Int. j. adv. multidisc. res. stud. 2025; 5(6):2454-2458

Received: 07-11-2025
Accepted: 17-12-2025

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Pain Assessment in Unconscious Patients in Intensive Care Units: Knowledge, Attitudes, and Practices of Healthcare Providers in Mahajanga (Madagascar)

[1] Hery Henintsoa Randrianirina, [2] Tohaina Dolly Velonjara, [3] Arlette Ngouegni Saha, [4] Marie Osé Judicaël Harioly Nirina, [5] Naharisoa Giannie Rasamimanana

[1, 3] Surgical Intensive Care Unit, HU PZAGA, Faculty of Medicine, University of Mahajanga, Madagascar
[2] Department of Emergency, HUMA, Faculty of Medicine, University of Mahajanga, Madagascar
[4] Department of Anesthesiology and Critical Care, HU Tanambao, Faculty of Medicine, University of Antsiranana, Madagascar
[5] Department of Emergency and Intensive Care, HU PZAGA, Faculty of Medicine, University of Mahajanga, Madagascar

Corresponding Author: **Hery Henintsoa Randrianirina**

Abstract

Introduction: Pain assessment in unconscious patients remains a major challenge in intensive care and critical care settings because of patients' inability to communicate verbally. Although the use of validated assessment tools is recommended, their implementation remains insufficient, particularly in resource-limited settings. This study aimed to assess the knowledge, attitudes, and practices of healthcare professionals regarding pain assessment in unconscious patients.

Methods: A descriptive cross-sectional study was conducted in November 2025 in two university hospitals in Mahajanga. Physicians and nurses working in intensive care units, emergency departments, and critical care units were included. Data were collected using a structured questionnaire and analyzed using SPSS version 26.

Results: A total of 22 healthcare professionals were included. All participants acknowledged that unconscious patients may experience pain; however, only 27.3% were aware of validated pain assessment tools. A minority (13.6%) reported routinely using a validated assessment scale. The main barriers identified were lack of training (81.8%), absence of appropriate assessment tools (55.6%), and workload overload (38.9%). The use of validated tools was significantly associated with specific training in pain assessment ($p = 0.02$).

Conclusion: Despite adequate theoretical awareness, pain assessment in unconscious patients remains insufficiently integrated into routine clinical practice. Strengthening healthcare professionals' training and implementing standardized protocols are essential to improve the quality of care.

Keywords: Pain, Intensive Care, Unconscious Patients, Pain Assessment, Health Knowledge, Attitudes, Practice

Introduction

Unconscious patients are frequently encountered in intensive care units (ICUs) and critical care settings. These patients may experience moderate to severe pain resulting from underlying diseases, traumatic injuries, surgical procedures, as well as invasive interventions and routine nursing care performed in critical care environments [1]. Therefore, adequate pain assessment remains essential to ensure optimal patient management. However, in unconscious patients, pain assessment represents a major clinical challenge because of their inability to communicate verbally, increasing the risk of pain underassessment and undertreatment [2]. To improve the quality of care, several validated assessment scales have been developed to identify pain based on observable behavioral indicators [3]. Despite these advances, the routine use of such tools remains limited in many healthcare settings, particularly in resource-limited environments where heavy workloads, staff shortages, and insufficient training may constitute additional barriers to the systematic assessment of pain in non-communicative patients [4]. The primary objective of this study was to evaluate the knowledge, attitudes, and practices of healthcare professionals regarding pain assessment in unconscious patients in the university hospitals of Mahajanga.

Methods

Study Setting

This study was conducted in two university hospitals located in Mahajanga, a city in the Boeny region of northwestern Madagascar. The study was carried out in the surgical intensive care unit, emergency department, and critical care units of the Professor Zafisaona Gabriel University Hospital (HUPZaGa), and emergency department of Mahavoky Atsimo University Hospital (HU-MA).

Study Design

This was a descriptive cross-sectional study conducted among healthcare professionals.

Study Period

The study was carried out over a one-month period during November 2025.

