

# INTENSIVE CARE PATIENTS IN THE POST-ANESTHESIA CARE UNIT: DIFFICULTIES IN NURSING CARE

*Pacientes intensivos na recuperação pós-anestésica: dificuldades na assistência de enfermagem*

*Pacientes intensivos em la recuperación posanestésica: dificultades en la asistencia de enfermería*

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**ABSTRACT: Objective:** To describe the difficulties of the nursing team in relation to intensive patient care in the Post Anesthesia Care Unit (PACU). **Method:** An exploratory, descriptive study was carried out through the application of a questionnaire, with 40 nursing professionals who work in the PACU of a public hospital in Rio Grande do Sul. **Results:** Intensive care patients are frequently admitted to the unit and the team's greatest difficulties are related to the delay in medical and multiprofessional care, the presence of family members in emergency situations, and the supply and handling of equipment such as respirators and infusion pumps. As for the actual care, the greatest difficulties are the performance of pressure injury prevention measures and the completion of the patient records. **Conclusion:** It is important to emphasize the need to adapt the nursing staff in each shift according to the number and classification of the patients, as well as the presence of the nurse and the intensive care physician 24 hours a day in order to provide quality care to the intensive care patient admitted to the PACU.

**Keywords:** Recovery room. Period of anesthesia recovery. Nursing in recovery room. Perioperative nursing. Intensive care.

**RESUMO: Objetivo:** Descrever as dificuldades da equipe de enfermagem na assistência ao paciente intensivo na Recuperação Pós-Anestésica (RPA). **Método:** Estudo exploratório, descritivo, realizado com 40 profissionais de enfermagem que atuam na RPA de um hospital público no Rio Grande do Sul, por meio da aplicação de um questionário. **Resultados:** É frequente a admissão de pacientes intensivos no setor, e as maiores dificuldades da equipe estão relacionadas à demora do atendimento médico e multiprofissional, presença de familiares em situações de emergência e oferta e manuseio dos equipamentos, como respiradores e bombas de infusão. Quanto à assistência propriamente dita, as maiores dificuldades são a realização de medidas de prevenção de lesão por pressão e o preenchimento dos registros. **Conclusão:** Ressalta-se a necessidade de adequação no dimensionamento da equipe de enfermagem em cada plantão, segundo a quantidade e a classificação dos pacientes no período, bem como a presença exclusiva do enfermeiro e do médico intensivista 24h/dia, sendo todos os colaboradores habilitados para oferecer assistência de qualidade ao paciente intensivo admitido na RPA.

**Palavras-chave:** Sala de recuperação. Período de recuperação da anestesia. Enfermagem em sala de recuperação. Enfermagem perioperatória. Cuidados intensivos.

**RESUMEN: Objetivo:** Describir las dificultades del equipo de enfermería en la asistencia al paciente intensivo en la Recuperación Post-Anestésica (RPA). **Método:** Estudio exploratorio, descriptivo, realizado con 40 profesionales de enfermería que actúan en la RPA de un hospital público en Rio Grande do Sul, a través de la aplicación de un cuestionario. **Resultados:** Es frecuente la admisión de pacientes intensivos en el sector, y las mayores dificultades del equipo están relacionadas a la demora de la atención médica y multiprofesional, presencia de familiares en situaciones de emergencia y oferta y manejo de los equipos, como respiradores y bombas de infusión. En cuanto a la asistencia propiamente dicha, las mayores dificultades son la realización de medidas de prevención de lesión por presión y el llenado de los registros. **Conclusión:** Se resalta la necesidad de adecuación en el dimensionamiento del equipo de enfermería en cada turno, según la cantidad y la clasificación de los pacientes en el período, así como la presencia exclusiva del enfermero y del médico intensivista 24h/día, siendo todos los colaboradores habilitados para ofrecer asistencia de calidad al paciente intensivo admitido en la RPA.

**Palabras clave:** Sala de recuperación. Período de recuperación de la anestesia. Enfermería posanestésica. Enfermería perioperatoria. Cuidados críticos.

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## INTRODUCTION

The Post Anesthesia Care Unit (PACU) has become an increasingly frequent alternative for the admission and treatment of critical surgical patients due to bed unavailability in the Intensive Care Unit (ICU)<sup>1-3</sup>.

