








## ORIGINAL ARTICLE

## CONSTRUCTION AND VALIDATION OF A CLINICAL SIMULATION ON HIV TESTING AND COUNSELING IN PREGNANT WOMEN

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### ABSTRACT

**Objective:** to construct and validate a clinical simulation scenario on rapid HIV testing and counseling in pregnant women. **Method:** methodological study, of appearance and content validation, developed between June and October 2020 through the Delphi technique. For validation, the judges who obtained five or more points according to the adapted Fehring criteria were included. The data were analyzed by calculating the Content Validity Index (CVI). **Results:** After the first Delphi round, two items (5.7%) did not reach the I-CVI required for validation in all the criteria evaluated, which were: behavioral, objectivity, simplicity, clarity, relevance, accuracy, variety, modality, typicality, and credibility. At the end of the second Delphi round, all items (100%) reached the I-CVI required for validation. **Conclusion:** the script proved to be valid, contributing to subsidize the teaching of HIV testing and counseling of pregnant women.

**DESCRIPTORS:** Teaching; Educational Technology; Pregnancy Complications, Infectious; HIV; Simulation Technique.

### HOW TO REFERENCE THIS ARTICLE:

Melo MS, Llapa-Rodriguez EO, Bispo LDG, Andrade JS de, Barreiro M do SC, Resende LT de, Rodrigues IDCV. Construction and validation of a clinical simulation on hiv testing and counseling in pregnant women. *Cogitare Enferm.* [Internet]. 2022 [accessed "insert day, month and year"]; 27. Available from: [dx.doi.org/10.5380/ce.v27i0.86935](https://dx.doi.org/10.5380/ce.v27i0.86935)

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## INTRODUCTION

The Human Immunodeficiency Virus (HIV) represents a public health problem due to its high incidence, mortality, and costs to public services<sup>1</sup>. This problem is accentuated when it comes to infection in pregnant women, especially because of the need to prevent vertical transmission, which must occur during labor, birth, or postpartum<sup>2</sup>.

In Brazil, 125,144 pregnant women obtained positive HIV testing between the years 2000 and 2019. Of these, 35% of transmissions occurred during pregnancy, 65% at delivery, and seven to 22% in the puerperium through breastfeeding<sup>2</sup>. The rapid HIV test is an efficient diagnostic measure, essential for the prevention of vertical transmission, which can contribute to the quality of health care and life of the mother-child binomial. In addition, interventions during prenatal care have an impact on the reduction of vertical transmission, such as the use of antiretroviral drugs, non-breastfeeding counseling, and the like<sup>3</sup>.

As for HIV diagnosis, not only is vertical transmission a concern, but also the impact of a positive HIV diagnosis on the quality of life of pregnant women, due to the possible physical, psychological, and social consequences typical of the diagnosis<sup>4</sup>. Therefore, this moment demands competencies, skills, and attitudes from health care professionals, from rapid testing to counseling of these patients. Therefore, it is essential that the professionals who perform these services are trained to offer a systematic and holistic care, according to the subjectivity of each pregnant woman<sup>5</sup>.

A strategy that can help in the training of these professionals is the use of clinical simulation, since it is a widely used teaching-learning tool that can be used in several areas of health<sup>6</sup>. Simulated practice is the reproduction of real environments based on previously developed scenarios, allowing the development of technical and non-technical skills in a controlled and safe environment<sup>7</sup>.

Among the benefits linked to simulation, the following stand out: improving the ability to perform procedures, stimulating teamwork, and encouraging critical and reflective thinking<sup>6-8</sup>. These benefits positively impact the quality of the learning process<sup>8</sup>. Thus, the technique can be useful in routine nursing activities, such as health education for pregnant women, development of skills in prenatal consultations, and the like, in order to contribute to quality care<sup>9-10</sup>.

In the context of teaching how to care for patients with HIV, the use of simulation has proven to be appropriate for training students for professional practice. Therefore, the use of a simulated strategy to teach a wide range of procedures is effective in developing knowledge, ensuring learner satisfaction, and improving the care provided by health professionals to HIV patients<sup>11</sup>. From this perspective, the construction of a clinical simulation scenario on HIV testing and counseling of pregnant women is useful for the development of professional competence in nursing.

