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Kardiyovasküler Cerrahi Yoğun Bakım Hemşirelerinin Deliryuma İlişkin Bilgi Düzeyleri
Knowledge Levels Of Cardiovascular Surgery Intensive Care Nurses About Delirium

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ÖZET

Amaç: Bu çalışma, kardiyovasküler cerrahi yoğun bakım ünitesinde çalışan hemşirelerin deliryum konusundaki bilgi düzeylerini incelemek amacıyla tanımlayıcı bir araştırma olarak gerçekleştirilmiştir.

Materyal ve Metot: Araştırma, İstanbul'da eğitim ve araştırma hastanesinde gerçekleştirilmiştir. Kardiyovasküler cerrahi yoğun bakım ünitesinde çalışan toplam 73 hemşire gönüllü olarak çalışmaya katılmıştır. Veriler, hemşirelerin deliryum konusundaki bilgi düzeylerini değerlendiren "Sosyodemografik ve Tanımlayıcı Bilgi Formu" ve "Yoğun Bakım Hemşireleri için Deliryum Bilgi Testi" kullanılarak toplanmıştır. İstatistiksel analizler SPSS 22.0 programı ile yapılmıştır.

Bulgular: Hemşirelerin "toplam deliryum bilgi puanı" ortalaması 18.219 ± 3.888 olarak bulunmuştur. Alt boyut puanları ise şu şekildedir: "deliryum risk faktörleri ve nedenleri" (6.603 ± 1.963), "deliryum semptomları ve türleri" (1.767 ± 0.993), "deliryum sonuçları" (2.548 ± 0.646), "deliryum değerlendirmesi" (1.863 ± 0.902) ve "deliryumun farmakolojik ve farmakolojik olmayan yönetimi" (5.438 ± 1.364). Bulgular, hemşirelerin bilgi düzeylerinin genel olarak orta seviyede olduğunu göstermektedir.

Tartışma ve Sonuç: Hemşireler, deliryum risk faktörleri ve semptomları konusunda yeterli bilgiye sahipken, hastaların değerlendirilmesi ve deliryum sonuçları konularında eksiklikler olduğu tespit edilmiştir. Ayrıca, hemşireler arasında farmakolojik olmayan yöntemlerin deliryum yönetiminde etkisiz olduğu yönünde yanlış bir algı bulunmaktadır. Bu bulgular, hemşirelik eğitim programlarına kapsamlı deliryum eğitiminin dahil edilmesinin önemini, özellikle pratik teknikler ve teorik bilgiyi vurgulamaktadır.

Anahtar Kelimeler: Kardiyovasküler Cerrahi İşlemler, Yoğun Bakım, Deliryum, Hemşirelik

ABSTRACT

Objective: This study was carried out in a descriptive study designed to examine nurses knowledge level about delirium working in the cardiovascular surgery intensive care unit.

Materials and Methods: The research was conducted at a training and research hospital in Istanbul. A total of 73 nurses working in the cardiovascular surgery intensive care unit participated voluntarily. Data were collected using the "Sociodemographic and Descriptive Information Form" and the "Delirium Knowledge Test for Intensive Care Nurses," which assesses nurses' knowledge about delirium. Statistical analysis was performed using SPSS 22.0.

Results: The mean "total delirium knowledge score" of the nurses was found to be 18.219 ± 3.888. The sub-dimension scores were as follows: "risk factors and causes of delirium" (6.603 ± 1.963), "delirium symptoms and types" (1.767 ± 0.993), "delirium outcomes" (2.548 ± 0.646), "delirium assessment" (1.863 ± 0.902), and "pharmacological and non-pharmacological management of delirium" (5.438 ± 1.364). The findings indicate that nurses' knowledge levels were generally moderate.

Discussion and Conclusion: While nurses demonstrated sufficient knowledge regarding delirium risk factors and symptoms, deficiencies were observed in the areas of patient evaluation and outcomes of delirium. Moreover, there is a misconception among nurses that non-pharmacological methods are ineffective in managing delirium. These findings highlight the importance of including comprehensive delirium education in nursing training programs, emphasizing practical techniques and theoretical knowledge.

