Cogitare Enfermagem

ORIGINAL ARTICLE

NURSES' ADHERENCE TO THE MUNRO SCALE PRESSURE INJURY RISK ASSESSMENT

HIGHLIGHTS

1. High adherence of nurses in recording risk assessment.
2. Lack of knowledge and attitude are reasons for low adherence.
3. Recurrent training can improve adherence and injury prevention.

Cristina Silva Sousa[1]

ABSTRACT

Objective: To measure the rate of adherence to the electronic recording of the Munro scale in the perioperative period. **Method:** Retrospective cohort study based on the analysis of medical records in 2022 in a large private philanthropic hospital in the city of São Paulo -BR. The completion data was extracted into an Excel report and analyzed for compliance with the scale. **Results:** 22,743 Munro scale records were analyzed, corresponding to 11,892 electronic medical records. The adherence rate was 98.45% in the preoperative phase, 61.73% in the intraoperative phase, and 90.14% in the postoperative phase, with an average rate of 83.44%. Failures to record were related to the absence or partial completion of items on the scale and carrying out the intra- or post-operative phase without evaluating the previous phase. **Conclusion:** This study contributes to professional practice by showing the need for educational interventions and improvements in intraoperative processes to increase adherence to risk assessment.

KEYWORDS: Risk measurement; Perioperative nursing; Electronic health records; Cohort studies; Pressure injury.

HOW TO REFERENCE THIS ARTICLE:

Sousa CS. Nurses' adherence to the Munro scale pressure injury risk assessment. Cogitare Enferm. [Internet]. 2023 [cited "insert year, month, day"]; 28. Available in: https://dx.doi.org/10.1590/ce.v28i0.92763.

[1]Hospital Sírio Libanês, Centro Cirúrgico, São Paulo, SP, Brasil.

INTRODUCTION

The Munro scale is an instrument for assessing the risk of pressure injuries in adult patients in the perioperative period. It is used three times, monitors the perioperative course, generates cumulative and predictive results, and improves communication between areas and the systematic evaluation record[1].

Intrinsic factors such as mobility, fasting, weight loss, body mass index (BMI), age, and comorbidities are assessed preoperatively. Intraoperatively, the extrinsic factors: classification of the physical state according to the *American Society of Anesthesiologists* (ASA) scale, surgical position, anesthesia, humidity, surface and movement, blood pressure, and body temperature. Finally, the perioperative period's duration and the bleeding volume are assessed in the postoperative period[1].

The items on the scale are scored from 1 to 3, and the higher the score, the greater the risk of the patient developing a pressure injury. Thus, the preoperative outcome determines the risk for the intraoperative period, the intraoperative outcome determines the risk for the immediate postoperative period, and the postoperative outcome determines the risk for the immediate postoperative period[1].

The Munro scale is widely used in the United States and, since 2010, has been part of the pressure injury prevention recommendations of the Association of periOperative Registered Nurse (AORN)[2]. Its use has also recently been described in China[3], Turkey[4] and Italy[5]. The scale was translated and validated into Brazilian Portuguese[6] and implemented in 2022[7] at the institution where the research was carried out.

A risk assessment at different stages of the perioperative period is part of a package of injury prevention measures that includes skin and risk assessment, as well as care planning, as recommended by AORN[8], *The Joint* Commission[9] and the *European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance* (EPUAP/NPIAP/PPPIA)[10] - both of which consider a systematic risk assessment at defined intervals and repeated as many times as necessary.

By using a risk determination scale, preventive measures can be implemented more effectively, and pressure injuries resulting from surgical positioning can be avoided. However, preventive measures depend on factors related to the behavior of perioperative nurses.

There is a lack of studies on nurses' adherence to risk assessments, and understanding the possible flaws in this process should elucidate the measures needed to improve it, consequently leading to greater effectiveness in preventing pressure injuries. Therefore, this study aims to measure the adherence rate to the electronic recording of the Munro scale in the perioperative period.

The development of the study on adherence to completing the injury risk determination scale for the perioperative area is justified by the need to improve patient care, reduce healthcare costs, improve surgical outcomes, and promote evidence-based clinical practice.

METHOD

This retrospective cohort study was based on a review of electronic medical records between January and December 2022 at a general philanthropic hospital in São Paulo, with around 1,600 monthly surgical procedures. Data collection took place in April 2023.

The Munro scale was validated for Brazilian Portuguese in a study[6] with good validity

and reliability and is a reliable instrument for measuring the risk of pressure injury in the perioperative period. The preoperative phase should be applied during the surgical patient's admission, the intraoperative phase should be carried out at the end of the surgical procedure when the patient is transferred to the stretcher, and the postoperative phase should be evaluated at discharge from anesthetic recovery. The nurse is exclusively responsible for filling in the scale in all phases.

