

ASSESSING CRITICAL CARE NURSES KNOWLEDGE AND ATTITUDE TOWARDS END-OF-LIFE CARE

Original Research

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Acknowledgement: Heartfelt gratitude to my family, friends, and mentors for their unwavering support, encouragement, and belief in me throughout this journey.

Conflict of Interest: None

Grant Support & Financial Support: None

ABSTRACT

Background: End-of-life care is a fundamental aspect of critical care nursing, requiring a comprehensive understanding of symptom management, patient-centered decision-making, and emotional support for both patients and their families. Intensive care unit (ICU) nurses play a pivotal role in ensuring dignity and comfort for terminally ill patients who no longer respond to curative treatments. Adequate knowledge and a positive attitude toward end-of-life care are essential for delivering compassionate and effective care. Understanding nurses' perspectives in this context is crucial to identifying gaps and areas for improvement.

Objective: This study aimed to evaluate the knowledge and attitudes of critical care nurses toward end-of-life care in intensive care settings.

Methods: A descriptive cross-sectional study was conducted among 36 ICU nurses assigned to the Surgical ICU (SICU), Medical ICU (MICU), Neonatal ICU (NICU), and Cardiac Care Unit (CCU) at the University of Lahore Teaching Hospital. A structured, pre-validated questionnaire was used to assess knowledge and attitudes. Knowledge was measured using a 10-item questionnaire with binary scoring (correct/incorrect), while attitude was assessed using a 15-item Likert scale. Data analysis was performed using SPSS version 25.0, with descriptive statistics summarizing key findings.

Results: Among the participants, 66.7% demonstrated good knowledge (>75% score), 30.6% had average knowledge (60%-75% score), and 2.8% had poor knowledge (<60% score). Regarding attitudes, 80.6% exhibited a positive attitude (≥50% score), while 19.4% had a negative attitude (<50% score). Despite a generally favorable outlook, gaps in specific areas of knowledge and confidence in communication with terminal patients were observed.

Conclusion: The findings suggest that most critical care nurses possess adequate knowledge and maintain a positive attitude toward end-of-life care. However, the presence of knowledge gaps among a minority of participants underscores the need for targeted educational initiatives and continuous professional development to enhance competency and ensure high-quality palliative care in ICU settings.

Keywords: Attitude, Critical care nursing, End-of-life care, Intensive care units, Knowledge, Nursing education, Palliative care.

INTRODUCTION

End-of-life care plays a critical role in ensuring dignity, comfort, and holistic support for terminally ill patients and their families. It encompasses medical, psychological, social, and spiritual interventions aimed at alleviating suffering when curative treatments are no longer effective. The National Hospice and Palliative Care Organization (NHPCO) defines end-of-life care as beginning when a patient receives a terminal diagnosis with a prognosis of less than six months and no definitive treatment options remain. While some literature focuses on the final hours or days of life, others equate the concept with the broader dying process, emphasizing the transition from active medical intervention to palliative nursing care (1, 2). Nurses play a pivotal role in this transition, providing fundamental care such as pain management, hygiene maintenance, pressure area care, and family communication. Palliative care, recognized as a fundamental human right, requires a multidisciplinary approach where healthcare professionals, particularly nurses, must possess the knowledge and skills to offer both physical and emotional support (3). Nurses in critical care settings frequently encounter patients nearing the end of life, making their knowledge and attitudes toward end-of-life care crucial determinants of care quality. Their ability to deliver compassionate and competent care is influenced by their education, experience, and personal beliefs about death. Positive attitudes are associated with better compliance and dedication to patient care, while inadequate training and negative perceptions can lead to suboptimal care, emotional distress, and professional burnout (4). The intensive care unit (ICU) presents additional challenges, as critically ill patients often receive aggressive life-sustaining interventions such as mechanical ventilation, vasopressors, and renal replacement therapy. Transitioning from curative treatment to comfort-focused care requires difficult decision-making, which can be facilitated by palliative care specialists who help adjust symptom relief strategies. Research indicates that integrating early palliative care can reduce unnecessary readmissions, intubations, and invasive procedures while enhancing patient comfort and dignity. Effective communication between healthcare providers, patients, and families is paramount in this process, ensuring shared decision-making that aligns with patient values and preferences (2, 4).

