EURASIAN JOURNAL OF EMERGENCY MEDICINE

DOI: 10.4274/eajem.galenos.2025.84770

Original Article

Eurasian J Emerg Med.

The Effect of Delirium Knowledge Level Among Intensive Care Patients' Relatives on Family Care Satisfaction: A Cross-Sectional Study

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Abstract

Aim: Delirium affects 20-80% of intensive care unit (ICU) patients and significantly impacts family members' psychological well-being and care satisfaction. However, the relationship between family members' delirium knowledge and their satisfaction with ICU care remains understudied. This study investigated the association between ICU patients' relatives' delirium knowledge levels and their care satisfaction, while identifying key predictors of family satisfaction.

Materials and Methods: This cross-sectional study was conducted between January and April 2024 at Turgut Özal Medical Center, Malatya, Türkiye. The study included 305 family members of ICU patients hospitalized for ≥48 hours. Participants were recruited using convenience sampling from four ICUs (internal medicine, coronary, neurology, and medical oncology). Data collection instruments included: Caregiver Characteristics Form, Caregiver Intensive Care Delirium Knowledge Questionnaire-Turkish Version (CIDKQ-T), and Family Satisfaction in the Intensive Care Unit scale (FS-ICU-24). Statistical analyses included descriptive statistics, Pearson correlation coefficient/Spearman's rank correlation, and multiple linear regression.

Results: Participants demonstrated moderate delirium knowledge (CIDKQ-T mean: 11.62±2.54, range: 0-21) and moderate ICU care satisfaction (FS-ICU-24 mean: 52.14±14.48, range: 0-100). Strong positive correlations were found between delirium knowledge and all FS-ICU-24 dimensions: total satisfaction ($r=0.60$, $p<0.001$), care satisfaction ($r=0.45$, $p<0.001$), decision-making satisfaction ($r=0.53$, $p<0.001$), and information satisfaction ($r=0.48$, $p<0.001$). Multiple regression analysis ($R^2=0.36$, F (7.142) = 12.85, $p<0.001$) identified delirium knowledge as the strongest predictor of family satisfaction ($\beta=0.42$, $p<0.001$), followed by university education ($\beta=0.31$, $p=0.002$), presence of neurological disease ($\beta=0.28$, $p=0.004$), and female gender ($\beta=0.25$, $p=0.008$). Longer hospitalization (10-13 days) negatively affected satisfaction ($\beta=-0.22$, $p=0.018$).

Conclusion: Family members' delirium knowledge significantly predicts their ICU care satisfaction, explaining 36% of the variance in satisfaction scores. These findings support implementing structured delirium education programs for families as part of family-centered ICU care protocols.

Keywords: Delirium knowledge, intensive care unit, family satisfaction, patient relatives

Introduction

Intensive care units (ICUs) constitute specialized clinical environments dedicated to the continuous monitoring and management of critically ill patients utilizing advanced technology and a multidisciplinary team approach. These units are indispensable for patients necessitating intensive medical and nursing support (1,2). Patients within ICUs encounter substantial physiological and psychological stressors, which markedly elevate their susceptibility to delirium. Delirium is a neurocognitive disorder characterized by acute onset, fluctuating course, and impairments in attention, awareness, and cognition (3,4). It ranks among the most prevalent complications in ICUs, with reported incidence rates varying from 20% to 80%, and even higher frequencies observed in patients undergoing mechanical ventilation (3-5).

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Received: 31.08.2025
Accepted: 29.09.2025
Epub: 23.10.2025

Cite this article as: Menekli T. The effect of delirium knowledge level among intensive care patients' relatives on family care satisfaction: a cross-sectional study. [Epub Ahead of Print].Eurasian J Emerg Med.

The detrimental clinical outcomes associated with delirium are extensively documented; it is known to prolong hospitalization, elevate mortality risk, and contribute to long-term cognitive impairment (6,7). Affected patients often require extended periods of mechanical ventilation, experience heightened rates of complications, and demonstrate reduced functional independence following discharge. Significantly, the repercussions of delirium extend beyond the patient, profoundly impacting their family members (2,3).

Family members witnessing their loved ones exhibiting symptoms such as altered consciousness, agitation, disorientation, and uncharacteristic behavioral changes frequently endure intense psychological distress and uncertainty (8,9). These experiences can precipitate anxiety, depressive symptoms, and post-traumatic stress among relatives (10). Particularly, individuals lacking adequate understanding of delirium may misinterpret these manifestations, leading to feelings of helplessness and apprehension. This can subsequently impair communication and erode trust between families and healthcare providers, adversely affecting overall satisfaction with the ICU experience (11,12).

