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Quality of nurses' records concerning neurological assessments in a specialized intensive care unit

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Abstract

Recording the actions, observations, and evaluations carried out by the nursing team is a means to manage care, assess the quality of care, and ensure continuity of care. When a nurse performs a neurological examination on patients in the postoperative period of intracranial surgeries and provides proper records, it is possible to identify potential changes that put the patient's life at risk after the procedure. Therefore, this study aimed to analyze the quality of records of nurses regarding the neurological assessment of patients in the postoperative period of intracranial surgery within a specialized Intensive Care Unit. This was a retrospective, quantitative study, carried out from June to July 2019, with a descriptive analysis. A total of 134 admissions to the neurological intensive care unit were identified, totaling 536 nurse records. There was a predominance of records concerning the assessment of the level of consciousness and pupils (92.5%), in 3.9% they had only the pupillary exam, 2.7% only recorded the level of consciousness, and in 0.7% there were no records. As for comprehensiveness, 90.7% of the assessments of the level of consciousness were complete and 84.3% of the pupillary exam were complete. It was identified that the records of nurses in the Intensive Care Unit where the study was developed were classified as excellent, based on previously defined quality parameters.

Keywords: Nursing records. Nursing assessment. Neurological examination. Quality of health care. Intensive Care Units.

INTRODUCTION

The record of actions, observations and assessments carried out by the nursing team is a means to manage care, assess the quality of care, and ensure continuity of care, through data that is relevant to care which is informed by and used by all professionals on the team[1]. Records enable the reassessment of behaviors to ensure quality of care and contribute to reducing the risk of adverse events.

Furthermore, Resolution 358/2009 of the Federal Council of Nursing (FCN), which provides for the Systematization of Nursing Care (SNC) and the implementation of the nursing process, cites in art. 6 that the execution of the nursing process must be formally recorded, and is considered mandatory[2].

A study on the quality of nursing records in the medical records of pregnant women showed that the records did not reveal

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the real clinical situation, did not include relevant information, and highlighted the low quality of the records[3]. Authors reinforce that the incomprehensiveness or absence of information recorded in the medical records may result in the loss of the care provided involving the patient, the multidisciplinary team, and the health institution, thus, negatively impacting the quality of care, continuity of care, and patient safety[4].

Among the records reported by the nurse, there is a record of the neurological assessment of patients in the postoperative period of intracranial surgeries. During the postoperative period of these surgeries, complications may occur, such as: hemorrhages, pneumocephalus, seizures, increased intracranial pressure, among others, and consequent changes in the level of consciousness and pupils[5]. Therefore, the nurse performs the neurological assessment in order to detect possible changes that put the patient's life at risk after the procedure[6].

The performance of pupillary exam is an important parameter of the neurological assessment performed by nurses during their care routine, especially in the immediate postoperative period (IPP). It serves to identify possible damage to the central nervous system through observation of pupil size, symmetry, and photoreaction[7]. In this period, the level of consciousness is also assessed, using the Glasgow Coma Scale (GCS), whose parameters guide the practice and appropriate clinical interventions[8]. In case of sedation, the Richmond Agitation Sedation Scale is used (RASS), and is considered easy and safe to apply[9].

The study is justified by the need to analyze the quality of the records, highlighting the importance for patient safety and care provided, subsidizing other research on the subject, and contributing to the scientific literature in the area. Given these considerations, the question is: what is the quality of nurses' records regarding the neurological assessment of patients in the postoperative period of intracranial surgeries? The study aims to analyze the quality of records of nurses in a specialized Intensive Care Unit regarding the neurological assessment of patients in the postoperative period of intracranial surgery.

METHODS

This is a retrospective study, with a cross-sectional design and a quantitative approach. It was carried out in a specialized Intensive Care Unit (ICU) of a public hospital in the city of Salvador, Bahia. The aforementioned ICU, at the time of data collection, had 10 beds and 03 nurses per shift, its own instrument to record patient evolution, and nurses did not perform the neurological assessment in the IPP. There were regular trainings for nurses regarding neurological assessment and the unit did not have a pupillometer or measuring ruler.

