"
Pregnant woman asks: "Will it take a long time for the baby to be born?"
Did they provide welcoming and humanized care, had a qualified listening and calmed the pregnant woman and the partner about the previous gestational loss?
YES
NO
Companion informs: "We lost a baby during pregnancy in a car accident 2 years ago."
Pregnant woman informs: "I'm terrified, really! I think I'm about to have a panic attack. What if my baby dies again?"
They performed satisfactory obstetric examination: Leopold maneuver, FHR, fetal movement and identified the intensity of (strong) contractions?
YES
NO
Companion asks: "Is there any way to keep monitoring the baby to see if he is really okay?"
Did they explain about available non-pharmacological pain management options and the patient used at least one of them?
YES
NO
Pregnant woman asks: "Are you sure this pain is normal? Because I think it's weird. Is it supposed to hurt that much?"
Pregnant woman asks: "Is there anything you can do to make me feel less pain? It's my dream to have a normal delivery, but I don't think I can take it."
CENÁRIO 2
Did they perform procedures to prevent postpartum hemorrhage?
YES
NO
Companion asks: "Is all this blood really normal?"
Did they perform immediate cord clamping and take the NB to the resuscitation table?
YES
NO
Nursing technician starts the second scenario and asks if the students remember the previous procedures

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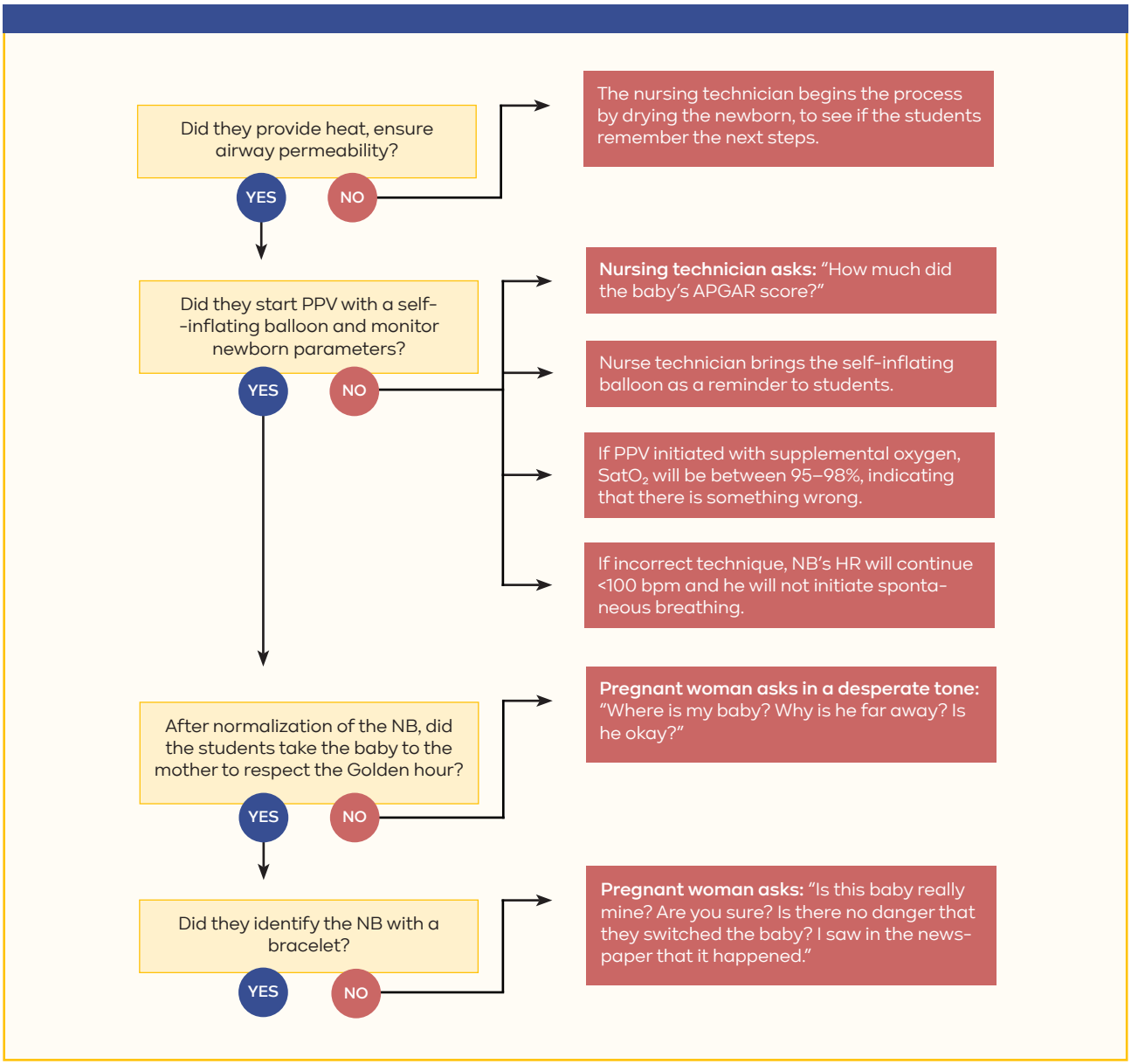

