

DELIRIUM IN HOSPITALIZED PATIENTS: ANALYSIS OF THE KNOWLEDGE OF STUDENTS AND MEDICAL PROFESSIONALS AND NURSES



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ABSTRACT

INTRODUCTION: Delirium is an acute-onset neuropsychiatric disorder with a fluctuating course that affects attention, consciousness, thinking, perception, memory, and behavior. It has a high prevalence among patients who present to hospital units, especially the elderly. It interferes with morbidity and mortality, increases the length of hospital stay, and causes functional and cognitive decline in the short and long term. Studies show that knowledge about delirium has an impact on interdisciplinary professional practice. The objective of the research was to identify and analyze the knowledge of students and professionals, nurses and physicians, about delirium in hospitalized patients. **METHODS:** This was a quantitative, descriptive, cross-sectional study, with the application of a sociodemographic questionnaire and a Likert scale on delirium knowledge and management, in which the participants were expected to fully agree with the literature. The data were analyzed in correlation, the association between the pattern of responses was obtained using the chi-square test (X²). A significance level of 5% was adopted. **RESULTS:** A sample of 168 participants was obtained, 87 students (51.79%) and 81 professionals (48.21%). Overall, 143 (85.12%) indicated yes, and 25 (14.88%) declared that they did not know how to recognize delirium. However, in the knowledge and management questionnaire, the assertion of the highest total agreement with the literature was below this expectation, with 71.43%, and the lowest with 18.56%. There was a significant difference ($P < 0.05$) between the pattern of answers of totally or partially agreeing with the statements. **CONCLUSION:** The study demonstrated a lack of knowledge among the participants and that interventions in academic training and professional practice are necessary to improve the management of delirium in hospitalized patients.

Keywords: Delirium. Knowledge. Students. Nurses. Doctors.

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INTRODUCTION

Delirium is a syndrome of acute onset and fluctuating course, it can present disturbances of consciousness, attention, perception, thinking, memory, psychomotor behavior, emotions and the sleep-wake cycle. The condition has variable duration and is mild to very severe. (FREITAS, 2022)

It is a neurocognitive disorder involving the domains of attention, executive function, learning and memory, language, motor perception, and social cognition. The diagnostic criteria defined are: disturbance of attention and consciousness, which develops in a brief period and tends to fluctuate throughout the day, with an additional disturbance in cognition, in which the changes are no longer better explained by another preexisting disorder. In addition, there is evidence that it is a direct physiological consequence of another medical condition. (DSM 5, 2013)

For the diagnosis, it is necessary to think about delirium as soon as the patient is presented to the hospital, considering: worsening concentration, slow responses, confusion, visual or auditory hallucinations, reduced mobility, reduced movement, restlessness, agitation, changes in appetite, sleep disorders, difficulty in attending or following requests, withdrawal or changes in communication, mood and/or attitude. (NICE, 2023)

It can be classified into the following subtypes: *Hyperactive* (psychomotor agitation accompanied or not by mood swings and/or refusal to cooperate), *Hypoactive* (hypoactive level of psychomotor activity that may be accompanied by slowness, lethargy and stupor), or *mixed* (disturbance of attention and perception, and the level of psychomotor activity may fluctuate. (DSM 5, 2013)

It is considered common, occurring in 20% to 70% of hospitalized patients, and its prevalence in the community varies from 1 to 2%, increasing to up to 30% in elderly people who arrive at the emergency room. In general hospitalization units, the prevalence increases to approximately 14 to 24%. Postoperative rates range from approximately 15 to 53% of older adults. (ALI, 2023)

Multiple theories describe possible causes of delirium: impairment of cerebral oxidative metabolism, alterations in neurotransmitters such as acetylcholine, generation of inflammatory markers, imbalance in the functioning of the organism and disorganization of neural activity. Multifactorial models define delirium as a result of the combination of a vulnerable patient with predisposing factors, exposure to harmful insults, and association

with precipitating factors. (RAMÍREZ, 2023)

A complete evaluation of its possible reversible causes is necessary, with the main identifiable causes being: infection, intoxication or withdrawal from alcohol/substance, Wernicke's disease, metabolic disorders, hypoglycemia, medications, trauma, seizures, stroke, hypoxia, vitamin deficiencies, endocrinopathies, ingestion of toxins or heavy metals, among others. (ALI, 2023)

The syndrome results in numerous complications and, when presented by the patient already on hospital admission, it can triple the risk of mortality in the elderly. In most cases, the diagnosis is not recorded in the medical records. (LAMA-VALDIVIA, 2023)

Delirium is considered a predictor of functional decline in hospitalized people over 70 years of age. Its presentation affects the patient's functional trajectory and recovery even after 3 months of hospital discharge. (TAVARES, 2021)

It represents a modifiable risk factor for dementia and its progression, and interventions that prevent or minimize delirium may also reduce or prevent long-term cognitive impairment. (FONG, 2022)