Regarding simulation scenarios about pregnant women, there are no productions associated with HIV. In this context, the following question was raised: what are the necessary elements to compose a clinical simulation scenario focused on rapid testing and counseling of pregnant women for HIV? Given the lack of simulated scenarios on this theme, the objective of this study is to build and validate a clinical simulation scenario on rapid testing and counseling for HIV in pregnant women.

## METHOD

This is a methodological study, conducted between June and October 2020, for content and appearance validation using the Delphi technique<sup>12</sup>.

For an adequate basis for the construction of the scenario, an integrative review of the proposed theme was conducted through the following guiding question: "What are the characteristics of prenatal consultations for offering the rapid test for HIV to pregnant women? The review was carried out using the MEDLINE, CINAHL, LILACS, and BDNF databases with the following controlled descriptors: "pregnant women"; "prenatal care"; "clinical laboratory techniques"; "diagnosis"; "prenatal diagnosis"; "primary health care", and "HIV", organized with the help of the Boolean operators OR and AND, and without a time frame. We included original articles about prenatal visits to offer rapid HIV testing to pregnant women, published in Portuguese, English or Spanish. After applying these criteria, 10 articles were selected.

To guide the construction of the scenario, we used Jeffries' methodological reference<sup>13</sup>, which suggests a clinical simulation construction pattern as a teaching strategy, based on five areas: objectives, fidelity, complexity, clues, and debriefing<sup>13</sup>. The objectives were: to improve the knowledge, skills, and attitudes of the student to perform rapid testing and counseling for HIV in pregnant women, to foster in the student the ability to communicate effectively for the rapid test for HIV reactivity, to exercise clinical reasoning on HIV counseling pre-test and post-test for pregnant women, to demonstrate technical skill in puncturing the digital pulp, and to stimulate reflection on ethical attitudes before the care.

A clinical case was integrated into the simulation, in which a pregnant woman came to her prenatal appointment for a rapid HIV test: You are a nurse in a basic health unit in the city of Lagarto/SE. A pregnant woman has just arrived and informs you that she received her first prenatal appointment yesterday. However, the nurse that attended her asked her to come back today, that is, on the same day, since one of the exams was pending. Take care of the pregnant woman.

It was determined that an actress with the same age as the pregnant woman in the clinical case, wearing a fake belly, carrying a maternity card and wearing a light and loose dress would play the pregnant woman in the scenario. A script was created to guide the actress' activities during the execution of the scenario. It informs the characteristics necessary for the development of the actress in the scenario as well as the information of clues to be executed, with the ideal of helping in the development of the simulation. To make the activity operational, the necessary materials for the care of the case patient were made available, as well as the adaptation of the classroom to mimic the nursing office.

The debriefing, in this scenario, was structured according to the GAS (Gather, Analyze and Summarize) model which is composed of three phases: the first (gather) summarizes the events of the simulation, the second (analyze) promotes the participants' reflection, and the third (summarize) reviews the key points of the discussions<sup>14</sup>.

After building the scenario, we proceeded to the validation process using the Delphi technique, a systematized method that seeks the consensus of experts on a given theme through multiple rounds<sup>15</sup>. In this research, two rounds were conducted until the judges reached consensus. The same judges were invited to participate in both rounds. Ten judges participated in the first round. Of these, nine judges remained in the second round.

In this validation, the judges who obtained five or more points according to the adapted Fehring criteria were included: being a doctor in nursing (four points); being a master in nursing (three points); having completed a dissertation or thesis on clinical simulation/women's health (one point); having experience (care or academic) of at least one year in the use of clinical simulation/women's health (two points); having an article

published in an indexed journal in the area of clinical simulation/women's health (two points); being a specialist in women's health (one point)<sup>15</sup>. The sample was non-probabilistic by convenience through a search of the researchers' curriculum on the Lattes Platform and the selection of judges with the help of the Snowball Sampling strategy<sup>12</sup>.