Source: Prepared by the authors.

The evaluative checklist, created to guide the debriefing, was structured in five topics: posture; guidelines; actions taken with the postpartum woman; actions taken with newborn; and suggestions for questions for the facilitator to start debriefing. For each evaluated item, there are four response options: not performed; Inadequate; Partially Adequate; Adequate. In Table 2, checklist for debriefing is displayed.

Box 2 - Skills and knowledge checklist – Brasília, 2022

Checklist of skills and knowledge expected from students	NP	In	PA	Ad
Posture				
They presented themselves informing names and function in the unit for the parturient and companion.				
They presented a humanized posture, welcoming and effective communication between professional and patient.				
They presented work organization with establishment of priorities and good division of tasks during the service.				
They performed emotional management with the pregnant woman and her companion throughout the service.				
They performed hand hygiene before and after contacting the patient.				
Used correct Personal Protective Equipment in all procedures performed.				
Guidelines				
During labor				
They explained the physiological process of delivery and what stage the woman in labor is in.				
They guided the woman in labor on free walking and exercises to help the baby descend during labor.				
They advised on non-pharmacological pain management options and used at least one. They guided the woman in labor on free walking and exercises to help the baby descend during labor.				
During delivery and postpartum				
They informed the state of the NB and its evolution.				
They advised the family on the importance of not removing the identification bracelet while they are hospitalized.				
They provided general guidance to the parturient and the companion on puerperal care.				
Condutas realizadas com a puérpera				
The parturient and companion were asked if they had a delivery plan to follow.				
They underwent a complete obstetric physical examination (Leopold maneuver, fetal heartbeat (FHB), evaluation of fetal movement and uterine dynamics).				
They identified amniorrhexis and evaluated the amniotic fluid.				
They recognized the beginning of the expulsive period and offered more comfortable positions to the pregnant woman.				
They performed the conducts to prevent puerperal hemorrhage (administration of intramuscular oxytocin, uterine massage to check the safety globe, evaluation of vaginal bleeding).				
They performed the evaluation of the vital signs of the puerperal woman.				
Conducts carried out with the NB				
They requested the presence of the pediatrician in a timely manner.				
They identified the need for resuscitation in the NB (premature pregnancy, absence of breathing and absence of muscle tone).				
They performed immediate clamping of the umbilical cord and took the NB to the resuscitation table.				
They measured the NB's APGAR score in the first and fifth minutes of life.				
They performed adequate monitoring of vital signs (installed cardiac monitor and pulse oximeter).				
On the resuscitation table with the NB, they provided care according to the Brazilian Society of Pediatrics (BSP) Neonatal Resuscitation Protocol (provide heat, position the head in a slight extension, place a cushion under the shoulders, vacuum if deemed necessary, dry; evaluate the initial measures; started PPV with the correct technique).				
They encouraged skin-to-skin contact in the first hour of life, explained the importance of the golden hour and assisted in the first breastfeeding of the NB.				
They identified the NB and placed a bracelet on his wrist and ankle.				
Suggestions for questions for the facilitator to start the debriefing: How did you feel about the clinical case? What were the positive aspects of your performance, in your opinion? After this experience, if you came across this scenario again, what would you do better or different? What were the greatest difficulties in relation to the knowledge required to participate in this scenario? After the golden hour, what guidance on puerperal care would you give to the patient?				