The Munro scale was implemented at this hospital in January 2022, with expansion to all units in March 2022. The implementation took place after distance learning training on the importance of preventive measures, followed by face-to-face training with the application of the risk assessment and preventive measures and team monitoring in the first days of implementation.

The convenience sample was considered random, with an estimated reading of all the medical records of perioperative patients with a risk assessment record during the data collection period, covering 11,892 medical records. The inclusion criteria were the medical records of adult patients who had undergone surgery during the data collection period; the exclusion criteria were procedures with a record of interrupted surgery that did not include the completion of medical records.

To measure adherence to filling in the Munro scale, the variables were the presence or absence of a pre-, intra-, and post-operative scale in the score *flex* field of the Tasy system, in the scales icon, and the indexes of the electronic medical record, as well as filling in the results fields of this scale, considering those scales to be filled in properly.

Data was collected by extracting the Munro scale management report from the electronic medical record system in 2022. The data was analyzed using a Microsoft Office Excel spreadsheet with descriptive data (frequency, mean, and percentage).

The study was approved by the ethics committee under opinion number 5.344.440. A waiver of the Informed Consent Form (ICF) was requested, as the project has a retrospective design involving only collecting patient data from the institution's medical records.

RESULTS

Twenty-two thousand seven hundred forty-three pressure injury risk assessment records using the Munro scale were evaluated, corresponding to 11,892 electronic medical records during the study period, representing 72.33% of adult patients operated on. The average adherence rate to the evaluation was 83.44%, with the highest adherence in the preoperative phase (98.45%), followed by the postoperative phase (90.14%). Filling data by perioperative phase is shown in Table 1.

Table 1 - How many people filled the Munro scale by perioperative phase. São Paulo, SP, Brazil, 2022.

Variable	N	% records	% medical records
Munro Scale - Preoperative	11.831	52.20	98.45
Munro Scale - Intraoperative	7.341	32.28	61.73
Munro Scale - Postoperative	3.571	15.70	90.14
Total	22.743	100	100

Source: The authors (2022).

About the absence of records, a total of 5,869 medical records were found: the preoperative phase corresponds to 1.55% (n=184) of them; 37.94% (n=4,512) are intraoperative; and 9.86% (n=1,173) are postoperative. The postoperative phase was adjusted for direct discharges (n=2,653) and the lack of registration in the intra-operative phase (n=4,512), which prevents the scale from being filled in at this stage.

As for failures, 40 records were released without being filled in, causing a score of 0 on the evaluation scale; the phase with the highest occurrence was preoperative (18), followed by intraoperative (15) and postoperative (7). Partial completion, i.e., not answering one of the items, was found in 213 preoperative, 26 intraoperative, and 12 postoperative records.

In the event of errors caused by incorrect or incomplete completion of the previous stage, the next stages could not be completed - since the scale has a cumulative factor and depends on the completion of the previous stage to add up the points that formed the total score for the next stage.

DISCUSSION

This study measured the rate of adherence by nurses to the Munro scale. Studies on nurses' adherence to risk assessment using the Munro scale are still scarce. Many deal with translation and validation into the native language of the research, as well as the validity and reliability of the instrument.

It was found that the average rate of adherence to the Munro scale at the research institution was representative, with higher results than a study carried out to determine operating room nurses' level of knowledge about pressure injuries and how they manage them, which showed that 97.9% of operating room nurses had not applied a scale to assess intraoperative injury risks[12].

The results of this study were collected after a training session. Further education sessions may improve the results, especially in the intraoperative period. A study[13] - aimed at determining a practical tool to ensure that surgical nurses demonstrate competence and comply with the process of identifying the integrity of compromised skin - focused on the use of the Munro scale in identifying pressure ulcers and promoting collaboration between the surgical team, the doctor and wound care specialists. The findings show higher compliance rates after educating surgical nurses about their responsibilities in completing the intraoperative part of the scale. Also, in this study, the authors concluded that the adherence rate will probably continue to increase with continuing education and the development of a surgical pressure injury risk assessment team[13].

In clinical practice, high adherence to the scale represents nurses' awareness of decision-making in patient care and recognition of the importance of determining risk as a benefit in implementing preventive interventions that represent quality nursing care.

Pressure damage is avoidable and related to the quality of care and patient safety. Perioperative nurses must have the knowledge and attitude to implement preventive measures. A study aimed at providing a systematic review of the international literature synthesized knowledge about these preventive actions. It explored the factors that influence nurses' adherence to patient safety principles. The research revealed that individual and systemic factors affect nursing practice, influencing adherence to patient safety principles[14].