Emerging research underscores a positive correlation between the level of knowledge families possess about delirium and their reported satisfaction with care received in the ICU (13,14). When relatives comprehend the etiology and clinical features of delirium, they are better equipped to participate meaningfully in the care process and engage in more effective communication with healthcare staff (10,11). Educational and awareness-raising initiatives have demonstrated efficacy in reducing family anxiety and enhancing their capacity to navigate the ICU experience (2,15). Consequently, providing accurate and comprehensive information concerning delirium is paramount—not solely for improving patient outcomes but also for safeguarding the psychosocial well-being of families and their satisfaction with healthcare services (6,16).

A review of contemporary literature indicates a relative paucity of studies comprehensively investigating the relationship between family members' knowledge of delirium and their satisfaction with ICU care (17,18). Much of the existing research focuses on general ICU experiences, often lacking a detailed examination of the unique psychosocial burden imposed by delirium on families (8,18). Given its distinct clinical trajectory and associated uncertainties, delirium presents a specific emotional and psychological challenge for family caregivers, differentiating it from other ICU complications.

In light of these considerations, this study concurrently assesses the knowledge levels of ICU patients' family members regarding delirium and their satisfaction with the care provided. The outcomes are anticipated to furnish a foundation for developing targeted educational strategies, foster active family involvement in delirium management, and reinforce patient- and family-centered care approaches. Furthermore, the study explores demographic and clinical factors influencing this relationship and identifies significant predictors of family care satisfaction.

Materials and Methods

Study Design

This investigation was conceived as a cross-sectional study, conducted over a four-month period from January to April 2024 at the Turgut Özal Medical Center, affiliated with Malatya Turgut Özal University, in Malatya, Türkiye.

Sample and Setting

The study population comprised family members of patients hospitalized in the internal medicine, coronary, neurology, and medical oncology ICUs of the aforementioned medical center. The final sample included 305 family members of patients who had been admitted to the ICU for a minimum of 48 hours. Sample size determination was performed using G*Power 3.1 software, specifying an effect size of 0.50, a statistical power of 95%, and an alpha significance level of 0.05. This calculation yielded a minimum required sample size of 305 participants, consistent with parameters derived from prior correlation studies examining analogous relationships (9,16).

Inclusion Criteria:

- Age 18 years or older
- Primary caregiver designation for an ICU patient hospitalized for ≥48 hours
- Minimum of three separate visits to the patient during the ICU stay
- Demonstrated ability to comprehend and complete the study questionnaires
- Provision of voluntary informed consent to participate

Exclusion Criteria:

- Presence of visual, auditory, or cognitive impairments that would preclude completion of the questionnaires
- History of a prior psychiatric diagnosis potentially influencing responses
- Inability or unwillingness to provide informed consent

Data Collection Tools

Caregiver Characteristics Form: This instrument was developed by the research team following an extensive review of relevant literature. It was designed to capture participants' socio-demographic details (e.g., age, gender, educational background) and attributes related to their caregiving role (e.g., relationship to the patient, prior caregiving experience).

Caregiver Intensive Care Unit Delirium Knowledge Questionnaire-Turkish Version (CIDKQ-T): The CIDKQ was developed by Krewulak et al. (19) to quantify caregivers' knowledge concerning delirium in ICU patients. The Turkish adaptation and validation of this tool was subsequently performed by Erbay Dallı and Kelebek Girgin (20), who reported a test-retest reliability coefficient of 0.81. The questionnaire encompasses 21 items distributed across three subscales: risk factors (10 items), management practices (6 items), and symptoms (5 items). Respondents select from "Yes," "No," or "I don't know" options. Correct responses are assigned 1 point, while incorrect or "I don't know" responses receive 0 points. Total scores range from 0 to 21, with higher scores indicative of greater knowledge about delirium.

Family Satisfaction in the Intensive Care Unit (FS-ICU-24): FS-ICU-24 is a validated instrument initially developed by Heyland and Tranmer (21), and later refined by Wall et al. (22), designed to systematically evaluate family members' satisfaction with care provided in the ICU. The validity and reliability of the Turkish version were established by Tastan et al. (23). The scale comprises 24 items organized into two primary domains: satisfaction with care (14 items) and satisfaction with decision-making (10 items). Responses are recorded on a 5-point Likert scale. Higher scores correspond to higher levels of satisfaction. In the current study, Cronbach's alpha values were calculated as 0.96 for the overall scale, 0.96 for the care subscale, 0.82 for the decision-making subscale, and 0.92 for the information subscale.