NP = Not performed; In = Inadequate; PA = Partially adequate; Ad = Adequate.
Source: Prepared by the authors.

After the construction of the scenarios and the checklist, the scenario was validated by experts in the area of Maternal and Child Health and realistic simulation was carried out. The points obtained by the judges in the Scoring System for the Selection of Judges are shown in Table 1.

Table 1. Score obtained by the study judges in the Scoring System for the Selection of Judges – Brasília, 2022

Description of scored items	Score	Judges				
		1	2	3	4	5
Title						
PhD in Nursing.	1	-	-	1	1	1
Master in Nursing.	1	1	1	1	1	1
Expert in Hospital Nursing.	1	-	1	1	-	1
Expert in Maternal and Child Care	1	-	1	1	1	-
Professional experience in healthcare						
Hospital area: Obstetric and Neonatology Center	2	-	2	2	-	2
Primary care: Women's and/or pediatric health	2	-	-	-	-	-
Teaching Professional Experience:						
Hospital area: Obstetric and Neonatology Center	2	2	2	2	-	2
Primary care: Women's and/or pediatric health	2	2	-	-	2	-
Research Development/Orientation						
Urgent and emergency nursing in neonatology and/or gynecology and obstetrics	2	-	2	2	-	2
Maternal and child health nursing (women's health, neonatology or pediatrics)	2	2	2	2	2	2
Publication						
Article, book or chapter on nursing care in maternal and child care (women's health, neonatology or pediatrics)	2	2	2	2	2	2
Article, book or chapter on simulation in nursing education	2	-	-	2	2	-
Total		**9**	**13**	**16**	**11**	**13**

Source: Produced by the authors.

Table 2 presents data related to the profile of the judges, evaluating items such as specialization, professional performance, experience with realistic simulation and publications on the subject.

Table 2 – Characterization of the study judges – Brasília, 2022.

	N	%
Idade (anos)*	**36,80 ± 6,91**	
Age (years)*		
Nursing degree	5	100
Graduate Degrees		
Specialization	3	60
Master	5	100
PhD	3	60
Professional activity		
Assistance	3	60

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Idade (anos)*	N 36,80 ± 6,91	%
Teaching Graduate student	5 1	100 20
Experience Time (years) §	13,4 (6,0 – 20-0)	
Simulation Experience		
Professor Researcher Providing training	4 3 1	80 60 20
Participation as a judge previously Experience time with simulation*	2 5,0 ± 1,8	40
Publications in the area of maternal and child health	5	100
Publications on realistic simulation	2	40

*Values expressed as mean ± standard deviation.
§Values expressed as median and interquartile range.
Source: Prepared by the authors.

The CVI calculation considered the percentage of responses "totally adequate" for the 19 items evaluated. It is observed that the study achieved a mean CVI of 0.87, sufficient for the scenarios to be considered validated (Table 3). This value of 0.87 reflects that in 87% of the answers there was agreement between the judges.

Table 3. Judges' evaluation of the scenario "Nursing care in the face of premature birth with perinatal hypoxia" – Brasília, 2022

Assessed Items	Totally inadequate		Inadequate but can be redone		Adequate with minor adjustments		Totally adequate		CVI
	N	%	N	%	N	%	N	%	
Plausibility of the clinical case	-	-	-	-	-	-	5	100	1,0
Adherence to available scientific evidence	-	-	-	-	2	40	3	60	0,6
Clinical case according to guidelines from the Ministry of Health and the Brazilian Society of Pediatrics	-	-	-	-	1	20	4	80	0,8
Adequacy of the clinical case to the needs of the educator Adequacy of the clinical case to the learning objectives	-	-	-	-	-	-	5	100	1,0
Realism	-	-	-	-	-	-	5	100	1,0
Information provided to students prior to simulation	-	-	-	-	1	20	4	80	0,8
Case description	-	-	-	-	-	-	5	100	1,0

