

KNOWLEDGE OF NURSING STUDENTS ABOUT NURSING CARE FOR PATIENTS RECOVERING FROM ANESTHESIA

Conhecimento de acadêmicos de enfermagem sobre os cuidados do enfermeiro ao paciente em recuperação anestésica

Conocimiento de estudiantes de enfermería sobre la atención de enfermeras para pacientes sometidos a recuperación anestésica

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ABSTRACT: Objective: To identify the knowledge of nursing students about nursing care and actions in the post-anesthesia care unit regarding patient safety. **Method:** This is an exploratory descriptive study with a qualitative approach, conducted with 30 nursing students from a private higher education institution in Southern Brazil. Data were collected by administering a semi-structured questionnaire in October 2018. We adopted Bardin's content analysis for data processing. **Results:** The following category emerged based on the interviewees' statements: Nursing care and actions in the post-anesthesia care unit regarding patient safety, perceived by nursing students. The students acknowledge routine and mechanistic care, communication, leadership, nursing process application, and use of protocols and scales as fundamental for patient safety when recovering. **Conclusion:** Nursing students identified safe care elements related to nursing care in anesthesia recovery.

Keywords: Education, nursing. Nursing care. Nurses. Anesthesia recovery period. Patient safety.

RESUMO: Objetivo: Identificar o conhecimento de acadêmicos de enfermagem relacionado aos cuidados e às ações desenvolvidas pelo enfermeiro em sala de recuperação pós-anestésica com vistas à segurança do paciente. **Método:** Estudo descritivo-exploratório, de abordagem qualitativa, realizado com 30 acadêmicos de enfermagem de uma instituição privada de ensino superior da Região Sul do Brasil. A coleta de dados ocorreu no mês de outubro de 2018, mediante aplicação de questionário semiestruturado. Empregou-se a análise de conteúdo de Bardin para tratamento dos dados. **Resultados:** Com base nos depoimentos dos entrevistados, emergiu a seguinte categoria: Cuidados e ações do enfermeiro para segurança do paciente, em sala de recuperação pós-anestésica, percebidos pelos acadêmicos de enfermagem. Cuidados rotineiros e mecanicistas, comunicação, liderança, aplicação do processo de enfermagem e uso de protocolos e escalas foram reconhecidos pelos acadêmicos como fundamentais para a segurança do paciente na recuperação. **Conclusão:** Os acadêmicos de enfermagem reconheceram elementos promotores do cuidado seguro relacionados à assistência de enfermagem na recuperação anestésica.

Palavras-chave: Educação em enfermagem. Cuidados de enfermagem. Enfermeiras e enfermeiros. Período de recuperação da anestesia. Segurança do paciente.

RESUMEN: Objetivo: identificar el conocimiento de los estudiantes de enfermería relacionados con la atención y las acciones desarrolladas por las enfermeras en la sala de recuperación postanestésica, con miras a la seguridad del paciente. **Método:** Este es un estudio descriptivo y exploratorio con un enfoque cualitativo, realizado con 30 estudiantes de enfermería de una institución privada de educación superior en el sur de Brasil. La recopilación de

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datos tuvo lugar en octubre de 2018, mediante la aplicación de un cuestionario semiestructurado. El análisis de contenido temático de Bardin se utilizó para el procesamiento de datos. **Resultados:** surgió la siguiente categoría: Atención de enfermería y acciones para la seguridad del paciente en una sala de recuperación postanestésica, según lo perciben los estudiantes de enfermería. Los cuidados académicos y de rutina, la comunicación, el liderazgo, la aplicación del proceso de enfermería y el uso de protocolos y escalas fueron reconocidos por los académicos como críticos para la seguridad del paciente en la recuperación. **Conclusión:** los estudiantes de enfermería reconocieron elementos que promueven la atención segura, relacionados con la atención de enfermería en la recuperación anestésica.

Palabras-clave: Educación en enfermería. Atención de enfermería. Enfermeras y enfermeros. Periodo de recuperación de la anestesia. Seguridad del paciente.

INTRODUCTION

The Safe Surgery Saves Lives initiative, launched by the World Health Organization (WHO), is in its second global challenge for patient safety, aiming to reinforce safe surgical practices to reduce unsafe actions, including those related to the post-anesthesia care unit (PACU)¹.

PACU is the place that receives patients after anesthesia and surgical procedures. In this environment, safety concerns include issues associated with work overload and patient identification, assessment, and transfer, as well as the use of equipment and analgesics that enhance care risks and demand actions to prevent nursing professionals from causing accidents².

