







ORIGINAL ARTICLE

Challenges in the assessment and non-pharmacological management of delirium by nurses in Intensive Care Units

HIGHLIGHTS

1. Adopt structured protocols to prevent delirium in ICUs.
2. Organize suitable environments to mitigate disorientation in ICUs.
3. Involve family members in care to reduce delirium.
4. Implement non-pharmacological actions with a person-centered focus.

Júlia Horn Scherer¹ Taylor Felipe Alves Maia² Clayton Felipe da Silva Telles² Amanda dos Santos Fragoso³ Pedro Guilherme Nascimento Tetericz Propodolski² Mara Ambrosina de Oliveira Vargas⁴ Fábio Silva da Rosa² 

ABSTRACT

Objective: Identify challenges in implementing non-pharmacological strategies for delirium prevention in critically ill patients. **Method:** Qualitative, descriptive, and exploratory study, conducted with 25 intensive care nurses from the five regions in Brazil. Semi-structured interviews were carried out between August and October 2023 and analyzed through discursive textual analysis, in accordance with COREQ guidelines. **Results:** The main barriers identified were lack of standardized protocols and tools for delirium detection, structural limitations within units, and restrictions on family participation in intensive care. **Conclusion:** Structural, institutional, and organizational challenges undermine the efficacy of non-pharmacological strategies. Investments in training, environmental adjustments, and patient-centered care policies are fundamental.

DESCRIPTORS: Intensive Care Units; Delirium; Nursing Care; Critical Care; Patient Safety.

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¹Hospital São Lucas da Pontifícia da Universidade Católica do Rio Grande do Sul, Unidade de Terapia Intensiva, Porto Alegre, RS, Brasil.

²Universidade do Vale do Rio dos Sinos, São Leopoldo, RS, Brasil.

³Hospital de Clínicas de Porto Alegre, Unidade de Terapia Intensiva, Porto Alegre, RS, Brasil.

⁴Universidade Federal de Santa Catarina, Florianópolis, SC, Brasil.

INTRODUCTION

Delirium constitutes a severe condition involving cerebral dysfunction, commonly affecting patients in intensive care units (ICU). It is marked by abrupt onset, presenting with disturbances in attention, disorganized thought processes, and alterations in the level of consciousness. The presence of delirium correlates with increased morbidity and mortality, prolonged hospitalization, greater healthcare costs, and persistent cognitive deficits after discharge. In addition to its high prevalence and substantial economic burden, delirium is strongly associated with significant functional decline¹⁻².

The pathophysiology of delirium is multifactorial and remains incompletely elucidated. The mechanisms implicated encompass neurotransmitter imbalances, systemic inflammation, blood-brain barrier dysfunction, oxidative stress, and disruptions in circadian rhythms. These processes, often overlapping, contribute to the clinical manifestations of delirium, highlighting the need for early identification of at-risk patients or those presenting with such symptoms²⁻³.

Numerous risk factors are linked to the development of delirium, including tobacco use, hypertension, cardiac disease, sepsis, and preexisting dementia. Common triggers comprise respiratory and cardiac insufficiency, shock, metabolic disorders such as hypoglycemia, dysnatremia, uremia, and hyperammonemia, prolonged mechanical ventilation, pain, immobilization, administration of psychoactive or sedative agents, uncorrected sensory impairments, poor sleep hygiene, family isolation, and adverse environmental conditions^{1,3}. Individuals particularly vulnerable, like older adults or those exposed to additional stressors such as infections and specific drugs, demonstrate higher risk².

According to the guidelines provided by the Society of Critical Care Medicine, routine administration of antipsychotics for delirium management in critically ill adults should be avoided, as it does not consistently improve cerebral function¹. Although still under investigation, dexmedetomidine emerges as a promising option, especially in older adults with severe agitation or undergoing weaning from invasive mechanical ventilation³⁻⁵.