To start the virtual rounds, each judge was sent the Informed Consent Form, a script of the simulation scenario to be validated, and an instrument to verify agreement, subdivided into 35 items<sup>16</sup>. To represent the numerical items, a three-point Likert-type scale was used, subdivided into: one - inadequate (item needs to be deleted or redone), two - partially adequate (pertinent item, but some change is needed), and three - adequate (correct item without the need for any kind of addition or correction). The aforementioned items were assessed according to their relevance and in relation to the following criteria: behavioral, objectivity, simplicity, clarity, relevance, accuracy, variety, modality, typicality, and credibility<sup>17</sup>.

Os dados foram tabulados no programa Microsoft Excel/ Windows (Office 2016) e analisados no software R Core Team 2020, versão 3.6.1. Para a caracterização da população do estudo, realizou-se estatística descritiva simples. Para a validação do cenário, realizou-se o cálculo do Índice de Validade de Conteúdo por meio de três equações matemáticas: I-CVI (Item-Level Content Validity Index), S-CVI/Ave (Scale-Level Content Validity Index/Average) e S-CVI/UA (Scale-Level Content Validity Index/Universal Agreement).

Data were tabulated in Microsoft Excel/Windows (Office 2016) and analyzed using the software R Core Team 2020, version 3.6.1. Simple descriptive statistics were used to characterize the study population. To validate the scenario, the Content Validity Index was calculated using three mathematical equations: I-CVI (Item-Level Content Validity Index), S-CVI/Ave (Scale-Level Content Validity Index/Average) and S-CVI/UA (Scale-Level Content Validity Index/Universal Agreement).

In this study, the I-CVI was calculated based on the division between the number of "three - adequate" scores and the total number of answers for each item according to the criteria evaluated; the S-CVI/Ave was calculated by calculating the mean of the I-CVI for each criterion evaluated; and the S-CVI/UA was calculated according to the proportion of items that reached a "three - adequate" score in the evaluation by all judges. A minimum proportion of 80% agreement was determined for the items to be considered validated<sup>17</sup>. The binomial test was performed with a 5% significance level to verify if the agreement was equal or higher than 80%.

The present study was approved by the Research Ethics Committee of the Federal University of Sergipe, according to Opinion No. 3.826.601.

## RESULTS

In the first Delphi round, the scenario items were submitted to content and appearance validation by a committee formed by 10 judges, nine nurses (90%) and one physician (10%). Seven were female (70%), with a mean age of the committee of 39 years (SD = 5.6), mean length of professional training 13.8 years (SD = 4.2). Four had postdoctoral training (40%), seven had participated in validation research (70%), and three had specialization in women's health (30%). All had published scientific articles in the areas of interest of this research in indexed journals (100%), eight in clinical simulation (80%) and five in women's health (50%). At the end of the first round, two items (5.7%) did not reach the I-CVI required for validation in all the criteria evaluated. Suggestions were made both for the items that did not reach consensus and for those that did. Adjustments were made to the entire scenario, which was submitted to a new evaluation cycle until consensus was established. The recommendations were as follows: increase the briefing duration from 10 minutes to

15 minutes, change the gestational age of the clinical case patient from three weeks to 10 weeks, and remove the information from the case regarding the statement "patient has systemic arterial hypertension and family history of diabetes and neoplasia", as well as general modifications in the scenario writing.

The items that did not obtain I-CVI > 0.8 were: "item two - simulation time: briefing duration"; and "item 18 - information provided for the execution of the scenario: information from the medical record". In the second round, nine judges participated, eight of whom were nurses (88.9%) and one physician (11.1%). Six were female (66.7%), the average age of the committee was 39 years (SD = 7.3), average time of professional training was 14.0 years (SD = 4.4), four had a post-doctoral degree (44.4%), seven had already participated in validation research (77.8%) and three had specialization in women's health (33.3%). All had published scientific articles in the areas of interest of this research in indexed journals (100.0%), seven in clinical simulation (77.9%) and five in women's health (55.6%).

At the end of the second round, the I-CVI was greater than 0.8 in all items assessed, and for amplitude and balance it was 1.0 (p-value = 1.0). For each of the criteria, the S-CVI/Ave was greater than 0.8, and the proportion of items judged as adequate in the assessment by all judges (S-CVI/UA) was at least 0.8 (Table 1).