At its core, PACU is related to the care of patients classified as requiring intermediate and semi-intensive care. Therefore, the admission of critical patients to the unit raises the question of how to guarantee care for this category of patient in a clinical perspective, focused not only on recovering the effects of the anesthetic-surgical act, but also on comprehensive care, in order to provide safe care<sup>3</sup>.

Although scarce, literature on the subject indicates that the intensive patient care in the PACU requires the adjustment of the unit with respect to the environment, the materials and equipment used, and especially the complexity of the care provided to this patient, which include ventilatory support, invasive monitoring, administration of medications via infusion pumps and enteral diets, as well as patient hygiene, which are not part of the daily routine of the unit<sup>1,2</sup>.

Understanding that the situational diagnosis is a fundamental step for the implantation of interventions and the establishment of a more favorable environment for the practice of nursing care<sup>4</sup>, it is questioned: do the nurses who work in the PCU have difficulties in relation to caring for the intensive care patient?

Thus, learning about the daily practice of nursing care for the intensive care patient in the PACU is relevant so that the difficulties involved in the care process are perceived and actions are implemented that promote safe and humanized care.

## OBJECTIVE

To describe the difficulties of the nursing team related to the intensive care patient in the PACU.

## METHOD

An exploratory, descriptive study with a quantitative approach, performed in a medium-sized public hospital with 264 beds,

a reference for the care of polytrauma patients in Rio Grande do Sul, and an ICU with 29 beds.

The operating room department has seven operating rooms (ORD), where an average of 525 surgeries per month are performed in the specialties of Neurosurgery, General Surgery, Traumatology, Plastic Surgery, Vascular Surgery and Buccomaxilar Surgery.

The PACU has 12 available beds for non-critical patients during the immediate post-operative period (IPO), as well as intensive care patients in the IPO period, who are waiting for available beds in the ICU. Based on the institution's database, 22,333 patients were admitted to the PACU in the last five years (between July 2012 and July 2017), of which 717 (3.2%) were patients who required intensive care.

The participants of this research were members of the nursing team. The inclusion criteria were: to be an actively working nurse or nurse technician in the PACU during the morning, afternoon and evening shifts and to accept to participate in the research by signing an Informed Consent Form (ICF).

The data collection took place in December 2017. A semi-structured questionnaire with 23 questions was used as a research instrument which was applied by the first researcher during working hours in the work environment, which upon completion, was returned to the same researcher, together with the ICF.

The research data were organized using an Excel spreadsheet and analyzed by means of descriptive statistics, using frequency and percentage tables and calculation of statistical measures, such as average and standard deviation, with presentation of the results in charts and tables.

This research was approved by the Research Ethics Committee of the institution under study, via *Plataforma Brasil*, under CAAE N° 78636917.8.0000.553.

## RESULTS

There was a total of 40 (100%), nursing professionals working in the PACU, 14 (35%) working in the morning period, 10 (25%) in the evening period, and eight (20%) in each night period.

Regarding the sociodemographic characterization, the majority were female, married, with children and aged

between 28 and 61 years (mean = 44.3 years / SD = 8.8 years). The details of the sociodemographic profile are presented in Table 1.

The participants of this research have worked in the institution for between 7 months and 38 years (mean = 14.6 years) and, have specifically worked in the RPA, for between 7 months and 22 years (mean = 8.8 years). Only six (15%) employees have another professional activity and have an average monthly family income of nine minimum wages.

The 40 (100%) participants in this study declare to appreciate the work in the PACU, and 37 (92.5%) claim to frequently provide care to intensive care patients in the unit.

Thus, 16 (40.0%) employees feel unprepared to care for the intensive care patient in their daily care routine; only 10 (25.0%) reported having received specific training for this type of care; and 38 (95.0%) would like to receive new

training and refresher training in order to provide better critical patient care.

In order to provide quality care, 27 (67.5%) participants of the research stated that the current number of nursing professionals per shift is insufficient, and more nursing staff is necessary.

The difficulties listed by the subjects regarding the different aspects of intensive patient care in the PACU are presented in Table 2.

At the end of the data collection, the participants were asked if they would like to make any suggestions for the improvement of care provided in the PACU. Twenty-five (62.5%) subjects gave one or more suggestions, such as: the presence of an intensive care physician in the PACU 24 hours a day, exclusively for the unit; adequate number of nursing professionals for the number of intensive care patients in a shift; the presence of the nurse exclusively for the care of the unit, preferably with ICU experience; technical training of PACU employees; and adequate supply of equipment in good working order.

