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Research Article

Assessment of Palliative Care Knowledge Among Intensive Care Unit Nurses

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ABSTRACT

Background: Patients receiving care in intensive care units (ICUsrequire specialized care due to the severity and complexity of their conditions. Palliative care plays a critical role in improving the quality of life of patients and their families. This study aimed to assess the level of palliative care knowledge among ICU nurses in hospitals affiliated with Mazandaran University of Medical Sciences.

Methods: This cross-sectional descriptive study was conducted in 2025 on 97 ICU nurses with at least a bachelor's degree in nursing and a minimum of one year of work experience. Convenience sampling was used. Data were gathered through a demographic information form alongside the Palliative Care Quiz for Nursing (PCQN). Statistical analysis was conducted using SPSS software (version 21). Descriptive statistics were applied, and group comparisons were examined using an independent samples t-test, one-way analysis of variance (ANOVA), and Scheffé post hoc tests.

Results: The overall mean score of nurses' palliative care knowledge was above average (14.92 ± 6.5). The highest knowledge levels were observed in the psychosocial dimension and differentiation of acute versus chronic pain. The lowest knowledge scores were related to pain management, placebo use, family presence at the end of life, and side effects of opioid medications. Findings indicated that nurses over 40 years old and those with more than 10 years of work experience had significantly lower palliative care knowledge ($p < 0.05$). There was no significant variation in knowledge scores based on gender, whereas married nurses tended to achieve higher knowledge levels compared with unmarried nurses.

Conclusion: Nurses' knowledge of palliative care is largely based on clinical experience rather than updated evidence-based guidelines. Existing knowledge gaps could compromise the quality of palliative care services. Therefore, the implementation of structured and evidence-based educational programs, particularly for experienced nurses, is crucial for strengthening care standards and promoting better patient outcomes.

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Introduction

Patients admitted to intensive care units (ICUs) require specialized care due to the severity of their illnesses, clinical complexity, and higher mortality rates in these settings [1-2]. When organ dysfunction in critically ill patients does not respond to treatment and care goals are no longer achievable, or when life-sustaining support is disproportionate to expected outcomes, ICU healthcare providers must facilitate a dignified death [3]. Palliative care is one of the most essential interventions, especially for critically ill ICU patients at the end of life, and it is implemented more frequently in this setting than in other hospital wards.

[4-5]. Palliative care focuses on enhancing the quality of life for patients and their families by identifying and managing pain along with physical, emotional, social, and spiritual difficulties. This is achieved through timely assessment, thorough evaluation, and appropriate therapeutic interventions. [6-7]. Its primary goal is to address all aspects of life, including psychological, spiritual, social, and cultural needs of patients and families [8-9].

The World Health Organization defines palliative care as an important approach for enhancing the quality of life of individuals with life-threatening conditions and their families. It is introduced from the moment of diagnosis and is provided continuously throughout the progression of the disease. [10]. Palliative care can accelerate recovery, reduce hospital length of stay, and decrease healthcare costs [8,11]. Therefore, its aim is not disease cure but the provision of comfort and the maintenance of the highest possible quality of life until its natural end [12].

In ICUs, palliative care may include emotional support, therapeutic communication, and palliative care protocols, most of which alleviate pain and enhance patient comfort [13–15]. Globally, approximately 40 million people require palliative care annually, yet only 14% receive it, with 78% of these individuals residing in low- or middle-income countries [10,16].

Studies have reported that palliative care utilization in ICUs is generally low [4], partly due to insufficient knowledge and experience among nurses, which may lead to underestimation of its importance in patient care [17]. A lack of adequate knowledge among healthcare providers represents a significant challenge to the effective implementation of palliative care services, which emphasizes the need for structured staff training programs. [18]. The novelty of palliative care as a discipline, together with a lack of structured educational opportunities, has been identified in the literature as a contributing factor to nurses' limited knowledge in this area. [19]. Considering the demanding nature of ICU work, high job responsibilities, and related stressors, having sufficient knowledge and awareness of palliative care is essential for improving the quality of nursing care [20].

Accordingly, ICU nurses need to be well-informed about palliative care and hold favorable attitudes in this regard [4]. Sufficient knowledge enhances confidence and job satisfaction, enabling nurses to provide better care in ICUs [21]. Based on these considerations, this study aimed to assess palliative care knowledge among ICU nurses in hospitals affiliated with Mazandaran University of Medical Sciences.

