

Simulation for the development of clinical competence in risk assessment for pressure ulcer

Simulação para desenvolvimento da competência clínica de avaliação de risco para úlcera por pressão

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Keywords

Nursing education; Pressure ulcers;
Nursing assessment; Simulation;
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Descritores

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Abstract

Objective: To analyze the perception of undergraduate nursing students on simulation strategies in the teaching-learning process for developing competence in risk assessment for pressure ulcers.

Methods: Descriptive study with qualitative analysis done with 29 final-year undergraduate nursing students. Data were collected during debriefing by focus group after the simulation scenario and were then analyzed by Bardin's technique, resulting in five categories and their respective thematic register units.

Results: The strategy facilitated reasoning of the undergraduate students during the simulation scenario (action), developing students' critical thinking about competence, identifying learning gaps, promoting satisfaction among the students, and improving professional self-image.

Conclusion: The simulation strategy develops the competence in risk assessment for pressure ulcers in all their dimensions: knowing (knowledge); knowing-doing (skills); and wanting to act, knowing-acting, and ability to act (attitudes).

Resumo

Objetivo: Analisar a percepção de graduandos em enfermagem sobre a estratégia de simulação no processo de ensino-aprendizagem para o desenvolvimento da competência avaliação de risco para úlcera por pressão.

Métodos: Estudo descritivo com análise qualitativa, desenvolvido com 29 estudantes de enfermagem do último ano do curso. Os dados foram coletados durante *debriefing* por grupo focal, após cenário de simulação e analisado pela técnica de Bardin, originando cinco categorias e respectivas unidades de registro temáticas.

Resultados: A estratégia foi capaz de resgatar o raciocínio operativo dos graduandos durante a execução do cenário de simulação (ação), desenvolvimento de pensamento crítico-reflexivo sobre a competência, identificação de lacunas de aprendizagem, promoção da satisfação aos estudantes e melhoria da autoimagem profissional.

Conclusão: A estratégia de simulação desenvolve a competência avaliação de risco para úlcera por pressão em todas as suas dimensões: saberes (conhecimento), fazeres (habilidades) e querer-agir, saber-agir e poder-agir (atitudes).

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Introduction

The teaching strategy using clinical simulation for nursing and health promotes the development of safety and quality competencies. Competence results from a combination of knowledge (knowing), skills (knowing-doing), and attitudes (wanting to act, knowing-acting, and ability to act).⁽¹⁾

Knowledge of prevention and treatment of pressure ulcers is considered basic content for nursing education.⁽²⁾ The management of a damaging condition is a health quality indicator; this requires daily exercise of competence in risk assessment for pressure ulcers.

Simulations are planned to reproduce the clinical environment to be experienced by students.⁽³⁾ The NLN/Jeffries simulation model consists of five conceptual components and their respective variables: facilitators (clinical experience, demographics), participants (program, level and age), educational practice (active learning, feedback, collaboration, expectations), characteristics of simulation drawing (objectives, fidelity, support to students, and debriefing), and results of simulation (knowledge, performance/skills, satisfaction and critical thinking).^(3,4)

The debriefing variable is essential for all types of simulation, including low, moderate, and high fidelity. This variable occurs after the scenario and provides a link between theory and practice. The final objective is to promote reflexive thinking and support students in transferring competence in the simulated environment to patient care.⁽⁵⁾

The development of critical-reflexive thinking has been focalized since the elaboration of manuals describing debriefing phases; the organization and approach of professors during the post-scenario experience;⁽⁶⁾ the literature review highlighting the origin, objectives, structural elements, models of conducting the debriefing, and the professor's role. Debriefing is the simulation's "heart and soul."⁽⁷⁾ Like an investigator in the legal realm, the professor's role is that of a "cognitive detective."⁽⁸⁾

Researchers have suggested that more studies are needed to provide evidence for the integration

of guided reflection into the simulation strategy or clinical experience.^(3,9)

Dewey's reflective thinking can be applied to the debriefing phase. This approach has five stages for envisioning the problem and the solution: suggestion (how the problem was identified and immediately resolved), intellectualization (definition of the real problem in the situation), hypothesis formulation (measurement of solution to the problem identified), reasoning (applied solution and its proof; provocation, reflecting upon and refining of mental exercise of the proposed solution) and hypothesis (hypothesis of tested resolution).⁽¹⁰⁾

Simulation provides an experience based on experimental learning principles grounded by reflective management. Debriefing is the reflective stage during which students are stimulated to develop new knowledge, perceptions, and mental representations; through such reflection, students will be able to use the actions performed during the simulation to guide their future clinical judgment.⁽¹¹⁾

This aim of this study was to analyze the perception of undergraduate nursing students on the simulation strategy in the teaching-learning process for developing competence in risk assessment for pressure ulcers.