In addition to the 70% increased risk of death within six months and unfavorable outcomes, it is also important to consider the economic impact and resource utilization as it increases the total cost of health care. (RAMÍREZ, 2023)

Patients should be evaluated with physical examination and complete clinical history, the classic evaluation of orientation to person, place, situation and time may not be sufficient. In addition to gathering information to define the etiology, a history of substance or alcohol abuse that may suggest intoxication, withdrawal, or vitamin deficiency should be included (ALI, 2022)

There are validated tools for diagnosis, with CAM being one of the most widespread and has been validated with sensitivity of 94% to 100% and specificity of 90% to 95%, including the criteria of acute change in mental status, fluctuating course, inattention, disorganized thinking, and altered level of consciousness. (RAMÍREZ, 2023)

The reliability of CAM as an instrument for screening delirium in ward patients has been tested and is considered a valid, reliable, and rapid tool. (SEDERSTROM, 2021)

Risk factors are divided into *non-modifiable and modifiable*. Key *non-modifiable risk factors* include increasing age and a history of an underlying neurodegenerative disorder, such as dementia. Among the main *modifiable* risk factors are medications, infections, and environmental factors. (RAMÍREZ, 2023)

A total of 33 predisposing factors were identified, with advanced age and cognitive impairment or dementia being the most common, and 112 precipitating factors, which were grouped into 8 main categories: surgical factors, systemic disease or organ dysfunction, metabolic abnormalities, pharmacology, iatrogenic and environmental factors, trauma, biomarkers and neurotransmitters. (ORMSETH, 2023)

Preventing its occurrence and identifying patients at risk is the most effective intervention. Targeting modifiable risk factors and multidisciplinary approaches can decrease their incidence and duration. Interventions that improve cognitive impairment, promote sleep hygiene, early mobilization of the patient, use of hearing aids or glasses, pain control, hydration, nutrition, bowel and bladder functioning are recommended. (RAMÍREZ, 2023)

Even though it is preventable in 30-40% of cases, delirium prevention remains a challenge for health professionals, especially for nurses who constitute the basis of patient care. (VREESWIJK, 2022)

Knowledge about delirium can interfere with interdisciplinary professional practice, both for diagnosing and treating, as well as for preventing cases. Therefore, the research aimed to analyze the knowledge of students and nurses and physicians about delirium in hospitalized patients.

METHODOLOGY

ETHICAL ASPECTS

The Ethics Committee in Medical Research approved opinion number 6,544,124 and the recommendations of resolution 466 on research involving human beings were followed. All participants signed the Informed Consent Form (in person or online), whose consent was a requirement for access to the data collection instrument.

TYPE OF STUDY

A quantitative, descriptive and cross-sectional study was carried out, followed by correlation of variables and statistical analysis.

STUDY SITE AND PARTICIPANTS

The research was carried out with students in the last year of nursing and medicine from a municipal higher education agency in a city in the interior of the State of São Paulo.

Also with nurses and doctors from a Santa Casa de Misericórdia in a municipality in the interior of the State of São Paulo, a non-profit entity with a secondary complexity level, belonging to the Regional Health Department (DRS) IX - Marília, and which is a reference for about 120 thousand inhabitants of the surrounding cities.

INCLUSION AND EXCLUSION CRITERIA

Students from the seventh term of nursing and the eleventh term of medicine were included, since at the time of the research the students were in the first semester of the last year of their courses. Also included were nurses and doctors hired from the hospital's clinical staff, who had been working for more than 6 months. Professionals on vacation or on leave during the data collection period were excluded.

DATA COLLECTION

Data collection took place between January and June 2024. The Informed Consent Form was delivered to the target audience in person or online, whose consent generated access to the sociodemographic questionnaire whose questions were performance as a student or professional, gender, age, time and sector of professional activity. At the end of this session, the participant was invited to answer whether or not he considered himself to know how to recognize a patient in delirium.

Afterwards, the participant had access to the questionnaire with CAM statements, based on the original validated instrument, in which validation study, a sensitivity of 94.1% and specificity of 96.4% were found, with high reliability, being considered a current instrument and gold standard for evaluating delirium in the elderly by non-psychiatrists. The validation and reliability study of the translation into Portuguese of the CAM was carried out by specialists from the Santa Casa de São Paulo School of Medicine, whose team included geriatricians, neurologists, and psychiatrists. (FABBRI, 2001)

The CAM statements were complemented with statements about the management of delirium, which were taken from an instrument based on the recommendations of the NICE institute, which was validated with experts on the subject and published in 2022 in the Nursing Journal of the Midwest of Minas Gerais. For the present study, in line with the researchers' objectives, which aimed to study hospitalized patients in general, questions related specifically to the management of delirium in patients under intensive care involving

mechanical ventilation and sedation were excluded, as they presented criteria restricted to the intensive care environment. (SOUZA, 2022)

Thus, the research instrument was constituted on a 5-point Likert scale, containing 16 statements about knowledge and management of delirium, in which the participant was expected to fully agree with what was recommended in the literature. Each statement contained 5 possible answers, classified from 1 to 5: 1 - strongly disagree (DT), 2 - partially disagree (DP), 3 - neither agree nor disagree (NN), 4 - partially agree (CP), 5 - strongly agree (CT).