Table 1 - Levels of agreement obtained by the Content Validity Index during the second Delphi round according to the evaluation of the group of experts. Aracaju, SE, Brazil, 2020

	Behavior	Objectivity	Simplicity	Clarity	Relevance	Accuracy	Variety	Modality	Typicality	Credibility
Item	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)	I-CVI (p-value*)
Item 01	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 02	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 03	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)
Item 04	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)
Item 05	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)
Item 06	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 07	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 08	1.00 (1.000)	0.89 (0.768)	1.00 (1.000)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 09	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 10	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 11	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 12	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)

Item 13	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 14	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 15	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 16	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 17	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 18	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)
Item 19	0,89 (0,768)	0,89 (0,768)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)
Item 20	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 21	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 22	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)
Item 23	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 24	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	0,89 (0,768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 25	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 26	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 27	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	0.89 (0.768)	0.89 (0.768)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 28	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 29	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)	1,00 (1,000)
Item 30	1.00 (.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1,00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 31	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 32	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 33	1.00 (1.000)	0.89 (0.768)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 34	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
Item 35	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)	1.00 (1.000)
S-CVI-AVE	0.99	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	0.98
S-CVI-UA	0.89	0.80	0.86	0.83	0.80	0.80	0.94	0.94	0.91	0.86

Legend: I-CVI - Item-Level Content Validity Index, S-CVI - Scale-Level Content Validity Index, Ave - Average. UA - Universal Agreement.

\*Binomial Exact Test.

Source: Authors (2021).

## DISCUSSION

Given the complexity of dealing with the positive results of rapid HIV tests for pregnant women, a clinical simulation scenario was built on this theme as an improvement strategy for active teaching in the health field.

In order to improve the scenario, it was validated by judges specialized in the topic that, after being assessed, made recommendations to improve the scenario. The suggestions issued by the judges were related to the scenario duration, clinical case information, previous knowledge, learning objectives, interventions expected by the student, script, environment, clues, and briefing and debriefing structure.

Regarding the duration of the scenario, the suggestion to adjust the period for execution according to the objectives and complexity was raised by the judges, being considered as a requirement for a good simulation practice. Other studies evidenced that the scenario duration must be in accordance with the learning objectives to be achieved and the scenario complexity level, depending on what is required from the participant during the simulation, such as procedural skills, critical thinking, decision-making capacity or clinical reasoning<sup>19-20</sup>.

Because of the changes in the duration for scenario execution, the briefing and debriefing times needed to be adjusted so that they were performed in half and twice the scenario execution time, respectively. A research that discussed the practical aspects of clinical simulation showed that the duration of the briefing and debriefing is essential to ensure the use of the simulated activity, while another research that analyzed the contributions of simulation in the training of advanced practice in nursing indicated the importance of the simulation time being sufficient to present the guidelines for the development of the scenario, the execution of the whole scene, discussion, analysis, and reflection on the simulation<sup>21-22</sup>.

Regarding the clinical case, it was necessary to remove information about comorbidities as an alternative not to divert the participant from the learning objectives. Research conducted at a public university in southern Brazil showed the importance of focusing on the objective, so that the participant could perform well during the scenario, have a more comfortable experience, and deepen reflections during the debriefing<sup>23</sup>.

Also, regarding the clinical case information, the patient's gestational age was changed, to ensure greater realism to the simulation. The concern with the degree of realism of the scenario was also presented in another study, which stated that one of the requirements for the success of the simulation was to be as close as possible to reality, so that the participant could experience the practice he or she would encounter<sup>24</sup>.

Regarding the interventions expected by the academic, the judges' assessment pointed to the need to increase the integration between the interventions and the checklist for scenario monitoring. A study that sought to show the most relevant aspects, according to the literature, for the development of simulation scenarios highlighted that the interventions expected by the student should be made available according to the development of the other interventions performed by him/her during the scenario. It was also emphasized that all interventions should be clearly described in the script, to direct the facilitators to the simulation center team and the actors<sup>25</sup>.