Keywords: Cardiovascular Surgical Procedures, Intensive Care, Delirium, Nursing

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INTRODUCTION

Delirium is a common condition in intensive care units, adversely affecting the healing process and complicating nursing care (1). Characterized by fluctuations in consciousness, cognition, perception, and sleep-wake cycles, delirium can prolong hospitalization, increase healthcare costs by approximately 30%, and, more critically, result in severe clinical complications or even death (2).

The incidence of delirium is notably high in intensive care settings due to environmental stimuli, such as monitoring systems and medical equipment sounds, as well as the critical condition of patients (3). After cardiac surgery, patients are typically admitted to intensive care units for stabilization during a vital recovery period (4). The incidence of delirium in patients undergoing cardiac surgery ranges between 10% and 50%, complicating the differentiation between sedation, mechanical ventilation duration, and delirium.

Early detection of delirium is essential for improved clinical outcomes and prognosis. A comprehensive understanding of its risk factors, symptoms, and management strategies is critical for effective patient care (5). This study aims to assess the knowledge levels of nurses working in cardiovascular surgery intensive care units regarding delirium and identify areas for improvement.

MATERIALS AND METHODS

This study was designed as a descriptive research project to determine the knowledge levels of nurses working in cardiovascular surgery intensive care units regarding delirium. The research was conducted at Mehmet Akif Ersoy Thoracic Cardiovascular Surgery Training and Research Hospital in Istanbul between March 15, 2022, and May 25, 2022.

Study Population and Sampling

The study population consisted of 137 nurses working in the intensive care units of the hospital. No specific sampling method was employed; instead, all nurses meeting the inclusion criteria were invited to participate voluntarily. Of the initial population, 51 nurses were excluded from the study because they worked exclusively in the pediatric cardiovascular surgery intensive care unit. The study was completed with 73 nurses who were actively working in adult cardiovascular surgery intensive care units.

Data Collection Tools

Two data collection tools were used:

1. **Sociodemographic and Descriptive Information Form:** This form consisted of 14 questions aimed at gathering demographic data and professional characteristics of the participants, such as age, gender, years of experience, and working hours.

2. **Delirium Knowledge Test for Intensive Care Nurses:** Developed and validated by Öztürk Birge et al., (6) this tool consists of 26 statements that measure knowledge about delirium risk factors, symptoms, outcomes, assessment methods, and management strategies. The total possible score ranges from 0 to 26, with higher scores indicating greater knowledge.

Data Collection Process

Data were collected online via a secure platform to ensure accessibility and ease of participation. Completing the questionnaires took approximately 10 minutes per participant. Responses were anonymized to protect participant confidentiality.

Ethical Considerations

The study was approved by the Ethics Committee of Istanbul Arel University (approval number: 07.01.2022—E-69396709-050.01.04-202310). Informed consent was obtained from all participants before data collection, and institutional permission was secured from the hospital. Participants were assured of their anonymity, and all data were stored securely.

Data Analysis

Statistical analysis was performed using SPSS 22.0. Descriptive statistics such as frequencies and percentages were used to summarize sociodemographic data. Mean, standard deviation, and range values were calculated for knowledge test scores. Reliability of the knowledge test was evaluated, yielding acceptable values (Cronbach's Alpha=0.706, KR-20=0.706, KR-21=0.685). Comparisons between groups were conducted using appropriate statistical tests, with significance set at $p<0.05$.

RESULTS

The average age of the nurses participating in the study was determined to be 27.49 ± 3.54 years, with 58.9% of them aged between 26 and 30. Additionally, 72.6% of the participants were single women. It was observed that the majority of the nurses (84.9%) held an undergraduate degree, 71.2% had less than 5 years of professional experience, and 56.2% had worked in intensive care units (ICUs) for more than 3 years.