ANALYSIS OF THE RESULTS

The data were digitized, tabulated and statistically analyzed in correlation, and then studied within the pertinent technical reliability standards. The descriptive analysis of the data was performed through the absolute and relative frequency of each factor evaluated. The association between the response pattern was obtained using the chi-square test (χ^2). Statistical analyses were performed in Software R (R Core Team, 2022), with a significance level of 5%. (R CORE TEAM, 2022)

RESULTS

The sample consisted of 168 participants, of which 87 were students (51.79%) and 81 were professionals (48.22%). In total, there were 113 women (67.26%) and 55 men (32.74%). In terms of age, in general, most were between 20 and 30 years old. (Table 1).

Among the 87 students, 15 were final-year nursing students and 72 were final-year medical students. Among the 81 professionals, 36 were nurses and 45 were doctors. Regarding the professionals, there was the participation of all the sectors surveyed, most of whom had more than 5 years of experience. (Table 1)

At the end of the sociodemographic questionnaire, there was a question whether the participant considered himself to know how to recognize delirium in patients. The answer was that 85.12% (143) marked yes, and 14.88% (25) considered not knowing how to recognize it. Thus, according to the participants' self-assessment, most considered themselves capable of identifying the patient with delirium.

However, according to the relative frequency per question, the expectation was much lower than the 85% of the participants who answered that they knew how to recognize delirium. The percentage of correct answers was below this value in all

assertions, with a maximum of 71.43% of TC in assertion 16, falling to 18.56% of TC in question number 7, which had the lowest number of correct answers, in general. (Table 2)

Table 1 - Characterization of the sample: sociodemographic data

Variable	Absolute Frequency	Relative Frequency
Acting		
Nursing student	15	8,93
Nursing professional	36	21,43
Medical student	72	42,86
Medical professional	45	26,79
Sector		
Emergency room, urgency or emergency	32	19,04
Clinical and/or surgical ward	36	21,55
Intensive Care Unit – ICU	9	5,35
Hemodialysis	4	2,38
Student	87	51,79
Acting time		
More than 6 months and less than 1 year ago	7	4,16
More than 1 year and less than 5 years ago	18	10,71
For more than 5 years and less than 10 years	23	13,69
More than 10 years ago	33	19,64
Student	87	51,79
Sex		
Female	113	67,26
Male	55	32,74
Age		
Between 20 and 30 years old	77	45,83
Between 30 and 40 years old	46	27,38
Between 40 and 50 years old	30	17,86
Between 50 and 60 years old	11	6,55
Over 60 years old	4	2,38

Source: Author, based on research data

Table 2 - General frequency table in the 5 answer possibilities

Question	Relative frequency (%)				
	DT	DP	NN	CP	CT
1	4,17	2,98	6,55	38,69	47,62
2	14,88	7,74	4,76	44,64	27,98
3	4,76	4,76	1,79	32,74	55,95
4	6,55	7,74	4,76	33,93	47,02
5	4,76	4,17	11,90	46,43	32,74
6	2,98	2,98	3,57	30,36	60,12
7	16,77	16,17	11,38	37,13	18,56
8	5,99	4,79	4,79	32,34	52,10
9	15,48	15,48	12,50	36,90	19,64
10	11,90	15,48	10,12	39,88	22,62
11	12,50	12,50	13,10	33,33	28,57
12	6,51	15,38	4,73	45,56	27,81
13	11,31	8,33	6,55	33,33	40,48
14	1,20	4,19	8,98	29,94	55,69
15	32,74	20,24	5,36	29,76	11,90
16	71,43	13,10	2,98	7,74	4,760

Legend: DT: I totally disagree; DP: I partially disagree; NN: I neither agree nor disagree; CP: I partially agree; CT: I totally agree. Source: Author with research data

Chart 1 - General percentage of answers per question, from TC (1-14) and TD (15 and 16)