All hospital patient care areas play a role in developing pressure injuries, so risk assessment is recommended by operating room societies and quality and safety accreditation systems[8-10]. There is evidence that most nurses in the operating room are

unaware of protocols such as risk assessment, skin assessment programs, and information sharing to prevent pressure injuries[15]. The shortcomings seen in the results of this study demonstrate this possible gap in nurses' knowledge and indicate the need for a new training and awareness intervention.

The team responsible for preoperative completion was responsible for the highest number of filling failures, with the scale being released blank or with missing items and a lower score. Failure to fill out the form or inappropriately will lead to a lack of continuity in the application of the tool, which will result in errors in the interpretation of the risks to the patient, consequently leading to preventive measures that are below their needs. Therefore, the risk of pressure injury will be increased by a failure to determine risk.

Despite the importance of electronic medical records, evidence of fragility in medical records is described in the literature in studies of compliance with protocols and guidelines of professional classes[16]. On the other hand, perioperative nursing recognizes the importance of positioning injury[17]. Thus, the lack of knowledge may not be seen in practice due to barriers such as lack of time, personnel, and suitable equipment[18]. Improving these barriers is fundamental for adherence to preventive measures and reducing pressure injuries.

This study showed lower adherence to the Munro scale during the intraoperative period. One nurse can take on four to five operating rooms, with concomitant entries and exits, corroborating the hypothesis of the impact of staff shortage barriers and the dynamics of the sector as a possible reason for low adherence and, therefore, lack of patient risk assessment. This lack of evaluation in the intraoperative phase will compromise the postoperative evaluation, given the cumulative nature of the scale.

Determining risk at each stage can be considered a communication between the teams responsible for patient care to predict possible impacts on subsequent stages. In the case of this study, the greater adherence of clinical nurses in filling out the preoperative scale can be understood by the need to anticipate the preparation of the operating room in terms of the resources needed to implement risk prevention measures. Effective handover communication between perioperative team members addressing pressure injury risk assessment and interventions can facilitate an individualized care plan, including surgical positioning and pressure point relief of areas with significant pressure loading during the procedure[19].

The high level of compliance in the post-operative period may be related to the dynamics of the anesthetic recovery unit and the patient's length of stay, favoring the application of the scale associated with the mandatory evaluation by the nurse to release the patient from the unit.

Applying a risk assessment scale for perioperative patients and nurses' awareness regarding its application can positively influence clinical practice by identifying and preventing perioperative pressure injuries. In addition, research in this field contributes to the advancement of nursing by providing evidence of nurses' adherence to using instruments that guide clinical decision-making.

Among the limitations of the study, it is worth noting that the data belong to a single institution and may not be generalized, as well as the lack of studies on nurses' adherence to risk assessment to compare with the results of this research.

CONCLUSION

The adherence rate in risk assessment, on average, was high, with better performances in the pre-and postoperative periods; lower adherence was seen in the intra-operative period and may be related to the knowledge and attitude of the perioperative nurse, as well

as the demand on nurses in their professional practice. Investments in recurrent training should be applied to improve processes and correct filling errors.

This study contributes to professional practice by showing the need for educational interventions and process improvements in the intraoperative period to increase adherence to risk assessment.

REFERENCES

1. Munro CA. The development of a pressure ulcer risk-assessment scale for perioperative patients. AORN J. [Internet]. 2010 [cited 2023 May 10]; 92(3):272-82. Available from: http://dx.doi.org/10.1016/j.aorn.2009.09.035

2. Stanton C. Guideline for positioning the patient. AORN J. [Internet]. 2022 [cited 2023 May 10]; 115(5):05-07. Available from: http://dx.doi.org/10.1002/aorn.13680

3. Tong L, Zhao M, Yang Y, Gao C, Wang Y, Yuan M, *et al.* Study on application of munro adult operating room pressure ulcer risk assessment table in general anesthesia. Chongqing Medicine. [Internet]. 2018 [cited 2023 May 10]; (36):1336-9. Available from: http://doi.org/10.3969/j.issn.1671-8348.2018.10.011

4. Gül A, Sengul T, Yavuz HÖ. Assessment of the risk of pressure ulcer during the perioperative period: adaptation of the munro scale to Turkish. J Tissue Viability. [Internet]. 2021 [cited 2023 May 10]; 30(4):559-65. Available from: http://doi.org/10.1016/j.jtv.2021.06.009

5. Bruno R, Bertolino D, Garbarino E, Munro CA, Barisone M, Dal Molin A. Translation, cross-cultural adaptation, and validation of the munro scale in Italian. Wound Manag Prev. [Internet]. 2022 [cited 2023 May 10]; 68(2):34-41. Available from: https://pubmed.ncbi.nlm.nih.gov/35343919/