For data collection, patients admitted into the postoperative period of intracranial surgery in the sector, from January 1 to December 31, 2018, were identified through an online spreadsheet and active search within the medical file service.

After identifying the medical records, data were collected from June to July 2019, using a specific instrument, with the variables: Assessment of the record's presence (GCS/RASS record and pupillary exam present); Presence of the GCS/RASS record only; Presence of the pupillary evaluation only; Absence of record – from Immediate Postoperative Period to 3rd Day of Postoperative Period –POD); and Assessment of record comprehensiveness (complete GCS/RASS; Complete pupillary evaluation; Incomplete GCS/RASS; Incomplete pupillary evaluation). The data source was the patient's records (institutional and nursing evolution checklists). For each item evaluated, the responses were categorized with the

following variables:

Presence of records: present (those with an assessment of the level of consciousness and pupillary exam), partially present (those lacking the assessment of the level of consciousness or pupillary exam), and absent (those without a record of both the assessment of the level of consciousness and pupillary exam).

Comprehensiveness of records: complete (those with items from the level of consciousness assessment and pupillary exam fully completed) and incomplete (those with the level of consciousness assessment and pupillary exam partially completed).

The sample was selected based upon the following inclusion criteria: medical records of hospitalized users from January 1 to December 31, 2018; and printed nursing evolution with the date, signature, and stamp of the responsible professional. The exclusion criteria were: medical records of patients that did not undergo intracranial surgery; medical records without the identification of the professional; patients who did not reach the 3rd POD in the specialized ICU; medical records that were not found in the file or for billing (figure 1).

The collected data were tabulated in Microsoft Excel 2017 software spreadsheets and descriptive analysis was performed using absolute and relative frequencies. The following values were adopted as a parameter for classifying the items evaluated: between 80 and 100% (excellent); between 50 and 79% (good), and less than 49% (bad).

The study respected the ethical aspects of Resolution 466/2012 of the National Health Council that regulates research involving human beings in Brazil.10 It was approved by the Research Ethics Committee (REC) on May 22, 2019, with an Ethical Approval Certificate number (CAAE): 14214819.1.0000.5028, and opinion number 3.340.512.