Nevertheless, delirium management extends beyond pharmacological approaches. Non-pharmacological interventions remain essential, targeting the mitigation of modifiable risk factors. Such interventions are systematized in the ABCDEF bundle, an evidence-based strategy for delirium prevention and management. The letter A refers to systematic assessment and control of pain; B, to daily interruption of sedation with evaluation of respiratory function; C, to judicious selection of analgesics and sedatives; D, to routine assessment and management of delirium; E, to early and safe mobilization; and F, to family involvement as an active component of care¹.

Additionally, other complementary preventive measures involve effective control of pain, dyspnea, fever, and constipation; the use of eyeglasses and hearing aids; environmental orientation; promotion of sleep by reducing noise; and minimizing the use of sedatives, especially benzodiazepines. Unnecessary invasive procedures should also be avoided; early mobilization and encouragement of self-care must be promoted with continuous attention to adequate hydration and nutrition. Family engagement in cognitive stimulation has a positive impact on patient recovery and comfort⁵.

Recent scientific evidence reinforces the effectiveness of these practices. Interventions such as cognitive stimulation and occupational therapy contribute to reducing the incidence and severity of delirium, particularly when combined with early mobilization.

These strategies include adapted cognitive tasks and frequent reorientation, preserving cognitive function and minimizing acute confusion symptoms in ICU patients⁶⁻⁷.

A study conducted in a neurological ICU demonstrated that multicomponent programs supporting vision, hearing, temporal orientation, and sleep stimulation increased delirium and coma-free days, emphasizing the benefits of a multidisciplinary approach to the recovery of critically ill patients. Such practices have been linked to shorter delirium duration, improved functionality, and reductions in both mechanical ventilation and length of stay⁸.

Despite robust evidence, implementation of these strategies in Brazil continues to face important challenges. These include structural limitations of services, scarcity of human and material resources, institutional resistance, and the absence of standardized protocols^{1,3,6-7}. Even within resource-limited environments, adaptations such as cognitive reorientation, adjustments in lighting, and family engagement may be instituted with positive outcomes^{1,5}.

Within the context of intensive care, nursing assumes a central role in delirium prevention, particularly through early identification of risk factors and changes in consciousness. The quality of nursing care directly influences both the incidence and severity of this clinical condition. Nevertheless, the implementation of non-pharmacological strategies still encounters significant obstacles in clinical routines. Understanding these difficulties is vital for strengthening the role of nursing, enhancing care quality, and improving institutional protocols dedicated to delirium prevention in critically ill patients.

Therefore, this study aimed to identify the challenges involved in implementing non-pharmacological strategies for delirium prevention in critically ill patients.

METHOD

Qualitative research, descriptive and exploratory in nature, was conducted through the analysis of semi-structured interviews with 25 intensive care nurses from five regions in Brazil (North, Northeast, Central-West, Southeast, and South). The study was grounded in the discursive textual analysis approach⁹. Study development followed the COnsolidated criteria for REporting Qualitative research (COREQ)¹⁰ guide, enabling interpretation and reconstruction of meanings focused on participants' perspectives, considering their contexts and subjectivities.

The research team consisted of nurses experienced in intensive care and qualitative research training, which facilitated both interviews and data analysis.

Nurses were purposively recruited through professional networks and institutional contacts, using convenience sampling at scientific events and virtual forums. Initial participant access occurred via electronic invitation presenting the study proposal and the Free and Informed Consent Form. Selection prioritized national geographic distribution, aiming for diversity in realities. No formal refusals followed initial acceptance.

Participants were included until data theoretical saturation was reached, meaning new interviews no longer contributed relevant information to phenomenon understanding¹¹. Data collection occurred between August and October 2023 through individual interviews conducted via Google Meet, each lasting about 30 minutes.

The lead author conducted the interviews that were audio-recorded with participant permission and later fully transcribed.