Methods

This descriptive study with qualitative analysis was conducted in the Simulation Laboratory of Clinical Practice in Nursing and Health at the Universidade Federal do Piauí, Teresina, in the northeast region of Brazil.

A total of 29 final-year undergraduate nursing students participated in the study. The single inclusion criterion was to be a final-year undergraduate student. Participants came from two higher-education institutions (public and private).

Data were collected during debriefing after a class on competence in risk assessment for pressure ulcers and the clinic simulation scenario. Teaching activities developed were based on international recommendations for pressure ulcer prevention, from which we selected and elaborated a set of in-

formation, skills, and attitudes needed to achieve the mentioned competence. In the scenario, a high-fidelity manikin simulator (SimMan®, version 3.2, Laerdal, Barueri, Brazil; operated by computer software) was used.

Students were randomly divided into seven groups classified by the letters A to G. Data collection, which lasted 30 minutes, was done by using the focal group technique with semi-structured questions. Each student received an identification number containing a letter and a number (E1 to E29).

Data were analyzed using Bardin's content analysis technique. Transcribed interviews were registered according to a simple frequency counter that included words, synonyms, and roots; the "find word" shortcut (CTRL + L) for Microsoft Word 2010 (Microsoft, Redmond, Washington) was used. The word most mentioned was "patient"

(113 mentions). To define categories and thematic register units, word groups that corresponded to gross text codification around the word "patient" were related.

Material was submitted to thematic analysis of core meaning, which resulted in five categories and the respective registers and context units (charts 1, 2, and 3) that resulted from data aggregation, insofar as constituted messages reflected the aim and hypothesis of the research. The register units were defined by word frequency that reflected the message theme, according to category. Context units were cut by phrases and/or paragraphs that corresponded to the message segment for exact comprehension of register units generated for each category.

Development of this study followed national and international ethical and legal aspects of research on human subjects.

Results

Chart 1. Categories, register and content units resulting from data aggregation

Category 1 – Description of problem perceived in clinical case	
Register units	Context units
Patients' clinical conditions	Meaningful responses from group B (17.2%): "Patient transferred from emergency hospital, post-operative laminectomy in T7 [...] individual could not feel his legs, had stage I ulcer in sacral region, and presented with anxiety [...] he had a family history of ulcer [...] concerned spouse". In group F (13.8%), it was necessary to help the group as a whole to describe the clinical case
Relationship between nurse and patient/family	Student concerns related to the case were emphasized in 51.72% of responses "[...] worried spouse [...] we've gotten a bit lost: attention to accompanying person and patient [...] he was a patient who really doesn't appear to be a patient [...]" (E3-E5, E8, E10, E14, E15, E17, E19, E22-E26)
Category 2 – Immediate perception on competence exercises	
Register units	Content units
Risk factors	Students identified the problem immediately after reading the case: "Dependent patient [...] without mobility, restricted [...] bedridden" (E1-E29). Groups C, D, and G (31.0%) emphasized factors subjacent to immobility (44.8%) as "location of surgical site" and "positioning".
Approach, registers, and available resources	Immediately identified difficulties were emphasized. Groups D, F, and G (41.3%): "Lack of nursing records from the other service". Groups F and G (20.6%) said, "We had to complete the nursing records".
Category 3 – Situations/identified problems: intellectualization and solutions	
Register units	Context units
Identified problems	After contact with the scenario concerning identification of the problems, 65.5% kept the focus on immobility: "The patient does not have lower-limb movements [...] [is] bedridden [...] [has] paresis [...] and immobility" (E1-E8, E10, E11, E14-E17, E24, E26, E28, E29). Related problems were identified: injury, weight, accompanying person, pressure ulcer

Continue...