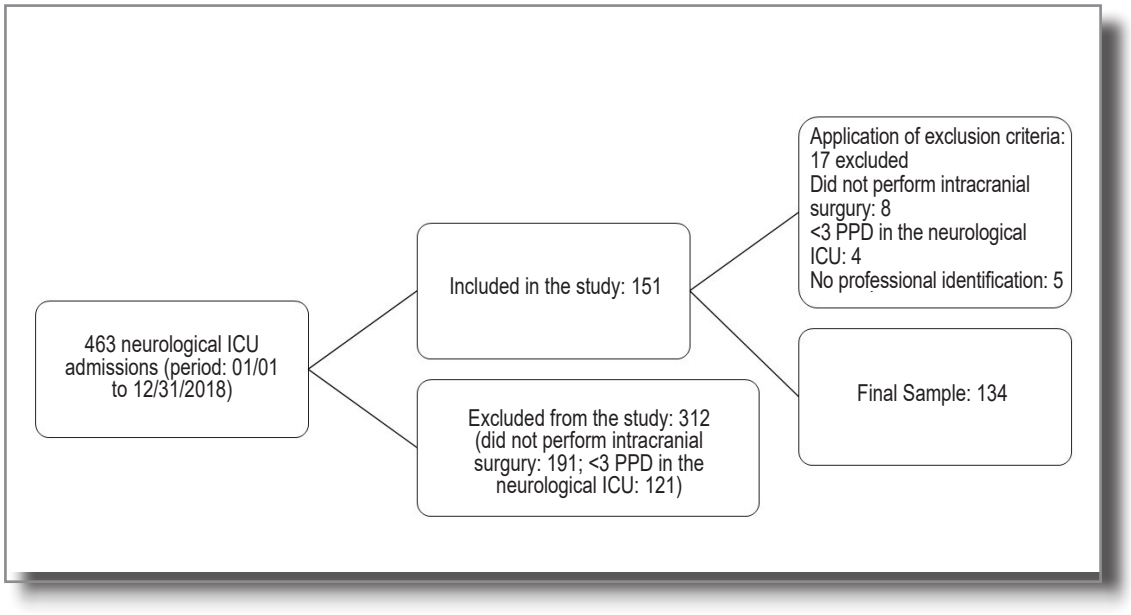

Figure 1 – Flowchart of data collection from medical records of hospitalized patients of the neurological ICU in 2018, Salvador-BA, Brazil.

RESULTS

A total of 134 admissions to the neurological ICU were identified, totaling 536 printed records of nurses. As for the presence of records, in 496 (92.5%) the assessment of the level of consciousness and pupillary exam was identified, in 21 (3.9%) records there was only the pupillary exam, in 15 (2.7%) there was only the level of awareness (GCS), in 4 (0.7%) there was a lack of records (according to Table 1).

When evaluating the comprehensiveness of the records, it was evident that the assessment of the level of consciousness was more complete than when compared to the pupillary exam, as shown in Table 2.

When comparing the frequency of the records of assessment of the level of consciousness and the pupillary exam, from the IPP to the 3rd POD, it was evident that the IPP records were the ones with the most gaps, as shown in Figure 2.

Regarding the comprehensiveness of records between the IPP and the 3rd POD, it was evident that the IPP was the period when there was the greatest lack of records, as shown in Figure 3.

It is noteworthy that the incomplete pupillary exam was related to the absence of information about the patient's photoreaction, and the incomplete assessment of the level of consciousness was related to the of the total value only, without discerning the value of each indicator (eye opening, verbal response, motor response).

Another item not considered *a priori*, as the objective of the study, but that also stood out during the research was the absence of the professional stamp after registration. It was observed that of 356 records, 94 (17.5%) did not contain a stamp, only the professional's full name and Regional Nursing Council (COREN) number.

Table 1 – Presence of nurses' records regarding neurological assessment in users admitted to the neurological ICU, from IPP to 3rd POD, from January to December 2018. Salvador, BA, Brazil.

Presence of Nurse Records	n	%
Consciousness and pupillary assessments	496	92.5
Consciousness assessment	15	2.7
Pupillary exam	21	3.9
Absence of record	04	0.7
Total	536	100

Source: Research data

Table 2 – Comprehensiveness of nurses' records regarding neurological assessment of patients admitted to the neurological ICU, from the IPP to the 3rd POD, from January to December 2018. Salvador, BA, Brazil.

Assessment of the level of consciousness	n	%
Complete	486	90.7
Incomplete	25	4.6
Pupillary exam	-	-
Complete	452	84.3
Incomplete	65	12.2