A semi-structured script was employed, previously tested with four nurses outside the sample to validate clarity and relevance. The script included sociodemographic questions and inquiries such as: "What are the main challenges you face in delirium prevention in your ICU practice?" "Are there established protocols for delirium management in your institution?" and "How do physical structure and institutional policies influence delirium prevention?" Transcript validation by participants did not occur, representing a methodological limitation recognized by authors due to study scope and logistical restrictions during feedback stage.

Inclusion criteria encompassed nurses active in adult ICU for over six months in public and/or private institutions. A minimum period of six months was chosen considering it sufficient for nurse familiarization with ICU and autonomy development in care. Exclusion criteria involved those without direct care activities or occupying exclusively administrative roles.

For qualitative analysis, data underwent discursive textual analysis in three phases: text unitization, categorization, and communication⁹. Interviews were initially organized in electronic spreadsheets using Microsoft Excel®, segmented into units of meaning, grouped by similarity, and subsequently arranged into final thematic categories.

No software was used for textual analysis because the team opted for a manual interpretative analytical process aligned with the discursive textual analysis nature and phenomenological approach prioritizing emergent meanings from participant statements.

Descriptive analyses of participant sociodemographic data (gender, age, academic degree, professional experience, institution type, number of beds, and ICU infrastructure) were presented with absolute and relative frequencies.

The study received approval from the Research Ethics Committee of the *Universidade do Vale do Rio dos Sinos* (UNISINOS), under opinion No. 6.069.259. Participant identity was preserved by coding according to country region and sequential interview number.

RESULTS

Among the 25 intensive care nurses participating, the majority were female (68%), aged between 24 and 49 years. All held specialization degrees, with 80% specialized in intensive care, 20% holding master's degrees, and 12% doctorates. Regarding employment, 52% worked in private institutions and 48% in public ones. Most (88%) worked in high-complexity ICUs, with professional training ranging from 2 to 22 years and ICU experience varying between 6 months and 16 years. During their shifts, nurses were responsible for direct care of up to 10 patients, while nursing technicians generally cared for up to two patients.

ICUs had a mean of 21 beds. Structurally, 68% had windows and clocks, 64% had televisions, 12% used music as a therapeutic resource, and 4% applied chromotherapy. Measures aimed at sleep hygiene were present in 92% of units. Although 52% of professionals reported training on delirium, only 32% mentioned using instruments

such as the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) and the existence of specific protocols for delirium management.

The paragraphs below present challenges to implementing non-pharmacological delirium prevention strategies, organized into three categories: (1) absence of protocols and tools for delirium identification; (2) ICU environment and infrastructure characteristics; and (3) family inclusion and participation in intensive care. Based on analyzed data, problems faced by nurses from different Brazilian regions in ICU delirium management were identified.

1. Absence of protocols and tools for delirium identification

The lack of specific protocols for delirium prevention and management reveals a significant gap in care standardization for this critical condition. The absence of protocols impairs both prevention and early recognition of delirium.

We have nothing that directs care for delirium. We started thinking about implementing something, but then the pandemic came, and we are still trying to resume. (Northeast/1)

We do not have scales to assess delirium nor protocols in the ICU to treat or prevent it. (Central-West/3)

Other nurses highlight ongoing discussions and efforts to develop protocols, especially regarding sleep hygiene, mentioning a rudimentary approach that incorporates indirect actions related to delirium:

There is no delirium prevention protocol. What we have are some measures to prevent delirium, but nothing well established. (Central-West/1)

A protocol is under development. We do not have a sleep hygiene protocol, but we try to manage lights and noises and situate the patient. (South/3)

There is not an established protocol yet, but discussion is underway to implement it in the future. (North/3)

The lack of assessment tools such as CAM-ICU compromises nursing teams' ability to diagnose and monitor delirium accurately, indicating a structural weakness in delirium management in many ICUs. Sometimes evaluation occurs informally, without proper instruments for continuous nursing monitoring.