Regarding the Script, personal, sociodemographic and clinical information was complemented. Such information is necessary for the social determination of HIV in order to stimulate critical/reflective thinking in the debriefing. They can be requested by the participant during the simulation in order to raise the degree of realism of the scenario. A study conducted in the mid-west of the country, which sought to report the experience in the use of clinical simulation, showed that bringing the scenario closer to reality is necessary

for the success of the simulation<sup>24</sup>. Thus, the presence of this information can ensure greater realism and, consequently, a better performance of the simulated activity.

As for the environment, all the characteristics that were not described in the item "physical resources" were specified in a specific topic. A study conducted with undergraduate nursing students highlighted the need for the scenario script to describe all the characteristics of the environment necessary to perform the scenario<sup>26</sup>.

It is emphasized that a full description of the environment in the simulation scenario script is essential, to direct the presentation of the environment to the participants during the briefing. Guidance to participants about the simulated environment and the resources available during the simulation is seen as good practice. Therefore, it is necessary that the participants are enlightened<sup>22</sup>.

As for the clues, they were organized according to the possible actions of the students during the development of the scenario. A study that reported the construction of clinical simulations according to the National League for Nursing/Jeffries Simulation Framework model emphasized the importance of considering the level of experience and learning of the participants to determine the clues that help achieve the proposed objectives<sup>27</sup>.

Regarding the debriefing, another study pointed out its importance as a tool to promote critical and reflective thinking by the participant<sup>21</sup>. Thus, as a strategy to improve the reflections in the debriefing, as well as to optimize the briefing time, there was a need to relocate the objectives, which were no longer presented in the briefing and started to be used in the debriefing, being an alternative to get a better use of the discussions about the scenario.

Regarding the study's limitations, it is noteworthy that the scenario was not applied due to the social distancing measures adopted during the COVID-19 pandemic, which may have repercussions in the future on the need to further understand its operationalization, regarding the need for post-application adjustments and/or critical analysis of the scenario, typical of debriefing. Thus, the application will be conducted in future research to reflect the experience of the target audience during the execution of the simulation.

## CONCLUSION

The study made it possible to validate the simulation scenario script, which was shown to be valid and reliable in content and appearance by expert judges in clinical simulation and/or women's health.

As a contribution, the script of the clinical simulation scenario may subsidize the teaching of HIV testing and counseling of pregnant women, since its use will favor the teaching-learning process and the development of competencies and skills in undergraduate nursing students.

We highlight the social relevance of this work regarding the appropriate health care for pregnant women with HIV. The application of this scenario in teaching environments is encouraged, aiming at the construction of the ideal of breaking the prejudice as well as the training of a humanized conduct for the management of pregnant women with such diagnosis.