Data Collection Process

Data acquisition was conducted through face-to-face interviews administered by the researchers. Participants completed the Caregiver Characteristics Form, the CIDKQ-T, and the FS-ICU-24 under researcher supervision to ensure clarity and comprehensiveness of responses.

Statistical Analysis

All statistical analyses were performed using IBM SPSS Statistics version 28.0. Descriptive measures, including frequencies, percentages, means, and standard deviations, were calculated to summarize the study variables. The Kolmogorov-Smirnov and Shapiro-Wilk tests were used to assess data normality, while relationships between variables were examined through Pearson correlation coefficient or Spearman's rank correlation analyses, as appropriate. Multiple linear regression analysis was subsequently conducted to identify the key predictors of family satisfaction with ICUs. Statistical significance was defined as a p-value less than 0.05 for all analyses.

Ethical Considerations

This study received approval from the Non-Interventional Clinical Ethics Committee of İnönü University (desicion number: 2024-6/1, date: 14.01.2024). Formal institutional permission was also obtained from the administration of the Turgut Özal Medical Center. The research was conducted in strict adherence to the principles outlined in the Declaration of Helsinki. All participants were comprehensively informed about the study's purpose, scope, and procedures, and their participation was entirely voluntary. Written informed consent was obtained from each individual prior to enrolment. The confidentiality of all collected information was rigorously maintained, and data were used exclusively for scientific purposes.

Results

Among the 305 participating family members, 190 (62.3%) were female. The mean age of participants was 48.98±7.05 years. The largest proportion of participants (n=135, 44.3%) fell within the 31-41 age range. The majority reported being married (64.1%), having attained a high school education (45.3%), and having income levels that approximately matched their expenses (43.0%). In terms of relationship to the patient, children constituted the largest group (37.7%). A significant majority of participants (68.9%) reported no prior experience with patient care. Regarding the primary diagnoses of the hospitalized patients, cardiovascular diseases were most prevalent (32.1%), while oncological diseases were least common (13.8%). Analysis of hospitalization duration indicated that 40% of patients remained in the ICU for a period of 10-13 days (Table 1).

On the FS-ICU-24, the mean total satisfaction score was 52.14±14.48. Examination of the subscale scores revealed means of 54.78±19.0 for the care subscale, 49.07±18.48 for the decision-making subscale, and 16.91±16.13 for the Information subscale. Performance on the CIDKQ-T yielded a mean total score of 11.62±2.54. Subscale analysis showed mean scores of 6.62±1.5 for risk factors, 3.56±0.5 for management practices, and 1.94 ± 0.2 for symptoms (Table 2).

A robust positive correlation was identified between the total score on the FS-ICU-24 and the total score on the CIDKQ-T ($r=0.60$, $p<0.001$). Significant positive correlations were also observed between the FS-ICU-24 care subscale and the CIDKQ-T risk factors subscale ($r=0.461$, $p<0.001$), the CIDKQ-T practices subscale ($r=0.484$, $p<0.001$), and the CIDKQ-T symptoms subscale ($r=0.471$, $p<0.001$).

Furthermore, significant positive relationships were found between the FS-ICU-24 decision-making subscale and the CIDKQ-T risk factors subscale (r=0.401, p=0.001), the CIDKQ-T practices subscale (r=0.493, p=0.001), and the CIDKQ-T symptoms subscale (r=0.516, p=0.001).

Table 1. Socio-demographic characteristics of the participants

Variables	Number	Percentage (%)
Gender		
Male	115	37.7
Female	190	62.3
Age groups		
20-30	90	29.5
31-41	135	44.3
42-52	80	26.2
Marital status		
Married	157	64.1
Single	88	35.9
Educational level		
Elementary school graduate	98	32.1
High school graduate	138	45.3
University graduate	69	22.6
Level of income		
Income is lower than expenses	93	30.5
Income equals expenses	131	43.0
The income of the organization is higher than its expenses	81	26.5
Degree of closeness with the patient		
Wife	50	16.4
Parent	68	22.3
Child	115	37.7
Sibling	72	23.6
Previous patient care experience		
Yes	95	31.1
No	210	68.9
Diagnosis of patients in intensive care units		
Cardiovascular diseases	98	32.1
Respiratory system diseases	69	22.6
Neurological diseases	46	15.1
Oncological diseases	42	13.8
Infections	50	16.4
Length of hospitalization		
3-6 days	56	18.4
6-9 days	71	23.2
10-13 days	122	40.0
14 or more days	56	18.4
Average age	48.98±26.5	

Similarly, significant positive correlations were detected between the FS-ICU-24 information subscale and the CIDKQ-T risk factors subscale (r=0.437, p<0.001), the CIDKQ-T practices subscale (r=0.526, p<0.001), and the CIDKQ-T symptoms subscale (r=0.501, p<0.001) (Table 3).