Methods

Study Design and Setting

This descriptive cross-sectional study was conducted in 2025 among nurses working in the Intensive Care Unit (ICU) of Razi Hospital in Ghaemshahr, affiliated with Mazandaran University of Medical Sciences, Iran.

Inclusion and Exclusion Criteria

The inclusion criteria were holding at least a bachelor's degree in nursing, a minimum of one year of overall clinical experience, and at least six months of work experience in the ICU. The exclusion criterion was incomplete questionnaire responses.

Sample Size

The sample size was calculated using Cochran's formula for a finite population. Considering a 95% confidence level, a margin of error of 0.05, and an estimated population proportion of 0.5, the initial sample size was determined and subsequently adjusted using the finite population correction formula. Accordingly, a final sample size of 97 participants was obtained.

Data Collection Instruments

Data were collected using a demographic information questionnaire (including age, gender, marital status, and work experience) and the Palliative Care Quiz for Nursing (PCQN). The PCQN was originally developed by Ross et al. in 1996.

The PCQN is scored using a three-option response format (True/False/Do not know). Each correct response receives 1 point, while incorrect and "Do not know" responses receive 0 points. Total scores range from 0 to 20, with higher scores indicating greater knowledge of palliative care [22].

The instrument assesses three domains [23]:

1. Philosophy and principles of palliative care (4 items: 1, 9, 12, 17)
2. Pain and symptom management (9 items: 2, 4, 6, 8, 10, 13, 16, 18, 20)
3. Psychosocial and spiritual care (3 items: 5, 11, 19)

Construct validity of the questionnaire was confirmed in a previous Iranian study (2023). The reliability of the instrument was assessed using the Kuder–Richardson Formula 20 (KR-20), yielding a coefficient of 0.72, indicating acceptable internal consistency.

Data Collection Procedure

Participants were recruited using a convenience sampling method from eligible ICU nurses. Questionnaires were completed through self-report. The researcher was present during data collection to address any potential questions or ambiguities.

Statistical Analysis

Data were entered into SPSS software version 21 for analysis. Descriptive statistics (frequency, mean, and standard deviation) were used to summarize the data. Inferential statistics included the independent samples t-test, one-way analysis of variance (ANOVA), and Scheffé post hoc test. The level of statistical significance was set at $p < 0.05$ for all analyses.

Results

The mean age of the participants was 33.55 ± 7.76 years. In terms of gender distribution, 70.2% (n = 66) were female, and 29.8% (n = 29) were male. Regarding marital status, 62.8% (n = 60) were married, and 36.2% (n = 34) were single. Concerning work experience, 45.7% (n = 42) had 5–10 years of experience, 41.5% (n = 39) had less than 5 years, and 12.8% (n = 12) had more than 10 years of clinical experience.

The mean score of palliative care knowledge was 14.92 ± 5.66, indicating a level above the midpoint of the scale. Additionally, nurses' knowledge scores across all domains of palliative care were above the average level (Table 1). At the item level, the highest correct response rates were observed for the following statements: 89.4% agreed that losing a distant relationship is easier than losing a close one; 87.2% correctly identified that acute pain differs from chronic pain; and 87.2% recognized that pain threshold decreases with fatigue and anxiety. In contrast, the lowest levels of awareness were related to the items stating that a placebo is effective in relieving pain (43.6%), that family members wish to be present at the moment of death (36.2%), and that high doses of codeine cause more nausea and vomiting than other opioids (34%) (Table 2).

Analysis of variance (ANOVA) revealed a statistically significant association between palliative care knowledge and age ($p < 0.01$). Scheffé's post hoc test indicated that this difference was attributable to nurses aged over 40 years, who demonstrated significantly lower knowledge scores. Similarly, ANOVA showed a significant relationship between palliative care knowledge and work experience ($p = 0.002$). Scheffé's post hoc analysis revealed that nurses with more than 10 years of work experience had lower knowledge scores (Table 2).

The independent samples t-test showed no statistically significant difference in palliative care knowledge based on gender ($p = 0.57$). However, a significant difference was found with respect to marital status ($p < 0.01$), with married nurses demonstrating higher levels of palliative care knowledge compared to single nurses (Table3).