## REFERENCES

01. Maranhão TA, Alencar CH, Magalhães M de AFM, Sousa GJB, Ribeiro LM, Abreu WC de, et al. Mortalidade pela síndrome da imunodeficiência adquirida e fatores sociais associados: uma análise espacial. Rev Bras Enferm [Internet]. 2020 [acesso em 27 fev 2022]; 73(5). Disponível em: <https://www.scielo.br/j/reben/a/KtDh5ZsfwRjmNgg3tpq54rB/?format=pdf&lang=pt>.
02. Silva CTL, Vasconcelos KP, Alves HB. Perfil epidemiológico de gestantes portadoras de HIV/AIDS no Brasil. Revista Interdisciplinar em saúde [Internet]. 2021 [acesso em 27 fev 2022]; 8. Disponível em: [https://www.interdisciplinaremsaude.com.br/Volume\\_29/Trabalho\\_09\\_2021.pdf](https://www.interdisciplinaremsaude.com.br/Volume_29/Trabalho_09_2021.pdf).
03. Ministério da Saúde. Gestação de alto risco: manual técnico. 5. edição. 2012 [acesso em 27 fev 2022]. Disponível em: [https://bvsmms.saude.gov.br/bvs/publicacoes/manual\\_tecnico\\_gestacao\\_alto\\_risco.pdf](https://bvsmms.saude.gov.br/bvs/publicacoes/manual_tecnico_gestacao_alto_risco.pdf).
04. Cabral J da R, Ramos YT de M, Cabral L da R, Moraes DC de A, Bushatsky M, Oliveira RC de. Qualidade de vida e fatores associados em pessoas vivendo com HIV/AIDS. Cogitare Enferm. [Internet]. 2018 [acesso em 18 nov 2020]; 23(2). Disponível em: <http://dx.doi.org/10.5380/ce.v23i2.54742>.
05. Colares KTP, Oliveira W de. Metodologias ativas na formação profissional em saúde: uma revisão. Rev Sustinere. [Internet]. 2018 [acesso em 11 nov 2019]; 6(2). Disponível em: <http://dx.doi.org/10.12957/sustinere.2018.36910>.
06. Negri EC, Mazzo A, Martins JCA, Pereira Junior GA, Almeida RG dos S, Pedersoli CE. Clinical simulation with dramatization: gains perceived by students and health professionals. Rev. Latino-Am. Enfermagem. [Internet]. 2017 [acesso em 17 nov 2020]; 25. Disponível em: <https://doi.org/10.1590/1518-8345.1807.2916>.
07. Filho CKC, Meska MHG, Machado GCC, Franzon JC, Mano LY, Mazzo A. Empathy of nursing students in a simulated clinical activity. Cogitare Enferm. [Internet]. 2020 [acesso em 05 nov 2020]; 25. Disponível em: <http://dx.doi.org/10.5380/ce.v25i0.68142>.
08. Costa RR de O, Medeiros SM de, Martins JCA, Cossi MS, Araújo MS de. Percepção de estudantes da graduação em enfermagem sobre a simulação realística. Rev Cuidarte. [Internet]. 2017 [acesso em 28 set 2020]; 8(3). Disponível em: <https://doi.org/10.15649/cuidarte.v8i3.425>.
09. Nascimento FC do, Araújo APF, Viduedo A de FS, Ribeiro LM, Leon CGRMP de, Schardosim JM. Validação de cenário para simulação clínica: consulta de enfermagem no pré-natal par adolescente. Rev Bras Enferm [Internet]. 2022 [acesso em 27 fev 2022]; 75(3). Disponível em: <https://www.scielo.br/j/reben/a/mNrNwwBws64Mvk3k4vMgzFN/abstract/?lang=pt>
10. Nunes HFSS, Kato KTF, Moreira MC, Fernandes CO, Santana LV de P e S, Jarcem KG, Freitas SLF de. A simulação como estratégia de educação em saúde com gestantes. Perspectivas experimentais e clínicas, inovações biomédicas e educação em saúde [Internet]. 2018 [acesso em 27 fev 2022]; 4(2). Disponível em: <https://desafioonline.ufms.br/index.php/pecibes/article/view/6966/0>.
11. Ghazali DA, Choquet C, Casalino E. Simulation-based training for triage of HIV exposure in the emergency department. Med Educ. [Internet]. 2019 [acesso em 17 nov 2020]; 53(5):521-22. Disponível em: <https://doi.org/10.1111/medu.13862>.
12. Polit DF, Beck CT. Fundamentos de pesquisa em enfermagem: avaliação de evidências para a prática da enfermagem. 7. ed. Porto Alegre: Artmed, 2011.
13. Jeffries PR. A framework for designing, implementing, and evaluating simulations used as teaching strategies in nursing. Nurs. educ. perspect. [Internet]. 2005 [acesso em 12 nov 2020]; 26(2):96-103. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/15921126/>.
14. Sawyer T, Eppich W, Brett-Fleegler M, Grant V, Cheng A. More than one way to debrief: a critical review of healthcare simulation debriefing methods. Simul Healthc. [Internet]. 2016 [acesso em 04 nov 2020]; 11(3):209-17. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/27254527/>.
15. Fehring RJ. Methods to validate nursing diagnoses. Heart Lung. [Internet]. 1987 [acesso em 03 nov 2020]; 16(6):625-9. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/3679856/>.