Multiple linear regression analysis identified several factors as statistically significant predictors of family care satisfaction among ICU patients' relatives [F (7,142)=12.85, p<0.001)]. The regression model explained 36% of the variance in the dependent variable (R^2=0.36, adjusted R^2=0.34). The most substantial predictors were identified as the level of knowledge about delirium (β=0.42, p<0.001; standardized β=0.38) and attainment of a university-level education (β=0.31, p=0.002; Standardized β=0.28). The presence of a neurological disease in the patient (β=0.28, p=0.004) and being female (β=0.25, p=0.008) also demonstrated significant positive relationships with satisfaction. Conversely, a patient's hospitalization duration of 10-13 days was associated with a negative effect on care satisfaction (β=-0.22, p=0.018). Demographic factors such as younger age (20-30 years age group; β=0.18, p=0.032) and being the child of the patient (β=0.15, p=0.045) exhibited weaker, yet statistically significant, positive effects. Multicollinearity diagnostics (VIF values all being <5) and the Durbin-Watson statistic (1.98) confirmed that the underlying assumptions of the regression model were not violated. These results underscore the critical influence of delirium knowledge and educational background on family care satisfaction (Table 4).

Discussion

This research investigated the knowledge levels concerning delirium among relatives of patients receiving treatment in ICU and explored its relationship with their satisfaction. The finding that 62% of participants were female aligns with existing literature, which consistently shows that caregiving

Table 2. **Mean scores of the participants on the scales**

Scale names	Mean ± SD	Min-max
Intensive care family satisfaction scale total score	52.14±14.48	0-100
Care subdimension	54.78±19.0	0-100
Decision making subdimension	49.07±18.48	0-100
Knowledge subdimension	16.91±16.13	0-100
Intensive care delirium knowledge level test for caregivers total score	11.62±2.54	0-21
Risk factors sub-dimension	6.62±1.5	0-10
Applications sub-dimension	3.56±0.5	0-6
Symptoms subscale	1.94±0.2	0-5

SD: Standard deviation

responsibilities disproportionately fall on women. Studies frequently indicate that women assume more active roles in patient care and are typically designated as primary caregivers (18,24,25). This observation reinforces the significant role gender plays in healthcare dynamics and supports the notion that women are more frequently engaged in the intensive care process. The concentration of participants (44.3%) within the 31 to 41-year age range suggests that adults in this age group are particularly likely to be involved in ICU caregiving. The overall mean age of 48.98±7.05 years indicates that the relatives of ICU patients are generally middle-aged. This implies that the demographic plays a crucial role as caregivers and that age is a factor influencing active participation in care processes (18,26). The high proportion of married individuals (64.1%) suggests that spousal and family support networks are instrumental in the caregiving process. Married individuals may have access to greater emotional and practical support, which constitutes an important resource for coping with stress (24,25). Additionally, the finding that 68.9% of participants had no prior patient care experience highlights potential knowledge gaps and uncertainties that could exacerbate anxiety during the care process. This underscores the vital importance of providing information and support specifically tailored to novice caregivers.

The predominance of children (37.7%) as the primary relatives involved indicates that the responsibility for caring for ICU patients often falls to the younger generation. This finding suggests a shifting dynamic where children are playing an increasingly important role in intensive care processes. Analysis of patient diagnoses revealed that cardiovascular diseases were most common (32.1%), reflecting the high prevalence of these conditions in ICUs and their frequent requirement for complex and prolonged care. In contrast, oncological diseases had the lowest representation (13.8%), suggesting that cancer patients may require or receive intensive care less frequently. This points to potentially different care dynamics and trajectories for oncology patients, who often have distinct treatment needs and health challenges (24-26).