Continuation

Prioritized problems	Students pointed out the problem that they acted on. Group A: "prioritized accompanying person and patient mobility". Group C: "We acted more effectively to calm down patient's spouse than to treat the patient". Groups E and G: "[We asked] the accompanying person [...] to give information, orientations [...] on the pressure ulcer and its cause." Groups B and D: "[...] visualization of scars, [...] general physical examination and skin evaluation [...]". Group G: "Ulcer site"
Solutions	Reporting on procedures adopted. Group A (17.2%): "Mobility [...] we explained that it will occur progressively [...]". Group B (17.2%): "What we did most was to evaluate the skin [...]". Groups C, E, and F (37.9%) concentrated more on calming down the accompanying person. Best management was seen in group F (13.8%). Groups D and G (27.5%) concentrated on moving the patient: "It was hard [...] it is a movement that should be done by steps, progressively [...]. We simply turned the patient in a single movement".
Category 4 – Pondering and refining learning	
Register units	Context units
Structured approach	When students were questioned on what they would do differently, all mentioned structured care aspects. Group F came up with an important resolution: "First of all we would follow a logical order [...] evaluate things based on a scale [...], create a care plan, and provide education on homecare; for the complete evaluation of the patient, [...] we would collect necessary data, then [...] provide guidance to the accompanying person [...]. We should perform the exam based on the existing ulcer scale because it would give us a direction for the examination [...]. We did not logically follow these steps".
Managed care	All students reported on the lack of organization and leadership. Group C: "[...] The responsible nurse would be requested by the assistant nurse, who was recently on duty and to an academic nurse [...] to perform the patient's physical examination and admission at the same time; the recently on duty nurse should be responsible for talking with the accompanying person [...] while the ulcer is being evaluated, the responsible nurse should try to understand the patient's history in order to establish a nursing care plan". No leaders were able to organize care.
Category 5 – Perceptions and attitudes on facing a clinical situation	
Register units	Context units
Satisfaction degree and impressions	The experience was considered positive: "It was an excellent experience. We will try to improve, organize care and actions, and rethink our solutions. [...] We experienced many failures; in the simulation, we can make mistakes, but we can't do that in a real-life situation. [...] Organization and planning are required. [...] It was learning experience. [...] This is a new experience that leads us to think about our actions. [...] This gave us a chance to identify what should have been done but was neglected. [...] It is like being at an actual hospital. [...] It was a great experience, and you can feel the reality [...]" (E1–E29). Three students showed fear because they were being evaluated. The report of E12 was important: "I could say that in 22 years as a nurse technician [...] in practice and in professional life I have faced several situations and learned how to do the right things, but we don't know why we are doing them [...] But today [...]—I don't have words to describe it was a growing experience; I have never faced anything similar to it". And from group G: "Because in real-life practice, when we forget how the procedure is, we often ask a nurse or a professor. You never ask yourself [...]; but during the simulation, we really had to think about all the steps [...]—we had to think".
Self-regulation	Competence exercise was evaluated during the scenario. Comments regarding knowledge and skills include the following: E25: "We had the knowledge, but the task also required skills to be completed"; E19: "We must bear in mind a schematic care process [...]"; E22: "Having the knowledge does not mean that you can do it, and you end up displaying an unprofessional image; the patient thinks 'that one really does know nothing' [...], and this emphasizes the importance of nursing care systematization"; E24 and E13: "We are students from the 8th semester, so we should have had more skills and better posture"; E14: "In my opinion, this is structured approach that was covered in the classroom". The following comments concern attitudes: E4, E5, and E22: "[...] We were not able to follow through with knowledge-skills-attitudes, [...] We did not know what to do or how to do it [...], so we took little action"; E10: "Our attitudes were disconnected; we did not have the right [...] attitude [...], and it was not what we should have done"; E9: "[...] We lack initiative"; (E29, E10, and E28): "We did not know how to use resources in the scenario".

Discussion

Study limitations included the inability to generalize the findings obtained from the qualitative methods. In addition, although the simulation was presented in the classroom, students were from different institutions with diverse curricula.

This study's contribution is the analysis on the teaching-learning process by action-reflection that was favored by simulation strategy for nursing education. The debriefing phase included immediate feedback, which resulted in the construction of knowledge, skills, and attitudes of competence focus and suggested effects on clinical practice in the prevention of pressure ulcers.

The first two categories showed the potential of debriefing to provide immediate suggestions for problem resolution and the raising of knowledge, skills, and attitudes required for action.

The perception of disorganized thoughts after performing the simulation scenario is understandable. Participants gradually emerged from the simulated experience to reality and were compelled to honestly describe the real actions that they took;⁽⁶⁾ this approach allows assessment of the students' operative abilities because free communication is promoted. Success of this step is the students' identification of learning gaps, and the professor is responsible for mediating so that the planned education goals are reached.

Subsequent points represent the students' eagerness to learn from this experience, which is seen in the students' reports about what occurred.⁽⁶⁾ This open reflection enabled students to begin translating their experience into explicit knowledge.⁽⁵⁾

After describing the clinical case in the simulation, students immediately identified the problems by awareness of the situation-problem experienced. This is the immediately meaning of the problem. This meaning is communicated, expressed, clarified, and validated when individuals rationalize on the perceived objects. When new situations are experienced, additions and changes occur and meanings with low or high impact are accumulated, all according to the potential that they represent for the individual.⁽¹⁰⁾

Students reported to understand the problem, it was perceived because they immediately formulated ideas to solve the task. When they became frustrated by their ideas, their thoughts became reflexive. This immediate problem gives direction for management when it becomes contextualized. As the combined ability of knowledge, knowing-doing, and attitudes, increases, the professionals gather to solve problems, more competence he/she has shown.⁽¹⁾

We believe that the immediate problem concerning risk factors, which students faced in the clinical case, and the solutions that the students found were based on information taught in the classroom on risk assessment for pressure ulcers. When the case was read by students, they had pre-constructed ideas about the most obvious element of the task: to identify risk factors.