Given the occurrence of technical and/or non-technical failures that contribute to adverse events in anesthesia³, in addition to patient systemic changes in the postoperative period, which predispose to circulatory, respiratory, and gastrointestinal complications⁴, the health-care team, especially nursing professionals, needs to be precise in the clinical assessment to identify hemodynamic changes and improve care quality and safety⁵.

A study conducted with accident reports from United States hospitals identified that, in the root cause analysis of 36 adverse events, mistakes were made by failure in standardization and/or policy for safe anesthesia administration procedures³. These factors may maximize the frequency of complications, such as hypothermia, hypoxemia, apnea, shaking, nausea, vomit, cardiac arrhythmia, and urinary retention. Similarly, they may raise the level of care dependency⁶, which, if not managed, predispose to severe and preventable adverse events.

In the postoperative period in PACU, the safe recovery of the patient depends on the use of monitoring resources and equipment combined with nursing care, which must be based

on scientific knowledge and technical skills so as to perform safe interventions related to the anesthesia and surgical procedures⁴. We highlight that, to implement a systematization of perioperative nursing care (SPNC) effectively as a methodological instrument to treat the patient thoroughly, continuously, and safely, the nurse must know about the applicability of nursing diagnosis, as well as its interventions and expected results⁷.

Therefore, investigating nursing students' knowledge about nursing care for patients during anesthesia recovery is a tool for future improvements in the teaching-learning process, which reflects in the care practice. Considering the above, the guiding question is: what do nursing students know about nursing care and actions in the PACU?

OBJECTIVE

To identify the knowledge of nursing students about nursing care and actions in the PACU regarding patient safety.

METHOD

This is an exploratory descriptive study, with a qualitative approach, conducted with undergraduate nursing students from a private higher education institution in Southern Brazil. The target-population comprised 68 students, approved in the theoretical subject of Surgical Center, Material Center, and PACU taught in the 3rd year of the course (5th semester).

The inclusion criteria were: being an undergraduate nursing student; being properly enrolled (attending the 6th, 7th, or 8th semester); and being at least 18 years old. Blank questionnaires were excluded. After individual invitation and

explanation about the study objectives, 30 students accepted to participate in the research. There were no withdrawals or exclusions. The questionnaire and the informed consent form (ICF) were given to the students and, then, returned to the researchers.

Data were collected in October 2018, using a semi-structured questionnaire, made by the researchers, with questions that aimed to identify sociodemographic information and the knowledge of students about the care provided in PACU:

1. What do you know about PACU?
2. What is the importance of the nurse in PACU?
3. What are the main types of care that you consider necessary for patients in the immediate postoperative period in PACU?
4. How does nursing care in PACU assist in surgical patient safety?

We adopted a thematic content analysis to assess the data⁸. In the pre-analysis phase, we read the interviews carefully to identify the main ideas. The empirical material was investigated to summarize the information and, then, elaborate the initial and intermediary categories. These categories were thematically grouped, creating a single final category and conceiving the interpretation of the object of study.

The participants were identified with the letter A followed by the number corresponding to the order of return of questionnaires (A1, A2, ..., A30) to keep the anonymity. The Research Ethics Committee of the proposing institution approved this study, under the Certificate of Presentation for Ethical Consideration (*Certificado de Apresentação para Apreciação Ética – CAAE*) no. 95955118.3.0000.5529 and report no. 2,961,674. The project complied with the ethical and legal principles of Resolution no. 466/2012 of the National Health Council.

RESULTS

Out of the 30 participating students, 26 were female. The mean age was 28 years, ranging from 19 to 43 years. The sample consisted of 12 students from the 6th semester, 2 from the 7th, and 16 from the 8th. The following thematic category was listed based on the data collected: Nursing care and actions in the PACU regarding patient safety, perceived by nursing students.

The nursing students stated that nursing care in PACU includes technical and routine care, such as measuring vital signs and evaluating pain intensity and neurological level. They also considered comfort actions and assessment of dressings and devices used in interventional and surgical procedures, aiming to control physiological functions. These types of care are present in the following statements:

“Controlling vital signs, keeping the patient warm, checking and recording pain intensity, and checking for signs of hypoxia, respiratory effort, and/or cyanosis” (A30).