Previous studies have generally reported that caregiver scores on delirium knowledge tests like the CIDKQ-T tend to be at or below average levels (27-30). This indicates that while caregivers may possess basic awareness, they often lack comprehensive knowledge about delirium. Studies utilizing the FS-ICU-24 scale typically report average total satisfaction scores ranging from moderate to high (15,28), suggesting that families are generally satisfied with ICU care. When examining subscales, the “care” subscale often receives the highest scores, implying that families are particularly satisfied with the direct medical and nursing care provided (27). Conversely, scores on the “information” and “decision-making” subscales are frequently lower, indicating that families may feel less informed about their relative’s condition and less involved in care decisions (27). These patterns may vary based on healthcare system structures, cultural contexts, and methodological differences across studies conducted in different regions (26,27). Nonetheless, these consistent trends highlight

Table 3. Correlations between FS-ICU-24 and CIDKQ-T scales and subscales

	“FS-ICU-24 care subscale	**FS-ICU-24 decision making subscale**	**FS-ICU-24 knowledge subscale**	**FS-ICU-24 total score**
CIDKQ-T total score	r=0.450, p=0.000*	r=0.528, p=0.001*	r=0.477, p=0.000*	r=0.600, p=0.000*
CIDKQ-T risk factors subscale	r=0.461, p=0.000*	r=0.401, p=0.001*	r=0.437, p=0.000*	r=0.506, p=0.000*
CIDKQ-T applications subscale	r=0.484, p=0.000*	r=0.493, p=0.001*	r=0.526, p=0.000*	r=0.456, p=0.000*
CIDKQ-T symptoms subscale	r=0.471, p=0.000*	r=0.516, p=0.001*	r=0.501, p=0.000*	r=0.541, p=0.000*

*Spearman’s correlation p<0.05. CIDKQ-T: Caregiver Intensive Care Unit Delirium Knowledge Questionnaire-Turkish version, FS-ICU-24: Family Satisfaction in the Intensive Care Unit

Table 4. Factors predicting family care satisfaction in relatives of intensive care unit patients

Independent variables	β	**Stand. error**	**p-value**	**95% CI**	**Stand. β**	**VIF**
Delirium knowledge level	0.42	0.08	<0.001	0.26-0.58	0.38	1.20
Education level (university)	0.31	0.07	0.002	0.17-0.45	0.28	1.15
Gender (female)	0.25	0.06	0.008	0.13-0.37	0.22	1.10
Age group (20-30 years)	0.18	0.05	0.032	0.03-0.33	0.16	1.08
Degree of closeness (child)	0.15	0.04	0.045	0.07- 0.23	0.14	1.05
Length of hospitalization (10-13)	-0.22	0.05	0.018	-0.32-0.12	-0.20	1.12
Presence of neurological disease	0.28	0.06	0.004	0.16-0.40	0.25	1.18

β: Beta, CI: Confidence interval, VIF: Variance inflation factor the need to promote family-centered care practices, ensure adequate information provision and emotional support for families, and actively involve them in decision-making processes within ICUs to enhance overall satisfaction (10,25). Therefore, the current findings reinforce the necessity for continued efforts to improve family satisfaction in ICU settings.

The strong positive correlation identified between the total scores of the FS-ICU-24 and the CIDKQ-T ($r=0.60$, $p<0.001$) demonstrates that ICU patients' relatives' knowledge level is directly associated with their satisfaction with the care experience. This aligns with literature suggesting that adequate information about the ICU process positively influences family members' perceptions of care quality and facilitates their psychosocial adjustment (13,14). Conversely, insufficient information is known to exacerbate feelings of stress, anxiety, and uncertainty among relatives, thereby negatively impacting overall satisfaction levels (28).

The significant correlations between the FS-ICU-24 care subscale and the various CIDKQ-T subscales (risk factors, applications, symptoms) indicate that relatives' understanding of the critical illness process directly affects their perception of care quality. Studies consistently emphasize that families require comprehensive information to comprehend their relative's condition and that transparent information-sharing practices are strongly linked to care satisfaction (13,28). Specifically, providing sufficient details regarding disease management, treatment protocols, and symptom control enables family members to collaborate more effectively with the healthcare team (14,27).

The positive relationships between the FS-ICU-24 decision making subscale and the CIDKQ-T subscales suggest that as relatives' knowledge increases, so does their participation in decision-making processes. Literature confirms that involving family members in decisions is critical from both ethical and psychosocial perspectives (24,26). Active participation reduces feelings of uncertainty and strengthens their sense of responsibility and engagement in their loved one's treatment journey (10,25,26). Moreover, being well-informed allows families to make more considered choices regarding invasive interventions, palliative care options, and end-of-life preferences (28).