Source: Research data

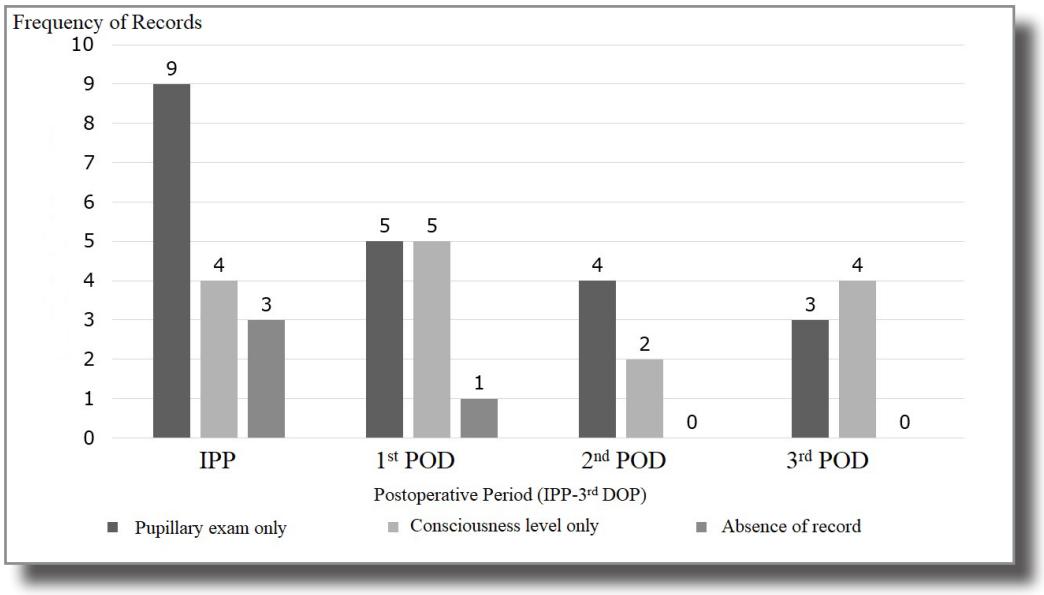

Figure 2 – Comparison between the frequency of nurses' records from the immediate postoperative period to the 3rd postoperative day. Salvador, BA, Brazil, 2018.

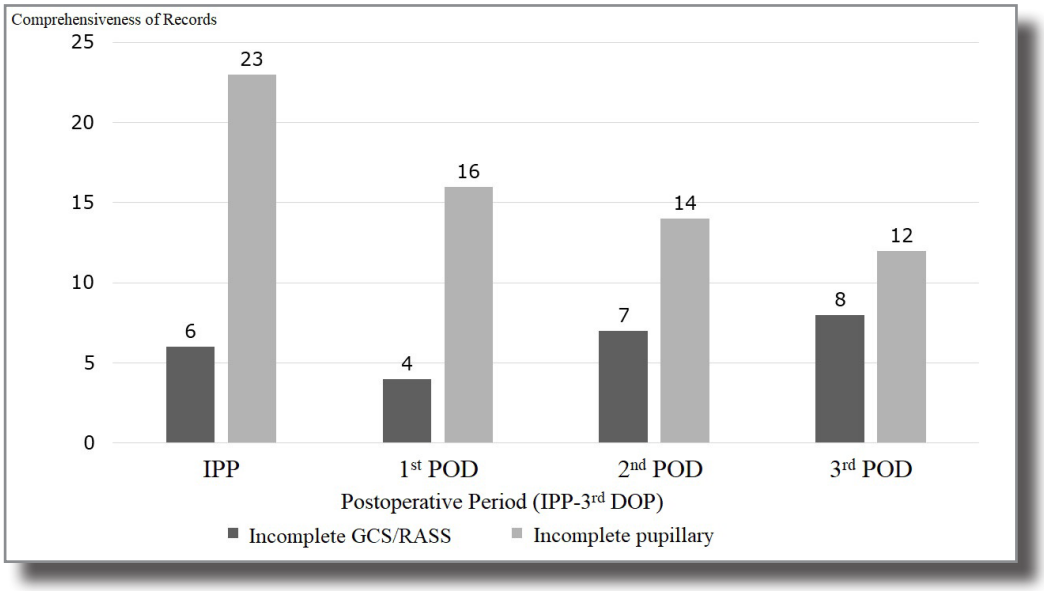

Figure 3 – Comparison of incomplete nurses' records from the immediate postoperative period to the 3rd postoperative day. Salvador, BA, Brazil, 2018.

RESULTS

Patients undergoing intracranial surgery may present neurological and systemic complications in the postoperative period, and it is therefore essential to monitor, evaluate, and record clinical information in medical records.

A study showed that the joint assessment of the pupillary reflex and GCS are useful in estimating the occurrence of neurological complications in the postoperative period of craniotomies[11]. Although the aforementioned evidence points to the need for a concomitant evaluation (assessment of the level of consciousness and the pupil), the result of the present study showed that there was a greater amount of records of the level of consciousness than records of pupillary exams.