So, in the period I have been working in the ICU, we do not use that tool; we mainly use the Richmond Agitation-Sedation Scale (RASS), which we use a lot. I have never seen the CAM-ICU scale here. (North/2)

We do not have an instrument to assess delirium. Sometimes we call in a professional, we call the psychologist or psychiatrist to evaluate, but, for identification and prevention, mainly, we do not have anything. (Northeast/3)

There is an evaluation by the nurse during daily bedside visits, but we do not use any specific tool to investigate delirium presence. (Central-West/2)

Although some units use instruments like RASS, the absence of specific tools for delirium detection undermines standardized and consistent diagnoses. Some reports even reveal total lack of structured evaluation methods:

We do not have scales or any other specific method used to assess delirium in the ICU. So patients in the ICU are exposed to what is in front of them, for example, they see other patients in more severe conditions, often intubated, even though curtains are closed. (Southeast/1)

These accounts illustrate the urgent need for standardized protocols and tools for delirium identification and prevention, emphasizing the importance of a systematic approach to improve patient safety and well-being in ICUs.

2. Physical environment and ICU infrastructure

The physical environment of intensive care units strongly influences patient orientation and well-being, significantly contributing to delirium risk. The absence of natural light, prevalence of intense and continuous artificial lighting, and limited window access hinder circadian cycle perception.

We have beds with windows, but they are located behind the patient, with the bed's headboard facing the window. So the patient cannot see the window and does not know whether it is day or night. (Northeast/3)

There are no windows in the ICU, only artificial lighting, which stays on 24 hours a day, so the patient cannot distinguish day from night. (Northeast/5)

Half of the ICU beds lack window access, so we try to keep mechanically ventilated patients in those beds without windows. Whenever the patient is waking up or awake, we prioritize beds with windows. (South/5)

Additionally, constant noise from equipment, alarms, and side conversations, along with nighttime procedures, compromises patients' rest, increasing disorientation and delirium risk.

In some ICU beds, there is a medium-sized tilt window, but the beds are isolated, and patients cannot tell if it is day or night. The artificial lighting is very strong, and noise is always intense. (Northeast/2)

The ICU environment is one of the main factors contributing to patient disorientation. Many beds lack windows, the setting is often cold and impersonal, with constant alarms, artificial lighting, and extensive technology use. (Northeast/3)

Noise is a major problem in our ICU. I work in a 30-bed ICU, and the staff is very large. So with so many people working at once, maintaining a quiet environment is complicated. (Northeast/2)

Noise indeed is a problem in our ICU, along with lighting. We try to monitor the team to minimize noise, you know? Avoid unnecessary sounds, side conversations. But even so, it is difficult. (Southeast/4)

When there is a critically ill patient needing prolonged procedures or an admission in the middle of the night, unfortunately noise levels increase considerably, and sound control becomes compromised. (South/3)

Besides these structural conditions, the absence of devices to aid temporal orientation and sensory stimulation, such as clocks, televisions, or radios, was reported as an aggravating factor.

In the ICU where I work, there are no windows, lighting is only artificial, plus there is a lot of noise, no clocks or televisions for patients. (Northeast/5)

In the private environment, we have televisions, clocks, everything to orient patients. But the public service lacks these; the ICU there has no windows, no TV, no possibility for patients to listen to music, only artificial light. (Northeast/2)

The ICU has no clocks or television, few windows, and almost no sun exposure. Additionally, it is a closed place with lots of noise at night. (Central-West/4)

In our ICU, beds are individualized with good artificial lighting but no clocks or televisions. The only stimuli for patients comes when family members bring battery-powered radios. (Northeast/3)

There are glass windows, but no clocks or televisions, anything that could distract patients. (Central-West/3)

We could have a television, music, or another way for patients to distract themselves and interact. (Southeast/1)

3. Family inclusion and participation in Intensive Care

Short and restricted visiting hours in ICUs limit family support for patients, negatively impacting the patient's sense of comfort and security.