**Table 1.** Sociodemographic characterization of the nursing staff of the Post Anesthesia Recovery Unit.

| Variable          | N  | %     |
|-------------------|----|-------|
| Sex               |    |       |
| Female            | 32 | 80.0  |
| Male              | 08 | 20.0  |
| Age group (years) |    |       |
| 28–32             | 04 | 22.5  |
| 33–37             | 06 | 15.0  |
| 38–42             | 07 | 17.5  |
| 43–47             | 08 | 20.0  |
| 48–52             | 08 | 20.0  |
| 53–57             | 03 | 7.5   |
| 58–62             | 04 | 10.0  |
| Marital status    |    |       |
| Married           | 27 | 67.5  |
| Single            | 07 | 17.5  |
| Divorced          | 05 | 12.5  |
| Widow             | 01 | 2.5   |
| Children          |    |       |
| Yes               | 28 | 70.0  |
| No                | 12 | 30.0  |
| Academic training |    |       |
| Nurse technician  | 23 | 57.5  |
| Nurse             | 17 | 42.5  |
| Total             | 40 | 100.0 |

## DISCUSSION

The admission and care of the intensive care patient is a reality in the institution under study, which is line with a tendency increasingly more compatible with the Brazilian reality, which presents ICU bed deficits<sup>1-3</sup>. According to the database of the institution, 717 (3.2%) of the 22,333 patients admitted to the PACU in the last five years were intensive care patients.

In spite of admitting intensive patients to the unit, a considerable percentage of employees feel unprepared to provide this type of care. In addition to presenting organ system failure, which results in imminent emergency situations and constant alertness common to patients in the IPO period, the intensive care patient requires multiple invasive procedures<sup>5</sup>, which causes a high level of stress to the PACU team.

In addition, one can mention the staffing of personnel working shifts where there is an intensive care patient next to patient in the IPO period in the unit. It is understood that the classification of patients is imperative in order to identify the staff required to care for users in their different levels of dependence<sup>2,6</sup>.

Thus, The Brazilian Society of Surgical Center Nurses, Anesthesia Recovery, Sterilization and Center of Material

**Table 2.** Difficulties in care to the intensive care patient in the Post-Anesthesia Recovery Unit.

| Type of care   | Justification  | Yes |      | No |      |
|--|--|-----|------|----|------|
|  |  | N   | %    | N  | %    |
| Bed preparation and admission of intensive care patient                      | Have to go get equipment in the ICU; assemble respirators and infusion pumps.                | 13  | 32.5 | 27 | 67.5 |
| Filling out forms of the unit  | Insufficient space for intensive care patient records  | 19  | 47.5 | 21 | 52.5 |
| Movement of the team in the PACU   | Insufficient space between patients and equipment.   | 17  | 42.5 | 23 | 57.5 |
| Availability of materials and equipment                                      | Inadequate replacement of equipment; doesn't always work well.                               | 24  | 60.0 | 16 | 40.0 |
| Bedbathing / intimate hygiene  | Insufficient space between beds; insufficient staffing                                       | 10  | 25.0 | 30 | 75.0 |
| Pressure injury prevention measures  | Insufficient staffing and overwork.  | 22  | 55.0 | 18 | 45.0 |
| Surgical wound dressings, drains, and catheters                              | No additional comments   | 13  | 32.5 | 27 | 67.5 |
| Control of infusion and debits / fluid balance                               | Infusion pumps and uniformity are missing from the note routine.                             | 14  | 35.0 | 26 | 65.0 |
| Administration of enteral or parenteral diet                                 | No additional comments   | 00  | 00   | 40 | 100  |
| Administration of vasoactive drugs   | Lack of standard in drug dilution.   | 15  | 37.5 | 25 | 62.5 |
| Administration of blood components   | No additional comments   | 00  | 00   | 40 | 100  |
| Handling of respirators, infusion pumps and other equipment                  | Technical inability to use respirators; absence of physiotherapy service.                    | 23  | 57.5 | 17 | 42.5 |
| Care for patient in isolation  | Existence of only one bed for insolation; there is no adequate ventilation in the unit.      | 13  | 32.5 | 27 | 67.5 |
| Exit and transportation of the patient to perform exams                      | Time required for exit and readmission; absence of a professional to accompany the transfer. | 09  | 22.5 | 31 | 77.5 |
| Patient care in cases of death   | Psychological shock of employees and patients in the IPO period who witness the situation.   | 12  | 30.0 | 28 | 70.0 |
| Daily visit of the intensivist doctor and / or surgeon in charge             | Difficulty due to weekends / holidays.   | 40  | 100  | 00 | 00   |
| Immediate medical care in emergency situations                               | Difficulty due to weekends / holidays.   | 40  | 100  | 00 | 00   |
| Daily visit of the physiotherapist to the patient on mechanical ventilation  | Difficulty due to weekends / holidays.   | 40  | 100  | 00 | 00   |
| Periodic visit of nutritionist, occupational therapist or other professional | There is no such type of care in PACU.   | 40  | 100  | 00 | 00   |
| Family visits  | One relative / day is permitted to visit, which needs to be organized                        | 15  | 37.5 | 25 | 62.5 |
| Presence of family members in the PACU                                       | There is high turnover of people in the unit; disrupts care in emergency situations.         | 30  | 75.0 | 10 | 25.0 |