Statement of Assertions 1 to 16	%
1. Acute change in the patient's mental status is one of the criteria for diagnosing delirium.	47,62
2. The patient's lack of attention, with difficulty focusing attention on a conversation or interview, for example, is one of the criteria for diagnosing delirium.	27,98
3. Disorganized or incoherent thinking, flow of unclear ideas or unpredictable change of subject, is one of the criteria for diagnosing delirium.	55,95
4. The alteration in the level of consciousness that can oscillate between alert, vigilant, (hyper vigilant, easily frightened), lethargic (sleepy, easily awakened), stupor (difficulty waking up), to how; It is one of the diagnostic criteria.	47,02
5. When there is a lack of attention, this behavior can vary in the interview or throughout the day, fluctuating between appearing and disappearing or increasing and decreasing in severity, it is one of the characteristics of delirium.	32,74
6. Being disoriented in the interview or throughout the day, in time and space, thinking that you are somewhere other than the hospital, or with a wrong notion of the time of day, indicate delirium.	60,12
7. Memory impairment such as inability to remember events or instructions, indicates delirium.	18,56
8. Perception disorders such as hallucinations, illusions or misinterpretations, indicate delirium.	52,10
9. Psychomotor agitation during the interview or at some time of the day such as pinching blankets, pattering fingers or sudden and frequent change of a position, indicate delirium.	19,54
10. Abnormal decrease in motor activity such as lethargy, staring into the void, staying in the same position for a long time, or exaggerated slowness in movements, indicate delirium.	22,62
11. Alterations in the sleep-wake cycle, such as excessive daytime sleepiness and nocturnal insomnia, indicate delirium.	28,57
12. Considering its main characteristics, attention disorder is essential to confirm the diagnosis of delirium.	27,81
13. Delirium prevention measures include the use of hearing and vision orthoses, regular visits from family and friends, strict control in the use of benzodiazepines, pain control, and decreased interruption of nighttime sleep.	40,48
14. Nurses play an important role in the identification and prevention of delirium, therefore, it is essential that they screen for the disease in a systematic way.	55,69
15. For the application of the assessment of delirium at the bedside, there is no need for a flowchart. The best way is to talk to the patient about himself, ask about his current situation of the patient. disease trying to predict changes in the level of consciousness. This makes it enough to tell if he is in delirium or not.	32,74
16. The evaluation made by the professional from the previous shift is reliable, which makes a new evaluation unnecessary.	71,43

Legend: DT: I totally disagree; CT: I totally agree. Source: Author with research data

Chart 1 shows the answers of the students and professionals, with the percentage of total agreement in statements 1 to 14, and total disagreement with statements 15 and

16. It was noticed that many of the participants only partially agreed on questions 1 to 14, and many only partially disagreed on questions 15 and 16. Thus, the statistical analysis revealed a significant difference ($P < 0.05$) between the pattern of answers partial and total agreement in answers 1 to 14, and in the pattern of answers partial and total disagreement in answers 15 and 16 (Table 2).

The first statement brought the concept of acute change in the patient's mental state as one of the criteria for diagnosing delirium. Most people totally agreed, 47.62%, but 38.69% partially agreed, showing that there are doubts about this diagnostic criterion (Table 2).

The next statement brought the patient's lack of attention, difficulty in focusing attention on a conversation or interview, as one of the criteria for diagnosing delirium. The majority only partially agreed, 44.64%, which is also noteworthy, as this is another important diagnostic criterion (Table 2).

Next, the questionnaire had a sentence about disorganized or incoherent thinking, flow of unclear ideas or unpredictable change of subject, making up one of the criteria for diagnosing delirium. The majority of participants totally agreed, 55.95%, and 32.74% partially agreed (Table 2).

Another diagnostic criterion was about the alteration in the level of consciousness, which can oscillate between alert, vigilant, (hyper vigilant, easily frightened), lethargic (sleepy, easily awakened), stupor (difficulty waking up), even coma. The majority totally agreed, 47.02%, and 33.93% partially agreed. (Table 2)

A fundamental characteristic for understanding delirium is fluctuation, and there may be a lack of attention, with behavior that may vary in the interview or throughout the day, fluctuating between appearing and disappearing or increasing and decreasing in severity. It is observed that 32.74% totally agreed and 46.93% partially agreed (Table 2).

From the sixth statement to the eleventh statement, there were statements that said what may indicate delirium, so that the diagnostic hypothesis for the patient could be considered by the professional.

The fact that the patient is disoriented in the interview or throughout the day, in time and space, thinking that he is somewhere other than the hospital, or with a wrong notion of the time of day, may indicate delirium, and this was in general the second most correct question, 60.12% totally agreed (Table 2).

On the other hand, regarding memory impairment, inability to remember events or instructions, as an indicator of delirium, only 18.56% totally agreed and 37.13% partially agreed (Table 3).

Regarding perceptual disorders, hallucinations and illusions or erroneous interpretations of reality, situations that may indicate delirium, the majority, 52.10%, totally agreed and 32.34% partially agreed (Table 2).

In the question that described psychomotor agitation during the interview or at some time of the day, such as pinching blankets, tapping fingers or a sudden and frequent change of position, as indicators of delirium, only 19.64% totally agreed, 36.90% partially agreed. (Table 2).

Abnormal decrease in motor activity, lethargy, staring into the void, remaining in the same position for a long time, or an exaggerated slowness in movements, are other situations that can be considered as indicators of delirium. Only 22.62% totally agreed, 39.88% partially agreed with the statement (Table 2).