We have only one visiting period per day lasting 30 minutes. Two people may enter, each remaining 15 minutes with the patient, and visitors must wear gowns due to biosafety care. (Central-West/1)

Visiting occurs in two 30-minute periods, morning and afternoon. Depending on the need, the physician or nurse may allow longer visits or nighttime access, but such concessions are rare. (Northeast/5)

Visiting hours last 30 minutes; exceptions are made in more severe cases or psychological support needs when possible. (Central-West/3)

We sort of disobey institutional rules because the set visiting time is only one hour per day. Based on studies and experience, when visitors stay longer, it benefits the patient. (Northeast/1)

Moreover, limited flexibility for extended or alternative visit hours in some units hampers active family participation, impairing emotional support continuity and patient orientation during treatment.

For some cases, such as brain death or poor prognosis, we allow extended visits. However, this is not routine and depends on the professional on duty. For patients at risk of delirium or with existing delirium, extended visits are not permitted. (Central-West/1)

Visits are only permitted for 30 minutes in the afternoon, with up to two people per period. (North/4)

Visits unfortunately only happen during institutionally authorized times, with no possibility for longer family stays. (South/4)

There are two daily visits lasting 30 minutes each, with up to two family members allowed. Extended visits are possible in some cases but very difficult. (North/1)

In the ICU [...], visit time depends on the mood of the shift nurse. Visits last about 20 minutes. It is difficult because some patients are awake and miss their family or children, and we know presence would do a lot of good. (Southeast/1)

These restrictions indicate a need for more flexible policies promoting family involvement, essential for delirium prevention and patient well-being.

DISCUSSION

Delirium may affect over 80% of patients, occurring predominantly in older adults, with or without a history of dementia. Despite the relevance of this topic, approximately 3% to 66% of delirium cases remain undiagnosed in ICUs, and only 16% of professionals report daily use of a specific assessment scale^{7,12}.

Non-pharmacological interventions are an essential complement to traditional approaches in managing delirium among critically ill patients, widely recognized for effectively reducing incidence and severity of the condition. Recent guidelines emphasize that while pharmacological interventions play an important role in specific situations, implementation of non-pharmacological strategies is crucial to addressing modifiable risk factors, promoting patient well-being, and improving clinical outcomes. Practices such as early mobilization, promotion of a sleep-conducive environment, and family involvement are fundamental to delirium prevention in ICUs¹².

Among the main non-pharmacological interventions recommended by literature are environmental control (noise reduction, lighting adjustment), cognitive reorientation, use of familiar objects, encouragement of physiological sleep, early mobilization, and structured family visits^{1,3,13}.

Use of validated scales is essential for early delirium detection. The most utilized tools include CAM-ICU, Intensive Care Delirium Screening Checklist (ICDSC), and Nursing Delirium Screening Scale (NuDESC), each with specific characteristics and sensitivities¹³.

The ICU environment represents a determining factor in delirium manifestation, often characterized by adverse conditions such as artificial lighting, excessive noise, and lack of orientation resources like clocks and televisions. These features compromise patients' temporal and spatial orientation and significantly increase delirium risk. Continuous exposure to a disorienting environment may intensify mental confusion in critically ill patients. Conversely, environmental interventions such as lighting adjustment to simulate natural day-night cycles, noise reduction, and introduction of appropriate visual and auditory stimuli can positively impact delirium incidence and severity⁴.

Even when it is not possible to eliminate environmental stressors entirely such as equipment noise and artificial light, mitigation strategies such as using amber lights at night, acoustic barriers, ear protectors, and routine organization to reduce nighttime interventions have demonstrated efficacy in reducing harm^{1,3}.

Visiting restrictions in ICUs may adversely affect delirium prevention as family presence plays an essential role in cognition and emotional well-being of critically ill patients. However, institutional limitations hinder prolonged family presence, reinforcing the need for more flexible policies that acknowledge the family's central role in patient-centered care⁷.