The smaller number of pupillary exam records may be associated with the presence of periorbital edema, which affects approximately 80% of patients in the postoperative period of craniectomies. Authors argue that the peak of edema occurs within the first 12 hours after surgery and there are no new cases of periorbital edema in the next 48 hours[6]. These authors also added that after 60 hours after surgery it was possible to perform the pupillary exam in all patients participating in the study, even with the presence of periorbital edema.6 This result differs from the findings in this study, because even after 60 hours after surgery, there were situations in which the record only reported the level of consciousness.

A study that verified the accuracy of pupil exams by nurses working with intensive care and neurosurgical procedures showed that professionals underestimated pupil size, failed to detect anisocoria, and incorrectly performed the pupillary reactivity exam. The study concluded by pointing out the need for the standardization of the assessment through a specific tool, such as the pupilometer, to increase the accuracy and consistency of information, aiming to identify early subtle pupillary changes[12].

Neurosurgery patients have a high risk of neurological complications in the postoperative period, causing an increase in morbidity and mortality and requiring special care, especially in the IPP[5]. However, comparing the frequency and lack of records, it was observed that the IPP was the period with the most gaps, with the highest number of the absence of records and incomplete records (29 in total).

The records of the assessment of the level of consciousness, another point assessed by this study, revealed that incomplete records were present, although in a smaller amount than the pupillary exam, especially on the 3rd POD (with 8 incomplete records). The lack within the records of the assessment of the level of consciousness was related to the absolute value of the GCS only being reported, without discerning the score for each parameter.

A study on the assessment of nurses' knowledge about the correct application of the GCS showed that out of 127 nurses from a critical care unit, 114 (89.8%) of the professionals reported scoring each parameter separately and recording the total value of the score, according to the norms, and seven (5.5%) only reported the total value. The researchers also discussed the importance of GCS as a tool for neurological assessment, whose application must be cautious, standardized, and duly reported, to guarantee uniformity, reliability, and precision in its use[13].

The quality of care provided by nurses to patients undergoing intracranial surgery can be assessed through records. These records make it possible to verify quality indicators, measure the procedures and results of nursing care, and contribute to the work of the multidisciplinary team[14].

The patient's medical record must contain written information that reflects the assessment made under the status

and evolution of the individual in a clear and reliable way, as well as the assistance provided during hospitalization[15]. It is also mandatory, according to COFEN Resolution No. 0545/2017, that the nursing professional uses their stamp, for which it is cited that "in every document signed, when exercising professionally, in compliance with the Code of Ethics of Nursing Professionals"[16]. Concerning this point, it is highlighted that although the present study did not aim to assess the use of the stamp by the nurse, the number of records without the professional's stamp (94 records) deserves to be mentioned in view of the aforementioned resolution that deals with the mandatory use of the same.

The absence of or incomplete records of the neurological assessment of patients in the postoperative period is, therefore, an obstacle in the quality of care, as it does not provide continuous and reliable parameters of the patient's clinical evolution for the proper management of care. Interventions in the area of continuing health education are important, but, above all, nurses need to be committed to recording the conducts carried out, so that it can be ensured, through this record, that the assistance was completely provided.

CONCLUSION

The nurses' records concerning the neurological assessment of patients in the postoperative period of intracranial surgery at the ICU where the study was developed were classified as excellent based on the previously defined quality parameters, although the item referring to the recording of pupillary exams needs to be improved.

Among the limitations of the study, it is highlighted that the lack of an instrument that measures pupil size restricts pupil exams to photoreaction and symmetry and affects the complete assessment and subsequent recording. Moreover, there was the absence of professional identification that generated exclusions from the study records. The importance of neurological and pupillary exams is highlighted as a way to identify signs of complications and worsening of the neurological condition and, consequently, to carry out assertive and quick interventions for a better prognosis and reduced morbidity and mortality.

It is, therefore, suggested that new studies address the evaluation records of complete nursing care, which verify the notes of the technical nursing team, in order to produce data and information that guide the development of trainings, events, or even regulations directed at a particular group or professional. It is also suggested that the overall quality of nursing records be included in the institution's continuing education processes, adding to the legal and ethical aspects of the profession.

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