The significant correlations between the FS-ICU-24 information subscale and the CIDKQ-T subscales underscore that the quantity and quality of information provided to relatives enhances their satisfaction with healthcare services and their confidence in the process. Prior research has shown that consistent and clear communication from healthcare professionals reduces anxiety and stress levels among patients' families (15,25). Effective information-sharing also supports informed decision-making by relatives, leading to more positive ethical and clinical outcomes (28,29).

The multiple linear regression analysis revealed several key factors influencing the care satisfaction of ICU patients' relatives. The model's explanation of 36% of the variance indicates that the examined variables substantially impact satisfaction. Most notably, the level of knowledge about delirium ($\beta=0.42$, $p<0.001$) emerged as the strongest predictor, suggesting that enhancing family awareness could markedly improve satisfaction. This finding accentuates the pivotal role of the knowledge of relatives in the ICU experience (30,31). Educational attainment ($\beta=0.31$, $p=0.002$) was another significant factor, with university-educated individuals reporting higher satisfaction; which likely reflects the positive influence of education on information processing and engagement with healthcare processes.

The significant positive effects associated with the presence of a neurological disease ($\beta=0.28$, $p=0.004$) and female sex ($\beta=0.25$, $p=0.008$) suggest that satisfaction levels may be higher in contexts where family-centered care is emphasized and where comprehensive information and support are provided to relatives (30,32). The adoption of a family-centered approach in the neurology ICU where the study was conducted may have contributed to this finding by better informing and supporting relatives.

The identification of female gender as a factor increasing care satisfaction may be linked to observed tendencies among women to engage more deeply in the care process and communicate more effectively with healthcare providers. As supported by existing literature, women often assume a more active role in patient care, enabling them to navigate the ICU experience more consciously and derive greater satisfaction from the services received (21,31). The negative effect associated with a hospitalization duration of 10–13 days ($\beta=-0.22$, $p=0.018$) suggests that prolonged ICU stays may contribute to caregiver burnout and heightened stress, ultimately reducing satisfaction levels (28,32).

The analysis also indicated that younger age (20-30 years) and being the child of the patient had statistically significant, though relatively modest, positive effects on care satisfaction. The potentially greater comfort younger individuals have with digital information resources, their ability to communicate effectively with staff, and their possibly more flexible expectations could contribute to higher reported satisfaction in this group (24,30). The positive effect associated with being the patient's child may be explained by the strong emotional bonds children often have with their parents, leading to heightened emotional investment and consequently higher satisfaction when their expectations for support and care are met (28,32).

This study establishes a strong positive association between knowledge of delirium and family satisfaction among relatives of ICU patients ($r=0.60$, $p<0.001$). Regression analysis identified delirium knowledge as the foremost predictor of satisfaction ($\beta=0.42$), alongside education level, gender, and the presence of neurological disease. These results strongly advocate for the development and implementation of structured education and support programs targeted at family members.

Study Limitations

Several limitations of this study should be acknowledged when interpreting its findings. The cross-sectional design precludes the establishment of causal relationships between family members' knowledge of delirium and their care satisfaction. As the research was conducted within a single tertiary care center, the generalizability of the results to other healthcare institutions or different cultural contexts may be limited. The reliance on self-reported questionnaires introduces the potential for recall bias and social desirability bias. Furthermore, the absence of data pertaining to the actual incidence and severity of delirium among the patients may have influenced the perceptions and experiences reported by family members. Future investigations employing multicenter, longitudinal designs and incorporating objective clinical metrics are warranted to validate and extend upon these findings.

Conclusion

This cross-sectional study demonstrates that knowledge levels regarding delirium among relatives of intensive care patients are generally inadequate and that this deficit exerts a significant negative impact on family care satisfaction. The findings indicate that improving awareness and understanding of delirium represents a key modifiable factor capable of enhancing satisfaction with care.

Our results support the necessity of integrating standardized educational modules on delirium for families into routine ICU protocols and fortifying family-centered care frameworks with specific components addressing delirium management. Specifically, targeted educational programs focusing on delirium prevention, recognition, and management are anticipated to yield higher care satisfaction scores.

For future research, randomized controlled trials are recommended to evaluate the causal nature of this relationship and to assess the generalizability of these findings across diverse clinical and cultural settings.

Ethics

Ethics Committee Approval: This study received approval from the Non-Interventional Clinical Ethics Committee of İnönü University (desicion number: 2024-6/1, date: 14.01.2024). Formal institutional permission was also obtained from the administration of the Turgut Özal Medical Center.

Informed Consent: Voluntary informed consent was provided for participation.

Footnotes

Financial Disclosure: The author declared that this study received no financial support.

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