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Assessed Items	Totally inadequate		Inadequate but can be redone		Adequate with minor adjustments		Totally adequate		CVI
	N	%	N	%	N	%	N	%	
Data provided to the students during the simulation (Decision-Making Tree)	-	-	-	-	-	-	5	100	1,0
Support provided to the students during the simulation	-	-	-	-	-	-	5	100	1,0
Promoting the ability to prioritize nursing assessments and interventions	-	-	-	-	1	20	4	80	0,8
Promotion of autonomous problem solving	-	-	-	-	1	20	4	80	0,8
Quantitative of actors for scenario performance	-	-	-	-	-	-	5	100	1,0
Quantitative of students inserted in the scenario	-	-	-	-	-	-	5	100	1,0
Characterization of the pregnant woman in the scenario (devices)	-	-	-	-	-	-	5	100	1,0
Simulator/actress parameters consistent with the clinical case	-	-	-	-	1	20	4	80	0,8
Simulated environment	-	-	-	-	2	40	3	60	0,6
Materials and equipment available to students	-	-	1	20	-	-	4	80	0,8
Aspects evaluated in the debriefing	-	-	-	-	2	40	3	60	0,6
Medium CVI									**0,87**

Source: Produced by the authors.

In view of the suggestions of the judges in the topics that received less than 0.8 CVI, the following changes were made in the scenarios: change from the term "respiratory distress" to "signs of need for resuscitation in the delivery room" in the topic of technical knowledge and conducts of the description of learning needs to students; update of the Neonatal Resuscitation Protocol to the 2021 version; new lines were added to the script of the pregnant woman at the time of admission to the Obstetric Center, further emphasizing her emotional state shaken, in order to make even more evident the importance of emotional management for students; the Essential Conduct of Scenario 1 included the performance of adequate obstetric evaluation and the management of active labor, respecting the autonomy of the parturient and based on scientific evidence; the APGAR Index of the NB in the fifth minute was changed from eight to nine points due to the clinical description of the newborn in the scenario; The HR of the NB after neonatal resuscitation was

changed from 105 bpm to 130 bpm, with the objective of enabling the golden hour and evaluating whether the students will identify the importance of this moment; medicines and supplies necessary for administration were added, if the students deemed it necessary, contributing to the realism of the scenario.

In the evaluation checklist for conducting the debriefing, the suggestion was to include guiding questions to address, in order to assess what guidelines related to postpartum care that students would carry out after the golden hour.

DISCUSSION

In the training of nurses, issues must be worked in order to train a qualified professional, with humanistic skills and abilities, critical, reflective, safe, with good communication and leadership[13,14]. In this sense, clinical simulation is presented as a teaching strategy that stimulates the active participation of students in all stages of the teaching-learning process, giving students the opportunity to make mistakes without compromising patient safety, redo procedures, discuss interventions, consolidate theoretical-practical knowledge and develop social skills, such as patient-professional and professional--professional communication, teamwork, collaboration, critical thinking, among others[15]. In addition, in order to have safe and complex scenarios, it is recommended that, after the construction of the scenario, it be validated by experts on the subject, which guarantees its integrity[24,25].

Sequential Clinical Simulation proposes the insertion of students in different scenarios elaborated from a single clinical case. In a study developed in London, a clinical case of asthma attack was proposed in a student at school, and in the following scenarios, this same patient is assisted in the ambulance and in the hospital. At the end, a single debriefing is held, reflecting the performance at all times[11].

In the present study, a similar methodology was proposed, however, due to the emotional pressure experienced by the students in the simulation, the scenario elaborated proposes the insertion of different students in each scenario, reducing the student's time of performance and focusing on fewer objectives. However, in order to work on learning the clinical evolution of the patient, we propose that students be present watching their colleagues in the anterior/posterior scenario. Thus, they also optimize care, appropriating the clinical case when assisting colleagues. As in the British study[11], at the end of all scenarios, a single debriefing is held on the performance of all students in all scenarios.

In the sequential simulation, the scenarios are experienced in sequence, addressing different moments of the clinical situation. In the scenario validated in this study, there are two scenarios; however, others can be elaborated, if the proposed clinical situation allows it and if this is the facilitator's objective. What differentiates sequential simulation from classical clinical simulation is the possibility of working with the student on the continuity of nursing care and reducing the fragmentation of care in simulated activities. In addition, it exercises the training of the multidisciplinarity of the functions, an important characteristic of development among future nursing professionals, thus allowing the understanding of the process to be learned satisfactorily[10,11]. Thus, it becomes clearer to the student the needs of the

patient and the integrality of care. This method allows the organization of students in a care that is more faithful to reality, developing teamwork and effective communication among team members. Therefore, the product of this study will bring new possibilities for nursing education in Brazil.