Alteration of the sleep-wake cycle, excessive daytime sleepiness, and nighttime insomnia can also be indicators of delirium. In this question, 33.33% partially agreed, and only 28.57% totally agreed (Table 2).

Faced with the statement that attention disorder is essential for the confirmation of the diagnosis, only 27.81% totally agreed, 45.56% partially agreed. (Table 2).

Comprising the delirium prevention measures, which include the use of auditory and visual orthoses, regular visits from family and friends, strict control of the use of benzodiazepines, pain control and reduction of nocturnal sleep interruption, the majority, 40.48%, totally agreed with the statement, but 33.33% partially agreed (Table 2).

Nurses play an important role in the identification and prevention of delirium, therefore, it is essential that they perform screening in a systematic way, and most participants, 55.59%, totally agreed with this statement, but 29.94% partially agreed (Table 2).

For the application of the bedside assessment, the questionnaire showed that there is no need for a flowchart, the best way would be to talk to the patient, which would be enough to tell if he is in delirium or not. The expected in this case was to disagree completely, however only 32.74% of the participants totally disagreed, 20.24% partially disagreed, and 41.66% agreed with a false statement. (Table 2).

Regarding the evaluation made by the professional from the previous shift being reliable, which makes a new evaluation unnecessary, it was the question with the highest number of subjects indicating what was expected, 71.43% totally disagreed and in fact it was a false statement. (Table 2).

DISCUSSION

Professional performance with competence for the provision of health care depends on knowledge, skills and attitudes. To identify the clinical picture, it is necessary to know the criteria involved, any doubt or partial knowledge impairs the evaluation and management of patients who may present delirium during hospitalization, or who already have the syndrome installed since hospital admission. (MYAKAVA, 2021)

SHARP START AND FLUCTUATING STROKE

When items 1 and 5 of chart 1 are observed, there are assertions about acute onset and fluctuating course. Development in a short period with fluctuation throughout the day are indispensable criteria for the detection of delirium. (DMS, 2013)

The assertions of these items had total agreement responses from the participants of 47.62% and 32.74%, respectively, evidencing doubts about it.

The teaching of delirium in undergraduate health care is essential to enable future professionals to recognize and manage this often underdiagnosed condition in clinical settings. Early identification of delirium is crucial as it significantly influences patient recovery and can reduce associated morbidity and mortality. Integrating delirium education into the curriculum allows students to understand its pathophysiology, risk factors, clinical presentation, and prevention and management strategies. This education is especially important in fields such as medicine and nursing, where mental state assessment and effective communication with patients are key. An educational approach can prepare students to deal with this condition effectively by improving the quality of care provided. (DORIGON, 2023)

ATTENTION DISTURBANCE

Items 2 and 12 of chart 1 indicate inattention, difficulty in focusing the patient's attention or distraction, and that they are necessary criteria for diagnosing delirium. From

the statements in this category, the participants answered 27.98% and 27.81% of total agreement, respectively.

The data collected is alarming and contributes to the underdiagnosis of delirium, which in the literature can reach up to 70% of cases, which certainly has the consequences of lack of appropriate conduct, increased length of hospital stay, and complications. (MACIEL, 2021)

Studies show that underdiagnosis of delirium is a significant problem in clinical practice, especially in hospital settings. The causes of underdiagnosis are often related *The lack of knowledge* by health professionals, who may not be sufficiently familiar with the signs and symptoms involved. In addition to that too *The stigma* (which can lead to confusion with dementia or as a normal part of aging), *inadequate and superficial evaluation* especially in patients with multiple comorbidities or in emergencies, and *the variability of symptoms itself*, which can fluctuate, making it difficult to recognise. (INOUE, 2014)

Inattention has a significant impact on the patient's ability to participate in daily activities and interact with others, further increasing the risk of complications. Recognizing inattention as a criterion for diagnosing delirium is essential, as it allows for early identification and appropriate intervention, improving patient outcomes. The use of screening tools such as CAM can help identify delirium and assess inattention in a systematic way. (INOUE, 2014)

DISORGANIZED THINKING

Regarding the assertion of disorganized thinking, item 3 of chart 1, the percentage of total agreement of the participants was 55.95%.

Disorganized, incoherent, disordered thinking is a criterion for the diagnosis, which may or may not be present in the patient with delirium. It is a significant cognitive alteration, considered common, which makes a differential diagnosis with other mental disorders, and its recognition is essential. (INOUE, 2014)

The assessment of disorganized thinking can be challenging for nurses and physicians because the alteration can manifest itself in various ways, varying between individuals and over time. In emergency or hospital settings, professionals may be more focused on treating acute physical conditions, which can lead to an incomplete assessment of psychological and cognitive aspects. (INOUE, 2014)

Disorganized thinking often occurs in conjunction with other signs and symptoms, such as hallucinations, which can divert the professional's attention and make it difficult to assess the patient.³⁶