“Assessing the level of consciousness, motor activity, the presence of bleeding, paying attention to patient complaints, and offering comfort actions” (A10).

“Checking the surgery dressing, checking for hemorrhage, evaluating the pain reported by the patient, [...] checking all devices and their proper care, like nasogastric tube, indwelling urinary catheter, suction and thorax drain, and others” (A19).

“Always informing the patient about time and space due to the anesthesia and paying attention to prevent bronchoaspiration” (A28).

“Continuously monitoring saturation, blood pressure, temperature, and heart rate” (A27).

According to the students, the mechanistic care should combine theoretical-practical knowledge with the use of standardized protocols and scales. The participants also highlighted the importance of identifying acute complications, which need immediate intervention by the health-care team:

“Monitoring vital signs according to protocols, in addition to vital signs and symptoms that the patient declares or seems to feel, such as pain or cyanosis. Changing the dressing, if needed, and providing hydration and medicines following the medical prescription” (A8).

“Monitoring vital signs, like blood pressure, heart rate, oxygen saturation, measuring every 15 minutes according to the Aldrete-Kroulik scale” (A10).

“Technical and theoretical knowledge is extremely important for the nursing staff, helping them to identify signs and symptoms of a possible complication, as, for example, hypovolemic shock. [...] The nurse must be alert to any change to recognize the risk of falling, agitation, and allergic reaction to medicines or anesthesia” (A9).

In this perspective, the students emphasized many activities done by nurses in their professional practice in PACU. They cited the interpersonal communication with the patient and the working team and the professional practice based on competences as relevant elements for the patient’s safe recovery:

“The nurse must pay attention to the patient’s recovery and communicate with the team” (A16).

“Evaluating the risk of infection, [...] giving the patient necessary information for better recovery” (A24).

“The nurse is essential because they have the scientific knowledge to act during emergencies, and the leadership on this sector gives quality to the care” (A8).

“As managing PACU is not the doctor’s responsibility, the nurse is the most qualified for the job” (A7).

“Knowing if there are beds available for patients who had surgery and will be discharged at different times and those who will remain in PACU for longer periods. The nurse is responsible for managing employees and the supplies needed” (A1).

In parallel, the students positively indicated the implementation of the nursing process to ensure patient safety and quality in the care given by the nurse in PACU.

“The nurse has the role of caring/prescribing and guiding the team on procedures and care needed by the patients” (A18).

“Performing physical examinations and [systematization of nursing care] SNC” (A21).

DISCUSSION

PACU demands that the health-care team, particularly the nurses, undertakes specific care and actions, given the complexity and dynamic nature of factors that intensify patient (in)security in this surgical phase². The nursing students reinforce that routine procedures and actions are primordial for the patient’s safe care. This fact corroborates the experience report of a nursing student regarding activities done in the PACU of a university hospital from Rio Grande do Sul⁹. Another study conducted with nursing professionals acting in the PACU of a private hospital in western Paraná reported the assessment of vital signs, pain, and specific care with the surgical wound as means for early identification of possible adverse events⁵.

The study mentioned above revealed that the nursing team focused mainly on evaluating the respiratory, circulatory, and neurological systems by assessing the level of consciousness⁵, confirming the results of the present study. The care described by the nursing students aims at the systematic and full service, paying attention to possible complications deriving from the anesthesia and surgical procedures. In this way, they contribute to providing safer postoperative care.

The students affirmed they associate technical care with the use of protocols and scales, whose purpose is to systematize patient care to prevent possible accidents and to support actions taken by the professionals. The measurement of vital signs and the nursing assessment must be precise to identify signs and symptoms of complications caused by anesthesia and surgical procedures and, consequently, to take assertive actions. The Aldrete-Kroulik scale, mentioned by the students, is an easy-to-use tool commonly adopted in PACUs. Its function is to assess the patient’s progress in the post-anesthetic period by analyzing muscle activity, breathing, circulation, consciousness, and oxygen saturation¹⁰.

In this perspective, an investigation conducted with eight technicians and a nurse working in the PACU of a medium-sized hospital in Southern Brazil indicated the use of this scale as a way to assess the surgical patient in anesthesia recovery⁴. However, we highlight that the Aldrete-Kroulik scale assesses five parameters separately, and must not replace the careful evaluation of a professional¹⁰, especially because it does not include a systematic analysis of other clinical data, such as temperature and pain.