Study Population

The study population consisted of physicians and nurses working in intensive care units, emergency departments, and critical care units who were involved in the management of unconscious or non-communicative patients. Participants were assessed regarding their knowledge, attitudes, and practices (KAP) related to pain assessment in unconscious patients.

Inclusion Criteria

Physicians and nurses with at least one year of professional experience in intensive care, emergency, or critical care units were eligible for inclusion.

Exclusion Criteria

The following were excluded:

- Incomplete or incorrectly completed questionnaires;
- Healthcare professionals who did not provide informed consent;
- Healthcare professionals who were absent or not actively working during the data collection period.

Study Variables

- Socio-professional variables: profession, department of practice, years of professional experience, and specific training in pain assessment among unconscious patients.
- Knowledge variables: perception of pain in unconscious patients and awareness of the need for pain assessment.
- Attitude variables: perception of the usefulness of pain assessment, perceived difficulties, and impact on workload.
- Practice variables: use of pain assessment tools and clinical practices related to pain assessment.
- Difficulty-related variables: barriers encountered, including lack of training, absence of appropriate assessment tools, and workload.

Data Collection

Data were collected using a pre-established structured questionnaire consisting of closed-ended questions divided into three sections: knowledge, attitudes, and practices. A pilot test of the questionnaire was conducted to assess its clarity and feasibility. Participation was voluntary and anonymous.

Data Entry and Statistical Analysis

Data were entered using Microsoft Word® and Microsoft Excel® 2016. Statistical analyses were performed using IBM SPSS® Statistics version 26. Descriptive analyses were conducted using frequencies and percentages. Associations between qualitative variables were assessed using the Chi-square test or Fisher's exact test, as appropriate. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Participants' confidentiality and anonymity were strictly maintained. Written informed consent was obtained from each participant prior to inclusion in the study. The study complied with ethical principles governing research involving human participants.

Study Limitations

This study was conducted in a limited number of centers and included a relatively small sample size, which may limit the generalizability of the findings. The absence of multivariable analysis prevented adjustment for potential confounding factors. Furthermore, self-reported data may be subject to reporting bias.

Results

General Characteristics of Participants

A total of 24 healthcare professionals were approached during the study. Of these, 22 were included in the final analysis, yielding a participation rate of 91.6%. Two questionnaires were excluded because of incomplete data. The mean age of participants was 34.6 ± 7.8 years, ranging from 24 to 52 years. The male-to-female ratio was 0.8. Physicians accounted for 54.5% (n = 12) of participants, whereas nurses represented 45.5% (n = 10). Most participants worked in the Emergency Department (45.5%), followed by the Surgical Intensive Care Unit (31.8%) and Critical Care Units (22.7%). Regarding professional experience, 40.9% of participants had more than 10 years of experience, 36.4% had between 5 and 10 years of experience, and 22.7% had less than 5 years of professional experience.

Knowledge of Healthcare

Among the 22 healthcare professionals surveyed, only 3 (13.6%) reported having received specific postgraduate training in pain assessment for unconscious patients, whereas 19 (86.4%) had not received any specialized training in this area. All participants (100%) acknowledged that unconscious patients could experience pain and considered pain assessment necessary in clinical practice. However, only 6 healthcare professionals (27.3%) were aware of validated pain assessment tools for non-communicative patients. Among the scales cited, the Behavioral Pain Scale (BPS) and the Critical-Care Pain Observation Tool (CPOT) were the most frequently mentioned. None of the participants were aware of international recommendations regarding the systematic assessment of pain in unconscious patients.

Attitudes Toward Pain Assessment

The majority of participants (90.9%) believed that systematic pain assessment improved the quality of care provided to unconscious patients and facilitated better

adjustment of analgesic treatment. However, 63.6% of healthcare professionals considered pain assessment to increase their daily workload. Furthermore, 72.7% reported that pain assessment tools were difficult to use in routine practice, mainly because of inadequate training and the absence of standardized protocols within their departments. Additionally, 81.8% of participants believed that pain in unconscious patients was underassessed in their daily clinical practice.