Another analysis that should also be made is that not all health professionals have specific training in mental health, which can result in difficulty in assessing thought-related symptoms. (FONG, 2009)

On the other hand, studies show that the stigmas associated with mental disorders can influence the perception of professionals, resulting in prejudices that affect the approach to the patient. (WITLOX, 2010)

A recurring discussion in the literature is that although there are tools to assess mental state and cognition, professionals may not have access to, or may not have protocols to make use of these resources, or may not have the necessary knowledge to use an assessment instrument effectively. (HSHIEH, 2018)

ALTERED LEVEL OF CONSCIOUSNESS

In the assertions of items 4, 9, 10 and 11 of Chart 2, about changes in the level of awareness of the scope of delirium, which may or may not be present in the affected patients, the percentages of total agreement of 47.02%, 19.54%, 22.62% and 28.67% respectively were obtained.

Clearly, both categories of participants showed lack of knowledge on the subject, especially about the more subtle alterations, including drowsiness and mild restlessness, situations that can lead to the diagnosis of hypoactive or mixed delirium. According to the literature, this is a frequent clinical circumstance of delirium, but it is the most underdiagnosed and the least reported in medical records. Studies indicate that hypoactive delirium is less recognized than hyperactive delirium. This is because in hypoactive delirium patients are less disruptive. In these situations, caregivers can provide information about the presence of hypoactive delirium by reporting excessive sleepiness, sadness, and altered appetite and sleep. (RAMÍREZ. 2023)

It is thus a finding that is in line with the data in the literature. In addition to the need for theoretical training that adequately addresses the topic, studies show that disability occurs due to the lack of practical experience of students in clinical environments that allow observation and recognition of different types of delirium, including hypoactive delirium.

Practice in real situations would be fundamental for the development of assessment skills. (FONG, 2009)

In addition, there is a tendency to associate delirium mainly with hyperactive or agitated behaviors. This can lead professionals and students to underestimate or ignore the underactive presentation, resulting in a late or incorrect diagnosis. (WITLOX, 2010)

OTHER COGNITIVE ALTERATIONS: DISORIENTATION, MEMORY IMPAIRMENT AND PERCEPTUAL DISORDERS

Delirium often includes disorientation toward time, place, and, in some cases, identity. Statement 6 of chart 1 had 60.12% of total agreement of the participants.

Regarding memory impairment, item 7 of chart 1 presented 18.56% of total agreement of the participants. The patient's memory difficulty, such as remembering events or instructions, may indicate delirium or differential diagnosis for other pathologies such as dementia, for example. However, attention should be paid to the complete clinical evaluation, investigating whether the current deficit represents an acute worsening in relation to the patient's baseline, which would indicate delirium superimposed on dementia. (FONG, 2022)

Recognition of memory impairment as part of the clinical picture of delirium is crucial for early diagnosis. The existence of fluctuation in cognitive symptoms, including those of memory, can influence the erroneous or late diagnosis. (FRIEDMAN, 2015)

Concomitantly with memory alteration, delirium can affect attention, which has an impact on the patient's ability to concentrate during cognitive assessments. Such difficulty results in poor performance on memory tests, which can confuse professionals about the severity of the patient's condition. (WITLOX, 2010)

Statement number 8 of chart 1 discusses perception disorders, and resulted in 52.10% of total agreement of the participants. Perception disorders can include hallucinations, delusions, and depersonalization. Patients with delirium may present with visual or auditory hallucinations, and delusions that may be mistaken for other psychiatric disorders. The identification of these perceptual experiences can lead to the diagnosis of delirium, which is where its importance comes from. (INOUE, 2014)

PREVENTION

Regarding the prevention of delirium, observed in item 13 of chart 1, the participants presented 40.48% of total agreement. The most effective way to avoid delirium is to prevent its occurrence, since there is no specific medication, but rather a set of non-pharmacological and multidisciplinary measures. The participants showed a lack of knowledge about effective prevention practices, which when performed improve the trajectory of the hospitalized patient. (NICE, 2023)

Delirium is preventable in 30-40% of cases, but its prevention remains a challenge for health professionals, especially for nurses who constitute the basis of patient care. (VREESWIJK, 2022)

Given its importance, the result is worrying because it was below expectations. Students and professionals, nurses and physicians, often face difficulties in their knowledge about delirium prevention, which has an impact on the quality of patient care.