Table 1- Palliative Care Knowledge Among ICU Nurses

Palliative Care Knowledge	Mean ± Standard Deviation
Philosophy of Palliative Care (0–4)	3.05 ± 1.37
Pain Management (0–13)	9.62 ± 3.62
Psychosocial and Spiritual Care (0–3)	2.24 ± 0.90
Total Palliative Care Score	14.92 ± 5.66

Table 2- Relationship of Demographic Factors with Palliative Care Knowledge in Intensive Care Unit Nurses

Demographic Variable	Group	n	Mean ± SD	Test Statistics	P value
Age	< 30 years	43	16.27 ± 4.12	F = 31.49	p < 0.01
	30–40 years	28	18.42 ± 2.55		
	> 40 years	23	7.95 ± 4.96		
Work Experience	< 5 years	39	16.17 ± 4.29	F = 8.78	p = 0.002
	5–10 years	43	15.23 ± 5.95		
	> 10 years	12	9.75 ± 6.09		
Gender	Female	66	14.71 ± 5.82	F = 2.55	p = 0.57
	Male	28	15.42 ± 5.28		
Marital Status	Married	60	17.66 ± 3.02	F = 37.81	p < 0.01
	Single	32	10.08 ± 6.03		

Table 3- Assessment of Palliative Care Knowledge Among Intensive Care Nurses

No.	Question	Correct n (%)	Incorrect n (%)	Mean ± SD
1	Palliative care is only applicable in critical conditions	71 (75.5%)	23 (24.5%)	0.75 ± 0.42
2	Morphine has a stronger analgesic effect than other drugs	79 (84%)	15 (16%)	0.84 ± 0.36

3	Disease severity determines the palliative care approach	66 (70.2%)	28 (29.8%)	0.70 ± 0.45
4	Complementary therapies are effective in pain management	72 (76.6%)	22 (23.4%)	0.76 ± 0.42
5	Family members want to be present at the moment of death	60 (63.8%)	34 (36.2%)	0.63 ± 0.43
6	Physical condition in the final days may reduce analgesic needs	66 (70.2%)	28 (29.8%)	0.71 ± 0.45
7	Long-term use of opioids causes addiction	61 (69.4%)	33 (30.6%)	0.64 ± 0.47
8	A high-fiber diet is needed when using opioids	66 (70.2%)	28 (29.8%)	0.70 ± 0.45
9	Providing palliative care requires emotional detachment	81 (86.2%)	13 (13.8%)	0.86 ± 0.34
10	Immunosuppressive drugs can cause respiratory complications	77 (81.9%)	17 (18.1%)	0.71 ± 0.45
11	Men adapt to grief faster than women	67 (71.3%)	27 (28.7%)	0.71 ± 0.44
12	Palliative care philosophy is compatible with aggressive treatment	68 (72.3%)	26 (27.7%)	0.72 ± 0.44
13	Placebos are effective in pain relief	53 (56.4%)	41 (43.6%)	0.42 ± 0.42
14	High doses of codeine cause more nausea and vomiting than morphine	62 (66%)	32 (34%)	0.65 ± 0.47
15	Suffering is the same as physical pain	63 (67%)	31 (33%)	0.67 ± 0.47
16	Pentazocine is not a strong analgesic for pain relief	76 (80.9%)	18 (19.1%)	0.80 ± 0.39
17	Palliative care leads to occupational burnout	67 (71.3%)	27 (28.7%)	0.71 ± 0.45
18	The symptoms associated with chronic pain differ from those seen in acute pain	82 (87.2%)	12 (12.8%)	0.87 ± 0.33
19	Losing an emotionally distant relationship may be harder than losing a close relationship	84 (89.4%)	10 (10.6%)	0.89 ± 0.31
20	Pain threshold decreases with fatigue and anxiety	82 (87.2%)	12 (12.8%)	0.87 ± 0.33

Discussion

The findings of this study indicated that the overall level of palliative care knowledge among ICU nurses was above average. This contrasts with previous studies in Iran, which reported lower levels of palliative care knowledge among nurses [24].