6. Sousa CS. Translation, cultural adaptation and validation of the Munro scale to Brazilian portuguese. Rev Min Enferm. [Internet]. 2021 [cited 2023 May 10]; 25:e1404. Available from: http://doi.org/10.5935/1415-2762-20210052

7. Sousa CS, Acuña AA. Implementation of the munro scale for perioperative pressure injury risk assessment. Rev. SOBECC. [Internet]. 2022 [cited 2023 May 10]; 27:2227784. Available from: http://doi.org/10.5327/Z1414-4425202227784

8. AORN Position Statement on Prevention of Perioperative Pressure Injury. AORN J. [Internet]. 2022 [cited 2023 May 13]; 115(5):458-61. Available from: http://doi.org/10.1002/aorn.13672

9. The Joint Commission. National patient safety goals effective july 2020 for the nursing care center program [Internet]. 2020 [cited 2023 May 13]. Available from: https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2020/npsg_chapter_ncc_jul2020.pdf

10. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and treatment of pressure ulcers/Injuries: clinical practice guideline. The International Guideline Emily Haesler [Internet]. 2019 [cited 2023 May 13]. Available from: https://www.biosanas.com.br/uploads/outros/artigos_cientificos/127/956e02196892d7140b9bb3cdf116d13b.pdf

11. Ministry of Health (BR). National Health Council. Resolution n° 466, 12/12/2012. Approves regulatory norms for research involving human beings. Official Diary of the Union [Internet]. Brasília; 2013 [cited 2023 May 15]. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html

12. Cebeci F, Şenol ÇS. Knowledge and practices of operating room nurses in the prevention of pressure injuries. J Tissue Viability. [Internet]. 2022 [cited 2023 May 15]; 31(1):38-45. Available from: http://doi.org/10.1016/j.jtv.2021.07.007

13. Grandison SL. Evaluation of the implementation of the munro pressure ulcer risk assessment scale to

mitigate pressure ulcers in the perioperative setting. Doctor of Nursing Practice Projects. [internet] 2022 [cited 2023 Ago 05]: 69. Available from: https://digitalcommons.jsu.edu/etds_nursing/69/

14. Vaismoradi M, Tella S, A Logan P, Khakurel J, Vizcaya-Moreno F. Nurses' adherence to patient safety principles: a systematic review. Int J Environ Res Public Health. [Internet]. 2020 [cited 2023 May 15]; 17(6):2028. Available from: http://doi.org/10.3390/ijerph17062028

15. Tura İ, Arslan S, Türkmen A, Erden S. Assessment of the risk factors for intraoperative pressure injuries in patients. J Tissue Viability. [Internet]. 2023 [cited 2023 May 15]; 28:S0965-206X(23)00044-X. Available from: http://doi.org/10.1016/j.jtv.2023.04.006

16. Bombarda TB, Joaquim RHVT. Hospital records: historicity and current tensions. Cad Saúde Colet. [Internet]. 2022 [cited 2023 May 18]; 30(2):265-73. Available from: https://doi.org/10.1590/1414-462X202230020116

17. Tallier PC, Reineke PR, Asadoorian K, Choonoo JG, Campo M, Malmgreen-Wallen C. Perioperative registered nurses knowledge, attitudes, behaviors, and barriers regarding pressure ulcer prevention in perioperative patients. Appl Nurs Res. [Internet]. 2017 [cited 2023 May 18]; 36:106-10. Available from: https://doi.org/10.1016/j.apnr.2017.06.009

18. Waugh SM. Attitudes of nurses toward pressure ulcer prevention: a literature review. Medsurg Nurs. [Internet]. 2014 [cited 2023 May 18]; 23(5):350-7. Available from: https://pubmed.ncbi.nlm.nih.gov/26292449/

19. Gefen A, Creehan S, Black J. Critical biomechanical and clinical insights concerning tissue protection when positioning patients in the operating room: a scoping review. Int Wound J. [Internet]. 2020 [cited 2023 May 18]; 17(5):1405-23. Available from: https://doi.org/10.1111/iwj.13408

Received: 22/05/2023
Approved: 16/08/2023

Associate editor: Dra. Luciana Nogueira

Corresponding author:
Cristina Silva Sousa
Hospital Sírio Libanês
Av. Adma Jafet, 91 Bela Vista – São Paulo. CEP:01308-050.
E-mail:cssousa@icloud.com

Role of Authors:
Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Sousa CS**. Drafting the work or revising it critically for important intellectual content - **Sousa CS.** Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Sousa CS**. All authors approved the final version of the text.

ISSN 2176-9133