Practices Related to Pain Assessment

Among the 22 healthcare professionals surveyed, only 3 (13.6%) reported routinely using a validated pain assessment tool for unconscious patients. Seven participants (31.8%) relied on non-standardized methods based primarily on clinical signs, whereas 12 healthcare professionals (54.5%) did not assess pain at all (Fig 1).

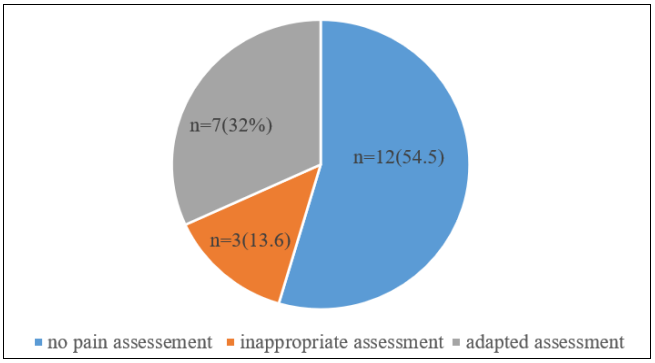

Fig 1: Pain assessment practices among healthcare professionals

Systematic pain assessment was performed by only 18.2% of participants. In contrast, 45.5% reported assessing pain only when suggestive signs such as tachycardia, agitation, or hypertension were present, while 36.3% acknowledged that they did not regularly assess pain in unconscious patients. Regarding documentation, only 22.7% of participants systematically recorded pain assessment findings in patients' medical records. Furthermore, 27.3% reported modifying or adjusting analgesic treatment following a positive pain assessment.

Barriers to Pain Assessment

Overall, 18 healthcare professionals (81.8%) reported difficulties in assessing pain in unconscious patients. The main barriers identified were lack of specific training (81.8%), unavailability of appropriate assessment tools within the departments (55.6%), and excessive workload (38.9%).

Some participants also reported the lack of institutional protocols and inadequate staffing levels as obstacles to the systematic assessment of pain.

Associative Analyses

The use of a validated pain assessment tool was significantly more frequent among healthcare professionals who had received specific training compared with those who had not (66.7% vs. 5.3%; $p = 0.02$). Healthcare professionals with more than 10 years of experience were more likely to use standardized pain assessment tools than those with less than 5 years of experience; however, this association did not reach statistical significance ($p = 0.08$). No statistically significant association was found between professional category (physician versus nurse) and the use of a validated pain assessment tool ($p = 0.41$).

Discussion

This study, conducted in the intensive care, emergency, and critical care departments of the university hospitals of Mahajanga, aimed to assess healthcare professionals' knowledge, attitudes, and practices regarding pain assessment in unconscious patients. The findings highlight a marked discrepancy between good theoretical awareness of pain in this patient population and the limited use of validated pain assessment tools in routine clinical practice. The participation rate observed in our study was satisfactory, with more than 90% of the healthcare professionals approached being included in the final analysis. This high participation rate may reflect the interest given to pain management in critical care settings. Nevertheless, the sample size remained relatively small, which may have limited the power of certain statistical analyses and restricted the generalizability of the findings to other healthcare facilities in Madagascar. Physicians represented slightly more than half of the participants. This distribution differs from that reported in several international studies, in which nurses generally constitute the majority of respondents because of their continuous presence at the bedside of critically ill patients [5, 6]. In our setting, this difference may be explained by the local organization of healthcare services and the varying availability of staff during the survey period.

A substantial proportion of participants had more than ten years of professional experience. Prolonged experience in critical care settings is generally associated with better recognition of behavioral indicators of pain [7]. However, our findings suggest that experience alone does not necessarily guarantee the systematic use of standardized assessment tools. Specific training appears to play a more important role than professional experience in promoting the adoption of best practices.