Studies show that several factors can contribute to these knowledge gaps: a) formal training more focused on treatments than on prevention; b) the limited opportunities for students and new professionals for clinical practice and development of skills in the identification and prevention of delirium. c) the lack of use of updated guidelines. d) the lack of training and continuing education to keep professionals informed of best practices; e) the low adherence of professionals to continuing education programs; f) the underestimation of the risk of delirium and its negative impact on the affected population, in which many professionals minimize the importance of delirium prevention, due to lack of knowledge, considering it an inevitable phenomenon in vulnerable populations, such as the elderly. (HSHIEH, 2018)

ROLE OF NURSING

Regarding the role of nursing in identification and prevention, an issue indicated in item 14, 55.59% of total agreement was obtained from the participants. The nurse is the professional who is closest to the patient and their families, being able to identify the alterations earlier and thus signal to the other members of the multidisciplinary team, including the doctor. (RAMÍREZ, 2023)

METHOD OF PATIENT ASSESSMENT

In items 15 and 16 of Chart 1, about the method of patient evaluation, the statements were false, and, therefore, it was expected that the participants would totally disagree. Total disagreement was obtained from 32.74% and 71.43%, respectively.

Although there are several protocols available for the development of hospital delirium prevention programs, they are not yet commonly used in many institutions. (VREESWIJK, 2022)

There is a need for staff awareness regarding the importance of delirium. Studies show that screening tools and non-pharmacological interventions need improvement, with the creation of a favorable culture of developing institutional protocols for the management of delirium. (ZHOU, 2023)

It is known that the implementation of protocols for the evaluation of delirium is fundamental in clinical practice, especially in hospital and long-term care settings. These protocols help ensure that delirium is identified and treated effectively.

However, at the time of the research, the hospital where the nurses and physicians invited to answer the questionnaire worked did not use any protocol or flowchart of delirium in patients. Early detection based on well-defined protocols allows interventions to be initiated as soon as possible, improving clinical outcomes, and reducing the duration of delirium and associated complications. (HSHIEH, 2018)

Standardizing assessment through protocols offers an approach ensuring that all health professionals use the same criteria and tools. This helps to minimize variability in clinical practice and ensures consistency in symptom identification. (INOUYE, 2014)

Protocols, when instituted, provide a foundation for education of the professionals involved in its use, from which training can be carried out for the multidisciplinary team, on how to recognize delirium and apply the assessment tools correctly. (FRIEDMAN, 2015)

The implementation of protocols can lead to an overall improvement in the quality of care as it ensures that delirium assessment is an integral part of patient care by promoting appropriate preventive and therapeutic interventions. (WITLOX, 2010)

Documentation and monitoring is another aspect facilitated by the existence of protocols in an institution, as they allow the systematic documentation of the findings of the evaluation and the monitoring of the patient's evolution over time, opening space for treatment plans and necessary interventions. (FONG, 2009)

The operational cost of delirium for hospitals must also be considered. It is true that the proper identification and management of delirium through protocols can reduce the incidence of complications, which in turn can lead to a decrease in hospital costs and length of stay. (HSHIEH, 2018)

CONCLUSION

The overall results corroborate the literature regarding underdiagnosis as a whole, which is even more evident in cases of hypoactive delirium. In addition to underdiagnosis and its consequences, a low performance on prevention strategies was also demonstrated. In general, the participants had difficulty in the topic, with a percentage below the expected in all statements.

Thus, the research showed that interventions in academic training and professional practice are necessary to improve knowledge about delirium. Thus, the authors consider that, from the point of view of academic training, teaching interventions are necessary to increase competence in patients with delirium, especially with regard to the understanding of cognitive domains, diagnostic criteria and prevention. Therefore, it is necessary to include scenarios that also provide the assessment of the mental state of patients in the undergraduate course.

In the professional reality, the authors consider it necessary to intervene in continuing education and establish protocols, in addition to raising awareness about best practices on the subject.

From the present study, the authors intend to develop a technical product for graduation with intervention in active methodology for a better understanding of the cognitive domains and delirium by the students, with the elaboration of a problem situation for tutoring activities. As well as an institutional protocol for standardization of conducts and its implementation in the hospital studied.

Finally, due to the scope of the theme in all hospital sectors and the complexity of its approach, it is considered necessary to provide future education and awareness interventions, which provide the related professional skills and improve the care of hospitalized patients.