Regarding workload, 57.5% of the nurses cared for two patients per shift, while 90.4% worked 40 to 60 hours per week. A significant proportion (84.9%) reported working in a mixed day and night shift pattern. Among the participants, 42.5% stated that they cared for a patient with

delirium almost every week, and 54.8% indicated that they had received prior training on delirium.

The mean total score of nurses on the "Delirium Knowledge Test" was 18.22 ± 3.89. When the sub-dimension scores were examined, the average score for "risk factors and causes of delirium" was 6.60 ± 1.96, for "delirium symptoms and types" was 1.77 ± 0.99, for "delirium outcomes" was 2.55 ± 0.65, for "delirium assessment" was 1.86 ± 0.90, and for "pharmacological and non-pharmacological management of delirium" was 5.44 ± 1.36. (Table 1).

Table 1. Delirium Knowledge Score Averages (n:73)

	N	Mean	Sd.	Min.	Maks.
Delirium Information Total	73	18.219	3.888	7	26
Delirium Risk Factors and Causes	73	6.603	1.963	2	10
Delirium Symptoms and Types	73	1.767	0.993	0	3
Delirium Consequences	73	2.548	0.646	1	3
Delirium Assessment	73	1.863	0.902	0	3
Pharmacological and Non-Pharmacological Management of Delirium	73	5.438	1.364	2	7

When the nurses' answers about delirium were analyzed categorically, the statement "The risk of delirium is higher in patients with limited mobility" was correctly identified by the highest percentage of participants (83.6%, n=61). In contrast, only 24.7% (n=18) of the participants correctly responded to the statement "Benzodiazepine/opioid drug treatment reduces the risk of delirium."

Considering the answers given by the nurses regarding the symptoms and types of delirium, it was revealed that 69.9% of the participants recognized that lethargy and dullness could be symptoms specific to hypoactive delirium. Regarding the consequences of delirium, the majority of nurses (93.2%) stated that delirium prolongs the patient's stay in the intensive care unit, and 84.9% (n=62) indicated that it increases the cost of patient care.

When analyzing responses related to the evaluation of delirium syndrome during patient care, 46.6% of the nurses believed that delirium could be easily detected using a reliable measurement tool. Additionally, 86.3% of the participants correctly responded to the statement: "Delirium assessment should be conducted at least once in every shift and regularly."

Regarding the management of delirium in the intensive care setting, 75.3% (n=55) of the nurses stated that non-pharmacological approaches are effective in preventing delirium. Furthermore, 86.3% (n=63) emphasized the importance of early mobilization in delirium management. However, only 38.4% (n=28) were aware that visiting restrictions should not be applied to patients with delirium.

When analyzing the factors influencing nurses' total and sub-dimension delirium knowledge scores, gender emerged as a significant variable. Female nurses scored higher in both total delirium knowledge and the "delirium outcomes" sub-dimension compared to their male counterparts ($p < 0.05$).

The duration of professional experience, type of work, and the number of patients cared for were also found to be associated with delirium knowledge scores. Nurses with more than three years of professional experience scored lower in the "delirium symptoms" and "delirium management" sub-dimensions than those with less than three years of experience ($p < 0.05$). Moreover, nurses who provided care to more than three patients had higher total delirium knowledge and "delirium management" sub-dimension scores compared to those who cared for fewer patients ($p < 0.05$).

Additionally, the total delirium knowledge and "delirium management" sub-dimension scores were higher among nurses who provided care to more than three patients per shift compared to those who cared for fewer patients ($p < 0.05$).

Another significant factor influencing knowledge scores was the nurses' working style. Nurses working mixed day and night shifts had higher scores in the "delirium assessment" sub-dimension compared to those working exclusively during the day or night ($p < 0.05$).

On the other hand, no statistically significant differences were found in the total or sub-dimension scores of delirium knowledge based on marital status, educational background, weekly working hours, frequency of encountering patients with delirium, or living with an elderly or psychiatric individual ($p > 0.05$).