When there is the advent of a premature delivery, the mother and the family experience feelings of distress, despair, fear, guilt, impotence, sadness, anxiety and even, in some cases, postpartum depression, due to the breaking of expectations between the idealized delivery and the baby and the real situation[4]. In this context, the professional who provides care must adopt a welcoming posture, with involvement, availability, responsibility, empathy and sensitivity. Therefore, in addition to clinical care, students need to pay attention to the emotional state of the parturient and pay special attention to the history of pregnancy loss. It is essential that they develop comprehensive, humanized, sensitive and empathetic care[26,27]. The present scenario aims to develop these skills together with the teacher in a safe environment.

After birth, the continuing scenario also addresses the need for neonatal resuscitation, with a focus on assessing students' technical skills. Effective neonatal resuscitation is essential to reduce neonatal mortality due to neonatal asphyxia. The qualification of nursing professionals in neonatal resuscitation through simulation promotes the development of more competent professionals, which is essential for quality care in an emergency scenario[7,28].

It is important to highlight that this theme is of great value to nurses, considering that, in the face of neonatal resuscitation, these professionals work using technical-scientific knowledge, autonomy in care, potential to recognize the clinical responses of the NB and the ability to conduct interventions synchronously. A recent study[7], which analyzed 16 studies on factors that influence neonatal resuscitation, concluded that the lack of training and knowledge about neonatal physiology by nurses are important limitations that reflect on the quality and effectiveness of care of these professionals. Continuing education focused on neonatal resuscitation is a necessary demand among these professionals; thus, the scenario validated in this study can contribute to future professional qualification. In the field of nursing, simulation is proven to be an effective training and qualification strategy, as nurses, students and teachers have the opportunity to improve their skills, to be evaluated and to develop a reflective attitude about their actions[25,29].

These data reflect the importance of realistic simulation scenarios that address the topic of neonatal resuscitation, aiming to qualify and update nursing, in order to provide adequate care to newborns and their families. Thus, it is possible to achieve an effective result in a timely manner.

No validation studies of scenarios in the context of nursing care for premature labor with neonatal hypoxia were found in the literature. In the field of maternal and child health, scenarios related to other themes have already been validated, namely: "Nurses' conduct in the face of latent labor in prenatal consultations", validated with a CVI of 1.0[23]; "Prenatal care in the third quarter of pregnancy"[25]; and "Nursing consultation in reproductive planning", validated with a CVI of 0.98[29].

The limitations of the study were the impossibility of carrying out the validation in face-to-face format, due to the covid-19 pandemic, as well as the non-performance of a pilot test because of the difficulties of the moment. In addition, with the online validation format, it is understood that the scenario was subject to difficulty in visualizing the occurrence of events and, as a result, some suggestions became unfeasible. With the low adherence of the judges, since of the 27 invitations sent only five judges agreed to participate, another important limitation to be highlighted was the impossibility of a second round of validation after the corrections made in the scenarios based on the suggestions of the judges.

FINAL CONSIDERATIONS

It is concluded that the study achieved the proposed objectives, since the scenario and the checklist obtained the appropriate CVI value in the validation process. The suggestions proposed by the judges resulted in scenarios that were more faithful to reality.

It is expected that the product of the present study will become a teaching tool for nursing students and professional qualification for nurses who already work in care, enabling the development of skills necessary for the assistance to premature labor to be carried out in the most humane and welcoming way possible. Sequential simulation is also expected to become popular as a teaching method in nursing so that nursing care is more qualified.

CONSIDERAÇÕES FINAIS

Conclui-se que o estudo alcançou os objetivos propostos, uma vez que o cenário e o checklist obtiveram o valor de IVC adequado no processo de validação. As sugestões propostas pelos juízes resultaram em cenários mais fiéis à realidade.

Espera-se que o produto do presente estudo se torne uma ferramenta de ensino para os discentes de enfermagem e de qualificação profissional para os enfermeiros que já atuam na assistência, possibilitando o desenvolvimento de habilidades necessárias para que a assistência ao trabalho de parto prematuro seja realizada da maneira mais humanizada e acolhedora possível. Espera-se também que a simulação sequencial se popularize como método de ensino em enfermagem para que o cuidado de enfermagem seja mais qualificado.

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