All healthcare professionals surveyed acknowledged that unconscious patients could experience pain and considered pain assessment to be necessary. This finding reflects good theoretical awareness. Current neuroscientific evidence indicates that some patients with impaired consciousness may retain significant nociceptive activity despite the absence of verbal communication [8, 9]. However, despite this awareness, only a few participants were familiar with validated assessment tools such as the Behavioral Pain Scale (BPS) and the Critical-Care Pain Observation Tool (CPOT). A similar discrepancy between general knowledge and practical mastery of assessment tools has been reported in several previous studies [10, 11].

The low rate of specific training observed in our study may explain this situation. Fewer than one in five healthcare professionals reported having received training in pain assessment among unconscious patients. Studies conducted in critical care settings have shown that insufficient training is one of the main barriers to the implementation of recommendations regarding systematic pain assessment [12, 13]. Conversely, departments benefiting from continuing education programs generally demonstrate better adherence to standardized tools and improved quality of pain management.

Regarding attitudes, most participants believed that systematic pain assessment could improve the quality of

patient care. This finding is encouraging, as it reflects an overall positive perception of the clinical value of pain assessment. However, a substantial proportion of participants also considered that this practice increased their daily workload and remained difficult to implement routinely. These difficulties likely reflect both organizational constraints and inadequate practical training. In the absence of clearly established institutional protocols, pain assessment may be perceived as an additional task rather than an integral component of routine patient care.

The practices observed in our study support this interpretation. Only a small proportion of healthcare professionals reported regularly using a validated pain assessment tool. Most relied primarily on isolated clinical signs such as tachycardia, agitation, or hypertension. Although these manifestations may suggest the presence of pain, they lack specificity and may also be related to other common pathophysiological conditions encountered in critically ill patients. Several authors have emphasized that relying exclusively on hemodynamic indicators may lead to underestimation of pain in non-communicative patients [14, 15].

Furthermore, documentation of pain assessment remained limited in our study. Only a minority of participants reported systematically recording pain assessment findings in patients' medical records. However, regular documentation of pain is essential to ensure continuity of care, optimize analgesic treatment, and improve communication among members of the healthcare team.

The main barriers identified by participants were lack of training, absence of appropriate assessment tools, and excessive workload. These findings suggest that the observed shortcomings are not solely attributable to individual knowledge deficits but are also influenced by organizational and institutional factors. This situation may additionally reflect challenges specific to resource-limited healthcare settings, such as shortages of healthcare personnel, which can reduce the time available for systematic pain assessment in non-communicative patients [4].

A comprehensive strategy combining continuing education, dissemination of validated assessment tools, and development of local protocols adapted to the realities of Malagasy intensive care units therefore appears necessary.

In our study, healthcare professionals who had received specific training were more likely to use validated pain assessment tools than those without such training. This association underscores the importance of education in improving professional practice. Several recent studies have demonstrated that targeted training programs on the use of behavioral pain assessment scales significantly improve both the frequency and quality of pain assessment in non-communicative patients [13, 16].

Nevertheless, this study has several limitations. The relatively small sample size and the limited number of participating centers restrict the generalizability of the findings. In addition, the study relied on self-reported data, which may have introduced reporting bias. Finally, the absence of multivariable analysis prevented adjustment for potential confounding factors that may have influenced the observed practices.

Despite these limitations, this study provides original data on a topic that remains poorly documented in Madagascar. It highlights the need to strengthen healthcare professionals' training and to integrate standardized pain assessment tools into routine practice in intensive care and emergency departments.

Conclusion

This study highlights a substantial gap between healthcare professionals' theoretical knowledge and their actual practices regarding pain assessment in unconscious patients. Although most participants recognized that unconscious patients can experience pain, the use of validated assessment tools remained very limited, mainly because of insufficient training, the lack of structured protocols, and organizational constraints. These findings underscore the need to implement targeted continuing education programs and to standardize pain assessment through the routine use of validated behavioral scales in intensive care and emergency departments. Better integration of these tools into daily clinical practice could significantly improve the quality of care provided to non-communicative patients.

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