16. Instrumento para validação do cenário e itens do cenário. Disponível em: <https://drive.google.com/file/d/1by9cmGGy7Nc73iTNQjDVoHBMCmNOTQlj/view?usp=sharing>.
17. Biernacki P, Waldorf D. Snowball sampling: problems and techniques of chain referral sampling. *Sociol Methods Res* [Internet]. 1981 [acesso em 11 nov 2020]; 10(2). Disponível em: <https://doi.org/10.1177/004912418101000205>.
18. Pasquali L. Instrumentação psicológica: fundamentos e práticas. Porto Alegre: Artmed; 2010.
19. Yusoff MSB. ABC of content validation and content validity index calculation. *Education in Medicine Journal*. [Internet]. 2019 [acesso em 15 nov 2020]; 11(2):49-54. Disponível em: <https://doi.org/10.21315/eimj2019.11.2.6>.
20. Ribeiro V dos S, Garbuio DC, Zamariolli CM, Eduardo AHA, Carvalho EC de. Simulação clínica e treinamento para as práticas avançadas de enfermagem: revisão integrativa. *Acta paul. enferm.* [Internet]. 2018 [acesso em 10 nov 2020]; 31(6). Disponível em: <https://doi.org/10.1590/1982-0194201800090>.
21. Kaneko RMU, Lopes MHB de M. Realistic health care simulation scenario: what is relevant for its design? *Rev. esc. enferm. USP*. [Internet]. 2019 [acesso em 18 nov 2020]; 53. Disponível em: <https://doi.org/10.1590/s1980-220x2018015703453>.
22. Neves FF, Pazin-Filho A. Construindo cenários de simulação: pérolas e armadilhas (Developing simulation scenarios: pearls and pitfalls). *Sci Med*. [Internet]. 2018 [acesso em 16 nov 2020]; 28(1). Disponível em: <https://dialnet.unirioja.es/servlet/articulo?codigo=6268085>.
23. Oliveira SN de, Massaroli A, Martini JG, Rodrigues J. From theory to practice, operating the clinical simulation in Nursing teaching. *Rev. Bras. Enferm.* [Internet]. 2018 [acesso em 10 nov 2020]; 71(4). Disponível em: <http://dx.doi.org/10.1590/0034-7167-2017-0180>.
24. Sousa NP de, Lima JS, Epaminondas JM, Nunes E do CS. Ensino baseado em simulação: experiência no ensino de primeiros socorros em curso técnico. *Revista Eixo*. [Internet]. 2018 [acesso em 16 nov 2020]; 7(2). Disponível em: <http://revistaeixo.ifb.edu.br/index.php/RevistaEixo/article/view/623>.
25. Bellaguarda ML dos R, Knih N da S, Canever BP, Tholl AD, Alvarez AG, Teixeira G da C. Simulação realística como ferramenta de ensino na comunicação de situação crítica em cuidados paliativos. *Esc Anna Nery*. [Internet]. 2020 [acesso em 10 nov 2020]; 24(3). Disponível em: <http://dx.doi.org/10.1590/2177-9465-ean-2019-0271>.
26. Silva JLG, Oliveira-Kumakura AR de S. Clinical simulation to teach nursing care for wounded patients. *Rev Bras Enferm*. [Internet]. 2018 [acesso em 14 nov 2020]; 71(4). Disponível em: <http://dx.doi.org/10.1590/0034-7167-2017-0170>.
27. Houzé-Cerfon CH, Boet S, Saint-Jean M, Cros J, Vardon-Boune F, Marhar F, et al. Effect of combined individual-collective debriefing of participants in interprofessional simulation courses on crisis resource management: a randomized controlled multicenter trial. *Emergencias*. [Internet]. 2020 [acesso em 18 nov 2020]; 32(2):111-7. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/32125110/>.

\*Article extracted from the master's/PhD thesis "Construção e validação de um cenário de simulação clínica sobre testagem e aconselhamento para o HIV em gestantes", Universidade Federal de Sergipe, São Cristóvão, SE, Brasil, 2020.

Received: 07/04/2021

Approved: 02/03/2022

Associate editor: Tatiane Herreira Trigueiro

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ISSN 2176-9133



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