The scenario deliberately did not present nursing records in medical charts. The absence of these records provided a clue on the need to insert risk assessment in nursing care systematization. All resources were made available for a structured approach toward patient evaluation according to international recommendations that are widely accepted in Brazil. Therefore, more realistic and complex scenarios lead to greater frustration in developing an initial solution.

The third category represented the knowledge, skills, and attitudes exhibited during the scenario. In the analytical phase of debriefing, students systematically evaluated management and compared the results with a real-life situation.⁽⁶⁾

Students did not apply presupposed of the policy or practices of risk assessment for pressure ulcers, even though they are in their final year of nursing school. Recommended practices include a structured approach toward patient evaluation by inclusion of an assessment scale or during nursing care systematization.

Components of professional competence are formed by knowledge (theoretical, practical, and procedural knowledge), skills (formal, empiric, cognitive, and relational knowledge of what to do), and attitudes (to want, to know, and ability to act).⁽¹⁾ Risk assessment for pressure ulcer requires a more attentive approach during the formation of a curric-

ulum because, during the action stage, theoretical knowledge is prominent. Practical and procedural knowledge, ability to perform exercises, and attitudes were not enough to successfully accomplish the task.

The simulation experience is promising for helping students develop competence; when students reported during the debriefing what they should have done differently, they showed their knowledge of international recommendations and changes in their level of theoretical knowledge and procedures. This favored skills and attitudes in similar clinical situations.

The simulation strategy was conducted rigorously on the basis of methodological thinking; it resulted in students learning to think right and to do things right. Discussions of knowledge based on content—knowing what to do and how to do it, as well as how to act—required a teaching environment that favors critical reflection on practices.⁽¹²⁾ Debriefing success is confirmed because students are honest about analyzing their own mistakes. It is an ideal process to improve reflexive thinking, which in turn helps improve the ability to respond to clinical questions presented during any simulated event.^(7,8)

During the action phase, students pointed out that they did not have success in care organization; the content presented in the classroom, the actions performed during the simulated scenario, and feedback obtained during the debriefing enabled the relationships between theory and practice. This finding resulted in reiteration of the recommendations and managed elements for care delivery.

The simulation environment highlights the person's perception of his or her own abilities, as the participants are able to perform the "pretend" functions. High-quality mediation provided by the professor during the debriefing allows the participants to develop more strategies to help improve patient safety.

The ability to promote students' involvement in a reflective process can be taught. For this reason, professors are challenged to plan learning strategies that enable the students to explore, recognize, and connect new learning from situations experienced in a simulation environment.⁽¹³⁾

Category 5 emphasizes satisfaction and enthusiasm with the experience, which reveals the effects of the strategy used to develop competence. This is especially relevant for students who present fear because they are being evaluated. Students also expressed their perceptions on immersion, the realism of the strategy, immediate feedback, and applicability to real-world practice.

Similar students using advanced simulation presented results in satisfaction, enthusiasm, and development of self-confidence; reinforcement of practical aspects with real patients; reflexive debriefing; efficacy in improving self-perception; improvement of confidence and competence in intensive care; better recognition of strong points; and ability to contribute to care based on nursing education level.⁽¹⁴⁻¹⁷⁾

In general, student reflections are more profound and significant in clinical practice, particularly because the reflective thinking regarding the presented scenarios lasts for days and weeks after the simulation.⁽¹⁸⁾

Concerning knowledge and skills, students showed clarity on theoretical points. However, upon reflection about their management during the simulation, students recognized their lack of systemization of procedural knowledge and formal empirical and cognitive skills.

The perception regarding the attitude component was focused on no-action situations by students. It was evidence that students became more aware of the efficacy, valorization, and agility required to perform procedures in order to achieve competence in training. This competence can strengthen integral care for patients, promote a professional self-image, and propelling fundamental improvements in attitudes, knowledge, and skills. Greater clinical experience and simulation experienced by students will increase their chances of improving their confidence when facing clinical situations.⁽¹⁶⁾

Conclusion

This simulation strategy enabled nursing students to develop competence in risk assessment for pressure ulcer. It promoted positive self-image and articulation of

knowledge and skills, which resulted in confident and safety attitudes to the nursing professional.

Collaborations

ECC Moura and MHL Caliri contributed to the conception of the study and assisted with the analysis and interpretation of the data and critical drafting of the manuscript to improve its intellectual content. They also approved the final proofs.

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