DISCUSSION

Although delirium is a syndrome with a high prevalence among patients hospitalized in intensive care units (ICUs), it is often overlooked due to its similarities with conditions such as intensive care syndrome, depression, or dementia (7). Studies investigating the risk factors for delirium in ICUs highlight several contributors, including disruptions to the sleep-wake cycle caused by noise, inadequate nutrition and hydration, ineffective pain management, patient immobility, inappropriate lighting, environmental temperature, patient care and

treatment practices, mechanical ventilation, and the medications administered (8-12). Given these numerous factors that increase the risk of delirium, it is essential for nurses responsible for ICU patient care to recognize these risks. This knowledge enables them to implement necessary adjustments and take preventive measures effectively (13). Of the 26 questions included in the knowledge test used in this study, ten focused on the risk factors and causes of delirium, with a maximum possible score of 10 points. The participants' mean score for this section was found to be 6.603. The most commonly recognized risk factors for delirium among nurses were movement restriction, prolonged mechanical ventilation, and changes in the patient's sensory status.

In a study conducted in 2016 with 100 nurses, it was reported that factors such as age, previous surgeries, dementia, psychological problems, chronic illnesses, and ICU stays exceeding 48 hours were identified as significant risk factors for delirium 5. Similarly, a more recent study highlighted additional factors, including invasive and surgical interventions, prolonged hospital stays, neurological or psychiatric disorders, excessive or narcotic drug use, isolation from social interactions, alcohol and substance abuse, patient immobilization, and hypoxia, as contributors to delirium risk 3. When the literature is reviewed, it is evident that nurses generally have a good understanding of the risk factors associated with delirium (14,15).

Delirium is a syndrome characterized by a sudden onset, a fluctuating course, and various clinical subtypes (16, 17). For nurses, recognizing the signs and symptoms of different types of delirium is crucial for the early detection and effective treatment of potential complications in the patient population under their care. In a study conducted in 2019, nurses reported observing symptoms such as disorientation, hallucinations, agitation, lack of attention, disturbances in the sleep-wake cycle, hyperactivity, disinterest in the environment, delusions, forgetfulness, and hopelessness in patients diagnosed with delirium (18). Similarly, another study involving 75 nurses revealed that 78.7% of the participants were familiar with the most common symptoms of delirium (19).

In this study, more than half of the participating nurses recognized that lethargy and dullness could be features of hypoactive delirium and understood that agitation is not present in all types of delirium, reflecting an awareness of the diverse clinical presentations of delirium. The findings also revealed that nurses who had worked in the unit for more than three years scored higher on the "delirium symptoms and types" sub-dimension compared to those with one to three years of experience. Similarly, nurses who had received education on delirium had higher scores in the "delirium risk factors and causes" sub-dimension than those who had not received such education.

Although delirium is a reversible condition, it can lead to mortality if the underlying causes are not promptly treated. In a 2020 study involving 174 nurses, 81% correctly identified that delirium prolongs the patient's stay in the intensive care unit, and 87.9% recognized that it increases the cost of patient care. However, only 14% of the participants were aware that delirium is a significant factor influencing mortality rates in ICU patients (20). In a similar study, 30.2% of the nurses stated that they were unaware of the implications of delirium (21). Consistent with the literature, the majority of participants in this study believed that delirium could lead to a prolonged stay in the intensive care unit and an increase in the cost of patient care. However, 76.7% of the participants incorrectly stated that delirium does not affect the mortality rate of ICU patients. This misconception may stem from the severe clinical conditions of ICU patients, where death is often considered an expected outcome and not directly associated with delirium. To facilitate early detection of delirium, various assessment scales have been developed and integrated into clinical practice. Nurses must be well-versed in these tools and employ them effectively in patient care. While most participants in this study agreed that delirium should be evaluated during every shift, more than half believed that delirium assessment is less time-consuming when performed by trained individuals. Additionally, many participants perceived that delirium cannot be easily detected, even with the use of reliable measurement tools.