ICU: Intensive Care Unit; PACU: Post Anesthesia Care Unit; IPO: Immediate Post-operative.

Storage, in accordance with current legislation, recommends the presence of one nursing technician for each group of three patients and one care nurse for every eight beds of non-ventilator dependent patients or three to four critical patients, in the PACU.

It is important to emphasize that the presence of the intensive care patient is not a daily occurrence in the institution, and the number of patients treated and their length of stay in the PACU is also inconsistent, which causes difficulties for the nurse in relation to the preparation of the daily care schedule.

Therefore, correct staffing of personnel is a vital resource to provide adequate nursing professionals, respect the level of patient dependency, ensure user-centered care and the creation of favorable practice environments<sup>8</sup>.

A previous study performed in this institution which dealt with the occurrence of deaths in intensive care patients in the PACU, estimated the average length of stay of this patient in the unit as 14.8 hours (888 minutes)<sup>9</sup>, which differs greatly from the time spent by a patient in the IPO period in a PACU bed - on average of 1.8 hours (111.2 minutes)<sup>10</sup>. Length of stay increases the quantity and nature of the care received by this patient, as well as directly impacting bed rotation, affecting the maximum surgical capacity and the generation of income for the institution<sup>11</sup>.

Faced with this situation, the research participants highlighted their difficulties in different aspects of care in the unit, principally the intensive care physician, who must stay in the PACU at all times, due to the presence of intensive care patients in order to ensure immediate care in emergency situations, considering that units with critical patients require uninterrupted medical and nursing care<sup>12</sup>.

This difficulty extends to other members of the multiprofessional team who need to care for the ICU patient temporarily located in the PACU, such as occupational therapists, nutritionists and physiotherapists, the latter being considered of great importance due to the need for respiratory physiotherapy in patients with orotracheal intubation and the use of mechanical ventilation equipment<sup>1</sup>.

On the contrary, the subjects highlight the presence of relatives in the PACU during special visiting hours as a difficulty, an uncommon practice in the routine of the unit, which increases the turnover of people in a limited physical space and disrupts care, especially in emergency situations.

Another difficulty refers to the equipment used in intensive patient care, which begins in the location and proper functioning of respirators and infusion pumps and is aggravated by the inability of PACU nursing professionals to use them correctly, in addition to the lack of support from the physician and the physiotherapist for adequate respiratory parameters and the correct dilutions of vasoactive drugs.

The literature highlights that knowledge regarding the manipulation of these equipments and vasoactive drugs and their interactions, dosages and dilutions is characteristic of the intensive care nurse<sup>3</sup> and that the lack of these skills has resulted in a significant increase in the number of incidents associated with equipment use<sup>5,13</sup>, a situation that can be solved by training the nursing professionals in the PACU.

Writing patient record notes is added to the group of difficulties listed by the professionals, since the institution uses the PACU forms for intensive care patient records, which do not have enough space for the range of controls and necessary annotations. This fact may compromise the quality of care in the PACU due to the lack of records and the possibility of increasing the risk of discontinuation of care<sup>14</sup>.