Active family inclusion in patient care is an effective non-pharmacological intervention that helps minimize delirium symptoms and improve clinical outcomes⁷.

Integrating family members as part of the care team promotes the ICU environment as a more humanized and supportive space conducive to patient recovery⁴.

Extended visitation protocols such as those suggested by the Institute for Patient- and Family-Centered Care have demonstrated positive effects in reducing delirium incidence and duration and are recognized by nurses as practices fostering humanization and emotional safety for patients^{1,4}.

Structural challenges in ICUs such as absence of windows, inadequate lighting, and excessive noise directly affect patient orientation and well-being, increasing delirium risk. Simple measures like adjusting lighting to simulate natural cycles, reducing noise, and introducing cognitive stimuli may mitigate these impacts. These interventions, combined with technology such as cognitive monitoring tools, contribute to reducing delirium incidence, promoting more effective and humanized care¹².

Results from this study reinforce the relevance of patient-centered care theories and holistic nursing approaches in delirium management in ICUs. Although no specific theory was formally adopted, reports reveal principles of person-centered care¹⁴ and comfort theory¹⁵ emphasizing empathy, family involvement, and attention to the environment. Such approaches highlight the importance of addressing patients' physical, emotional, and social dimensions through integrated care practices. Nurses play an essential role in implementing interdisciplinary strategies from environmental control to family inclusion, consolidating nursing as a mediator of more adapted and humane care⁵.

Developing delirium prevention and management protocols may ensure uniformity and quality in care. Furthermore, continuous multidisciplinary team training is essential for assessment and management, focusing on validated tools for delirium identification such as CAM-ICU¹³. Investment in infrastructure is also necessary to improve patient orientation and comfort through interventions such as lighting adjustment, noise reduction, and adequate cognitive stimuli⁴.

Physical, technological, and family support infrastructure improvement demands material and financial investments that can be challenging, especially in public institutions. Thus, low-cost, evidence-based measures like those proposed in the ABCDEF bundle, adapted to institutional realities, emerge as viable and effective alternatives¹.

Despite contributions from this study, some gaps remain, particularly regarding effective ABCDEF bundle implementation across different regions and hospital realities¹. Moreover, future research should assess sensory technologies' impact such as chromotherapy or interactive auditory devices and investigate institutional and cultural barriers hindering evidence-based practices application in ICU delirium prevention and management³.

Evaluating whether the protocols mentioned by some nurses during interviews translated into perceived improvements in delirium indicators would also be relevant. Reports suggest that where structured protocols exist, professionals note benefits such as reduced need for restraints and greater clinical stability.

This study has limitations related to geographic scope and generalizability of discussed strategies considering cultural and structural peculiarities of other contexts. Nevertheless, it provides significant insights to broaden understanding of nursing practices in ICU delirium prevention.

FINAL CONSIDERATIONS

This study revealed significant challenges faced by intensive care nurses in implementing non-pharmacological strategies for delirium prevention in ICUs in Brazil. The findings highlighted the absence of specific protocols, limited use of standardized assessment tools, environmental inadequacies in ICUs, and institutional restrictions on family participation as important barriers in preventive care for delirium.

Adopting specific protocols, such as systematic use of CAM-ICU, may contribute to early identification of delirium and better guidance for non-pharmacological interventions. Similarly, flexibilizing visitation policies and including family in care processes are strategies highly valued by nurses. Factors such as noise reduction, respect for circadian rhythms, and provision of adequate sensory stimuli were also pointed out as having positive impact on delirium prevention.

The study's findings indicate the need for investments in professional training, structural adaptations, and formulation of institutional guidelines to make preventive practices more effective, promoting safer and more patient-centered care for critically ill patients.

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Corresponding author:

Fábio Silva da Rosa

Universidade do Vale do Rio dos Sinos

Avenida Unisinos, 950. Bairro Cristo Rei – São Leopoldo/RS CEP: 93.022-750

E-mail: fabiorosa18@gmail.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 -

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