These results suggest that the nurses participating in this study were relatively familiar with basic concepts of palliative care, likely due to their frequent exposure to critically ill patients, end-of-life care situations, and the complex physical and psychological needs of patients. In contrast, the low knowledge levels reported in other Iranian studies may be attributed to the lack of structured and systematic educational programs during nursing training [25]. Another possible reason is the absence of in-service continuing education programs for practicing nurses [26]. Recent studies have also shown that working in high-intensity care environments can enhance nurses' conceptual understanding of palliative care [8].

Since palliative care knowledge is directly related to the quality of nursing care, improving nurses' awareness and attitudes toward palliative care can effectively enhance the quality of nursing services [20,26]. Successful implementation of palliative care requires the combined influence of knowledge, attitudes, beliefs, and extensive clinical experience. Negative attitudes of nurses toward death and caring for dying patients can significantly affect the quality of palliative care provided [24].

Item-level analysis of the questionnaire indicated that the highest correct response rates were related to psychosocial aspects of pain and loss, as well as the distinction between acute and chronic pain. High scores on these items indicate that ICU nurses have a good understanding of the multidimensional nature of pain and the role of psychological factors such as anxiety and fatigue in pain thresholds.

However, similar to the study by Masharipova et al. (2024), the lowest awareness among nurses was observed for items related to placebo use, family presence at the time of death, and opioid-related adverse effects. This highlights a knowledge gap in pain management and family-centered ethical considerations in palliative care [24]. The present study also demonstrated that nurses' knowledge regarding opioid medications was low, consistent with recent evidence indicating limited understanding of analgesics and opioids among nurses [16].

The study found a significant inverse relationship between age and palliative care knowledge, with nurses over 40 years old showing lower knowledge levels. In contrast, Masharipova (2024) reported increasing knowledge with age [24]. It appears that knowledge in this context may rely more on clinical experience accumulated over the years rather than current evidence-based guidelines.

Similarly, nurses with more than 10 years of experience had significantly lower palliative care knowledge. This

aligns with findings from Toqan et al., showing that less experienced nurses scored higher in palliative care knowledge [27]. This may be explained by the lack of ongoing structured education, as increased experience alone does not necessarily lead to improved specialized knowledge. In contrast, Masharipova (2024) reported significantly higher knowledge in experienced nurses who had participated in palliative care training programs [24].

No significant differences in palliative care knowledge were observed based on gender, consistent with international studies suggesting that this knowledge is primarily influenced by education and professional experience [20]. In the current study, married nurses demonstrated higher knowledge levels than single nurses. However, prior studies by Ghazanchaie (2020) and Alipour et al. (2023) found no significant association between marital status and palliative care knowledge [20,28]. This difference may reflect personal caregiving experiences, family responsibilities, closer exposure to illness and death, or cultural variations. Overall, although the general level of palliative care knowledge among ICU nurses was acceptable, significant gaps were observed, particularly in drug management, family-centered care, and ethical considerations at the end of life. Therefore, designing and implementing targeted educational programs, especially for older and more experienced nurses, can play a key role in improving palliative care quality in intensive care units.

Limitations

This study's cross-sectional design does not allow for causal inferences. Reliance on self-reported data may introduce social desirability bias. Furthermore, conducting the study in a single hospital limits the generalizability of findings to other healthcare settings with different cultural or organizational contexts.

Conclusion

The study indicates that although ICU nurses' overall knowledge of palliative care is relatively adequate, it largely depends on clinical experience and is not fully aligned with updated evidence-based guidelines. Knowledge gaps, especially in opioid management, family-centered care, and end-of-life ethical considerations, can directly affect the quality of palliative care. Additionally, increased age and work experience, in the absence of continuous and structured education, were associated with lower knowledge levels. These findings emphasize the insufficiency of relying solely on professional experience in managing the complexities of palliative care. Therefore, revising in-service training programs and incorporating evidence-based education into nursing curricula is essential. Targeted educational interventions, particularly for experienced nurses, can play a decisive role in enhancing the quality of palliative care and improving outcomes for critically ill and dying patients.

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Ethics approval and consent to participate

This study was approved by the Community Nursing Research Center and received ethical clearance from the Zahedan University of Medical Sciences Ethics Committee (IR.ZAUMS.REC.1404.358). Participants were informed about the safety of the study and the confidentiality and anonymity of their data. Written informed consent was obtained prior to participation, and data were collected via self-report questionnaires.

Data availability

Although the dataset is not openly available, the corresponding author may grant access following a valid and reasonable request.

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