Thus, the students reported that the control of acute post-operative pain is a symptom that predisposes the patient to severe events. For this reason, the use of scales needs to be implemented to reduce subjectivity in the professional assessment. They also should be included as one of the parameters for discharging the patient from PACU⁴. Nevertheless, due to the subjectivity of the evaluation, scientific evidence pointed that the nurse considers pain as only a symptom, neglecting to classify it as the 5th vital sign. Moreover, this evidence shows that when students graduate, they become professionals unqualified to assess pain subjectivity¹¹. This circumstance partly explains the low number of reports on the use of scales to assess pain by the students of this research.

Another finding from the students' statements relates to nursing care regarding body temperature maintenance. Sedative and anesthetic administration interferes in the ability of the hypothalamus to regulate central temperature, leading to undesirable hypothermia during the intraoperative period and the post-anesthesia recovery¹². Other factors, such as the operating room temperature, infusion of cold solutions, and age, cause instability on body thermoregulation¹¹.

Perioperative hypothermia is linked to many adverse events, including the increase in: postoperative discomfort, post-anesthesia recovery time, cardiac complications, hemorrhagic events, surgical site infection, and more¹². Stratification of hypothermia risk by the nurse since the preoperative period contributes to patient safety¹³. Thus, emphasizing the importance of risk assessment and the adoption of warming methods is crucial during professional qualification for safe care, especially in the anesthesia recovery phase.

In this study, out of the six goals established by WHO and recommended by the Joint Commission International, only three were mentioned by the students: effective communication, reduction in infection risk associated with health care, and prevention of injuries caused by falls¹⁴. A possible justification for this result is the fact that the disciplines on patient safety taught in undergraduate health courses are still fragmented and need conceptual depth and breadth¹⁵.

Furthermore, nurses may not be aware of how their routine practices contribute to manage risks and keep patients safe¹⁶. This impression might be present since the qualification period, which, in turn, prevents the students from understanding the association between their actions/care and the safety goals globally recognized. Consequently, this topic must be expanded during the qualification of nursing students, including those who participated in this research.

The objective of the surgical safety checklist, elaborated by WHO, is to support safe practices and promote communication between teams to minimize surgical errors¹. Despite the checklist being filled in the operating room, its effective use reflects positively in the patient progress and the care transition to the postoperative period, since before anesthetic induction. On the other hand, communication of surgical errors, which has the purpose of listing actions to avoid the recurrence of cases, is still fragile, according to the health-care team, even after the implementation of the safe surgery protocol¹⁷. This scenario highlights the importance of promoting communication and patient safety culture in academic qualification.

Effective communication is related to error prevention¹, besides being one of the abilities required from nurses in their professional practice¹⁸. Given its relevance, North-American researchers developed a medium-range theory to enhance communication in patient safety culture¹⁶. This theory may guide the teaching-learning method to improve the working process continuously.

According to the participants, leadership and management promote patient safety. Leadership requires commitment, responsibility, empathy, decision-making skills, communication, and efficient and effective management¹⁸. Additionally, scientific evidence shows that transformational leadership plays an active role in creating an environment in which employees feel comfortable to express their safety concerns in order to ensure and implement safe and quality practices¹⁹. Having this in mind, we underline the need to improve practices that promote nursing qualification for management areas due to the importance of this professional in implementing actions in PACU aiming at safe care.

Among the resources needed for patient care in surgical and anesthesia recovery, the nursing students mentioned that, in addition to providing and managing human resources, the nurse must plan and prescribe actions during the patient stay in PACU, following nursing procedures. These procedures represent a stage to operationalize the systematization of nursing care, which guides the continuity

and quality of nursing care⁷. In the surgical environment, a nursing student underscored SPNC as one of the responsibilities of the nurse in PACU⁹, corroborating the findings of this study.

In order to improve and help students during internships, Brazilian researchers elaborated and validated a tool to record SPNC, including specific items for PACU²⁰. Innovative practices may contribute to promote care for patients in anesthesia and surgical recovery, as well as enhance the qualification process of future professional nurses, focusing on quality and patient safety in PACU.

FINAL CONSIDERATIONS

Nursing students recognized actions needed to perform safe nursing care in PACU, such as: checking vital signs, monitoring signs and symptoms, using the Aldrete-Kroulik scale, evaluating the risk of falling and agitation, and following nursing procedures.

A limitation of this study is the lack of studies conducted with nursing students about PACU to discuss the results found. This research may contribute to teaching patient safety in PACU, and, consequently, to the professional nursing practice.

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