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REFERENCES

1. Ali, M., & Cascella, M. (2022). ICU delirium. In StatPearls. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK559073/> (Original work published 2023)
2. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
3. Dorigon, A. T., et al. (2023). Tecnologias digitais de ensino-aprendizagem para equipes de saúde sobre delirium em idosos hospitalizados: Revisão integrativa. *Revista Enfermagem Atual In Derme*, 97(4), Article e0232. <https://revistaenfermagematual.com.br/index.php/revista/article/view/1870/3473>
4. Fabbri, R. M. A., Moreira, M. A., Garrido, R., & Almeida, O. P. (2001). Validity and reliability of the Portuguese version of the Confusion Assessment Method (CAM) for the detection of delirium in the elderly. *Arquivos de Neuro-Psiquiatria*, 59(2-A), 175–179. <https://doi.org/10.1590/S0004-282X2001000200004>
5. Fong, T. G., & Inouye, S. K. (2022). The inter-relationship between delirium and dementia: The importance of delirium prevention. *Nature Reviews Neurology*, 18(10), 579–596. <https://doi.org/10.1038/s41582-022-00698-7>
6. Fong, T. G., Jones, R. N., Shi, P., et al. (2009). Delirium accelerates cognitive decline in Alzheimer's disease. *Neurology*, 72(18), 1570–1575. <https://doi.org/10.1212/WNL.0b013e3181a4129a>
7. Freitas, E. G., & Tavares, B. F. (Eds.). (2022). *Tratado de geriatria e gerontologia* (4th ed.). Editora Guanabara Koogan.
8. Friedman, S. M., Sweeney, M., Kuehnle, K., et al. (2015). The impact of continuing education on healthcare professionals' knowledge and practice regarding delirium: A pilot study. *Journal of Continuing Education in the Health Professions*, 35(3), 177–183. <https://doi.org/10.1002/chp.21296>
9. Hsieh, T. T., Yang, T., & Inouye, S. K. (2018). Delirium: A review of the evidence for diagnosis, prevention, and management. *Journal of the American Geriatrics Society*, 66(2), 274–281. <https://doi.org/10.1111/jgs.15211>
10. Inouye, S. K., Westendorp, R. G. J., & Saczynski, J. S. (2014). Delirium in elderly people. *The Lancet*, 383(9920), 911–922. [https://doi.org/10.1016/S0140-6736\(13\)60688-1](https://doi.org/10.1016/S0140-6736(13)60688-1)
11. Lama-Valdivia, J., Cedillo-Ramirez, L., & Soto, A. (2021). Factors associated with mortality in hospitalized elders in an internal medicine department. *Revista Peruana de Medicina Experimental y Salud Pública*, 38(2), 284–290. <https://doi.org/10.17843/rpmesp.2021.382.6982>
12. Maciel, M. C., Niwa, L. M. S., Ciosak, S. I., & Najas, M. S. (2021). Fatores precipitantes de delirium em pacientes idosos hospitalizados. *REVISA*, 10(1), 117–

126. <https://doi.org/10.36239/revisa.v10.n1.p117a126>
13. Myakawa, L. H. K., Santos, M. A., & Püschel, V. A. A. (2021). Knowledge, skills, and attitudes of nursing students on evidence-based practice. *Revista da Escola de Enfermagem da USP*, 55, Article e20200428. <https://doi.org/10.1590/1980-220X-REEUSP-2020-0428>
14. National Institute for Health and Care Excellence. (2023). Delirium: Prevention, diagnosis and management in hospital and long-term care. <https://www.ncbi.nlm.nih.gov/books/NBK553009/>
15. Orm Seth, C. H., Lahue, S. C., Oldham, M. A., Josephson, S. A., Whitaker, E., & Douglas, V. C. (2023). Predisposing and precipitating factors associated with delirium: A systematic review. *JAMA Network Open*, 6(1), Article e2249950. <https://doi.org/10.1001/jamanetworkopen.2022.49950>
16. Ramírez Echeverría, M. L., Schoo, C., & Paul, M. (2022). Delirium. In StatPearls. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK470399/> (Original work published 2023)
17. R Core Team. (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing. <https://www.R-project.org/>
18. Sederstrom, J. R., Aliory, C. D., Haneman, E. M., & Buras, M. R. (2021). Delirium Triage Screen/Brief Confusion Assessment Method in adult orthopaedic and hematological patients: A validation study. *Orthopaedic Nursing*, 40(1), 16–22. <https://doi.org/10.1097/NOR.0000000000000726>
19. Souza, R. C. S. (2022). Enfermeiros e as práticas recomendadas no manejo de delirium: Estudo transversal. *Revista de Enfermagem do Centro-Oeste Mineiro*, 12, Article e4553. <https://doi.org/10.19175/recom.v12i0.4553>
20. Tavares, J. P. A., Nunes, L. A. N. V., & Grácio, J. C. G. (2021). Hospitalized older adult: Predictors of functional decline. *Revista Latino-Americana de Enfermagem*, 29, Article e3399. <https://doi.org/10.1590/1518-8345.3612.3399>
21. Vreeswijk, R., Maier, A. B., & Kalisvaart, K. J. (2022). Recipe for primary prevention of delirium in hospitalized older patients. *Aging Clinical and Experimental Research*, 34(12), 2927–2944. <https://doi.org/10.1007/s40520-022-02249-y>
22. Witlox, J., Eurelings, L. S., de Jonghe, J. F., et al. (2010). Delirium in elderly patients and the risk of postdischarge mortality, institutionalization, and dementia: A meta-analysis. *JAMA*, 304(4), 443–451. <https://doi.org/10.1001/jama.2010.1013>
23. Zhou, C., Qu, X., Wang, L., Wu, Q., & Zhou, Y. (2023). Knowledge, attitude, and practice regarding postoperative delirium among cardiac surgery nurses: A cross-sectional multi-centre study. *Journal of Clinical Nursing*. Advance online publication. <https://doi.org/10.1111/jocn.16751>