It can be observed in the results of the study that the difficulties related directly to nursing care are lower than those related to multiprofessional care or to the use of specific equipment. However, although to a lesser extent, other difficulties were highlighted such the patient's admission to the bed and its preparation, followed by their reception, monitoring and identification of clinical status after the shift as well as assembling the necessary equipment for the continuity of care, which is repeated every time the patient needs to leave the unit for examinations in another unit.

In addition to the time spent on bringing the patient to another unit and then readmitting the patient after the examination, a staff member should be made available to accompany this transfer, who must be prepared for prompt intervention in possible interurrences and for the correct use of the patient monitoring equipment which must be in proper working conditions<sup>15</sup>.

In addition to the team's difficulty in carrying out pressure injury prevention measures, already aggregated to the care provided in the PACU, but in a shorter time period of the patient's stay, due to the insufficient number of professionals involved in the care. It is understood that the bedridden and dependent patient becomes more vulnerable

to pressure injuries without adequate care and that it is the nurses responsibility to carry out strict pressure injury prevention measures<sup>16</sup>.

Bedbathing is a difficulty for a small portion of the participants. This procedure, which is less complex, requires the collaboration of at least two employees, which puts pressures on the team involved in the care of intensive care patients and patients in IPO period simultaneously<sup>1</sup>.

The presence of the intensive care patient changes the routine of the PACU, but when in isolation, the difficulties faced by a group of professionals are increased, since there is only one bed in the unit for this type of care and, in addition, its ventilation is inadequate, which causes risks to the team and to the other patients in the IPO period. Thus, patients are exposed to the cross-contamination of microorganisms, a complex situation that requires intervention from the Hospital Infection Control Service (HICS) regarding the bed management of the institution.

Death is the last difficulty listed by the team, which is a completely different situation to the reality of the PACU. Between July 2012 and July 2017, 30 deaths occurred at the unit in the institution under study. This situation can cause a psychological shock to the nursing team, as well as to the other patients who are in IPO period and fully conscious, who witness the actions and the stress of the medical and nursing teams performing cardiopulmonary resuscitation, in addition to the procedures regarding body preparation<sup>9</sup>.

In contrast to these data, the participants of this study highlight the administration of diets and blood components as the only aspects of intensive care in which they do not encounter difficulties.

Among the suggestions for improving intensive patient care in the PACU is the exclusive and continuous presence of an intensive care physician and nurse, who must have ICU experience. In this context, the American Society of PeriAnesthesia Nurses (ASPAN)<sup>17</sup> approved recommendations that include the need for adequate staff to maintain safe and competent nursing care for critical and non-critical patients, and that nurses working in the PACU must obtain intensive care skills, which has already been a reality in another institution in São Paulo<sup>3</sup>.

The importance of correct professional staffing is also highlighted, according to the number and classification of the patients in each shift, and the offer of training to the

team, including the provision of adequate equipment in good working order.

The results obtained in this study are limited to a local observation. Therefore, they do not reproduce the national reality of the care provided by the nursing professionals working in PACU, and future studies are necessary to verify the existence of intensive care patient admission to the PACU in different regions of the country. Although local, these results can help to improve the management of the PACU units that provide treatment to intensive care patients, despite not being the appropriate scenario, favoring the development of adaptation strategies for the environment and the team in order to improve quality of care.

## CONCLUSION

Despite the fact that it is not the ideal scenario, the admission of intensive care patients to the PACU of the institution under study is a reality. Although nursing care in the PACU is directed at patients who are hemodynamically unstable and susceptible to diverse interurrences, the participants of this research highlighted difficulties in caring for intensive care patients in the unit.

The difficulties highlighted include, the flow of care provided by the intensive care and multiprofessional physician to this patient; the presence of family members in the unit, especially in emergency situations; and adequate supply and operation / use of equipment such as respirators and infusion pumps.

As for the care itself, the greatest difficulties are the implementation of measures to prevent pressure injuries, staffing issues, and the patient record forms of the unit, which do not have enough space to include patient record notes related to the intensive care activities.

There is a need for institutional adjustments regarding the law of supply and demand of intensive care beds so that this situation does not become a rule, but an exception. Due to the need of this type of admission to the PACU adequate nursing staff in each shift is required, according to the number and classification of the patients, as well as the exclusive presence of a nurse and physician intensivist 24 hours a day, as well as all employees being able to provide quality care and safety to the intensive care patient.

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