A study by Oosterhouse et al. (2016) reported that ICU nurses perceived delirium assessment as a significant challenge in the care of patients with delirium; however, their knowledge about delirium remained insufficient (22). Similarly, another study concluded that nurses play a pivotal role in the early detection of patients at risk for delirium. Despite this, nurses' knowledge was found to be inadequate in areas such as diagnosing delirium, identifying risk groups, understanding symptoms, and managing the condition (23).

In this study, it was observed that nurses working mixed day and night shifts achieved higher delirium assessment scores compared to those working exclusively during the day or night. Based on the literature, addressing the diverse clinical presentations of delirium and incorporating content on its prevention, diagnosis, and treatment—as well as the management of potential complications—into nursing education is crucial. This approach would help ensure nurses feel more competent in evaluating delirium.

Although pharmacological interventions are commonly used in delirium management, recent findings highlight the effectiveness and importance of non-pharmacological methods. Studies have demonstrated that the incidence and duration of delirium significantly decrease with the application of non-pharmacological strategies in the ICU (24, 25). For instance, a 2012 study

revealed that the majority of nurses implemented various practices to manage delirium, including communicating with patients to provide orientation, reducing environmental noise, controlling pain, arranging patient visits with relatives, adjusting lighting, supporting mobilization, ensuring the use of personal aids (e.g., glasses and watches), preventing infections, and placing calendars and clocks within the patient's view to aid orientation (26).

In Başpınar's (2019) study, nurses emphasized the importance of speaking to patients with delirium in a clear and appropriate tone, avoiding restraint during agitation, adopting an empathetic approach, and encouraging patients to communicate with their relatives to help calm them down. They also highlighted the necessity of implementing practices such as adjusting lighting according to the sleep-wake cycle, reducing noise, maintaining communication with the patient, preventing infections, controlling pain, supporting the use of personal aids (e.g., hearing aids and glasses), and ensuring patient safety to prevent self-harm (21).

In the current study, most participants stressed the importance of education and an interdisciplinary team approach for effective delirium management, with early mobilization identified as a critical intervention. The findings indicated that nurses' knowledge about delirium management aligns with the existing literature. Overall, the nurses' delirium management knowledge scores were found to be above average, with higher scores observed among nurses who had more experience and cared for more patients. This difference is likely attributable to the clinical exposure and opportunity to assess patients at various times of the day. Interestingly, 75.3% of the nurses in this study believed that non-pharmacological approaches were ineffective in preventing delirium (n=55). Similarly, in the study conducted by Temiz and Sayılgan Aydın (2021), a majority of nurses shared this misconception regarding the effectiveness of non-pharmacological methods (20). However, adopting non-drug approaches in delirium management is essential for improving the quality of patient care. Nurses should be encouraged to utilize these strategies more effectively.

CONCLUSION

The analysis of the research results revealed that the total and sub-dimension delirium knowledge scores of nurses working in the cardiovascular surgery intensive care unit were at a moderate level. Factors such as professional experience, the number of patients cared for, and shift patterns were found to influence the nurses' knowledge scores, suggesting that these variables provide opportunities for nurses to view delirium syndrome from different perspectives.

While the nurses demonstrated sufficient knowledge regarding the signs and symptoms of delirium, gaps were identified in the sub-dimensions related to evaluating patients with delirium and understanding the outcomes of delirium. Moreover, it was found that many nurses perceived non-pharmacological methods for managing delirium as ineffective.

Based on these findings, it is recommended that delirium syndrome be included as a key component in both formal and postgraduate nursing education. This training should encompass theoretical knowledge as well as practical techniques to foster attitude and behavior changes, ensuring nurses are well-equipped to manage delirium effectively.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Ethics Approval and Consent

The study was approved by the Ethics Committee of Istanbul Arel University (approval number: 07.01.2022—E-69396709-050.01.04-202310). Informed consent was obtained from all participants before data collection, and institutional permission was secured from the hospital. Participants were assured of their anonymity, and all data were stored securely.

Conflict of Interest

No conflict of interest was declared by the authors.

Author Contributions

DS; Plan, design, AG; Data analysis and comments, DS and AG; Material, methods and data collection, writing and corrections.

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