Cultural, religious, and philosophical beliefs significantly influence attitudes toward death and end-of-life care. Studies suggest that healthcare providers' perspectives on death are shaped by their demographic backgrounds, including gender, age, and clinical experience. For example, some research has found that female healthcare professionals demonstrate less favorable attitudes toward death and caring for dying patients compared to their male counterparts (5). Understanding these factors is essential to addressing gaps in end-of-life education and training, which can ultimately improve the quality of care provided in critical settings. Furthermore, fostering a supportive work environment that prioritizes mental well-being can help nurses cope with the emotional burden of caring for terminally ill patients. The psychological impact of witnessing death frequently can lead to emotional exhaustion, underscoring the need for professional training that incorporates strategies for resilience and emotional regulation (6, 7). Despite the growing need for high-quality end-of-life care, significant gaps persist in nurses' knowledge and preparedness. Many critical care nurses report feeling undertrained in communication strategies, symptom management, and ethical decision-making in end-of-life scenarios. Educational curricula should prioritize these aspects, ensuring that nurses are equipped with the necessary skills and confidence to provide compassionate and patient-centered care. Early exposure to end-of-life scenarios during undergraduate nursing education can help prepare future nurses for the realities of clinical practice. Structured training programs focusing on palliative care principles, cultural competence, and bereavement support can enhance nurses' ability to navigate the complexities of end-of-life care with sensitivity and professionalism (4, 8).

Assessing critical care nurses' knowledge and attitudes toward end-of-life care is essential to identifying deficiencies and implementing targeted interventions. Understanding their perceptions can guide educational initiatives, inform hospital policies, and improve patient and family experiences during this delicate phase. Enhancing nurses' competence in end-of-life care can foster interdisciplinary collaboration, reduce burnout, and ensure a holistic approach to patient care. Therefore, this study aims to assess the knowledge and attitudes of critical care nurses regarding end-of-life care, with the objective of identifying areas for improvement and optimizing training programs to enhance the quality of care provided to terminally ill patients (9).

METHODS

This study employed a descriptive cross-sectional design to assess the knowledge and attitudes of critical care nurses toward end-of-life care. The study was conducted at The University of Lahore Teaching Hospital, a private healthcare facility established in October 1999 and located in Lahore, Punjab, Pakistan. The study population comprised critical care nurses working in various intensive care units,

including the Surgical ICU, Neonatal ICU (NICU), Cardiac Care Unit (CCU), and Medical ICU (MICU). A total of 40 nurses from morning, evening, and night shifts were initially considered, and a sample size of 36 participants was determined using the Slovin's formula with a 5% margin of error. Convenient sampling was used to recruit participants. The study period spanned from September 2024 to December 2024(8, 10). Participants met specific inclusion criteria, which included being registered nurses or team leaders between the ages of 20 and 35 years and actively working in the ICU, CCU, NICU, or MICU at the University of Lahore Teaching Hospital. Exclusion criteria encompassed nursing students from BSN years 1 to 4, individuals who declined participation, and nurses from institutions other than the University of Lahore(11).

Knowledge and attitude were the primary dependent variables in the study. Knowledge was defined as the understanding and comprehension of end-of-life care among critical care nurses and was measured using a structured questionnaire consisting of 10 items with two response options: incorrect (1) and correct (2). Knowledge levels were categorized as poor (<60%, <12 out of 20), average (≥60% to 75%, 12–15 out of 20), and good (>75%, >15 out of 20). Attitude was conceptualized as the emotional responses, behavioral tendencies, and perceptions of nurses regarding end-of-life care and was assessed using a 15-item Likert scale. The response options included strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). Attitude scores were classified as negative (<50%, ≤38 out of 75) or positive (≥50%, >38 out of 75)(11). Data were collected using a structured questionnaire, which included three sections: demographic information, knowledge assessment, and attitude evaluation. The demographic section comprised ten items capturing participants' personal and professional characteristics, while the knowledge and attitude sections consisted of a total of 25 items. The questionnaire was distributed to nurses present at the time of data collection, and they were given approximately 10–15 minutes to complete it. Participants were provided with an explanation of the study's objectives, and written informed consent was obtained before data collection(12).

Validity and reliability of the study instruments were ensured through expert review and statistical testing. The validity of both knowledge and attitude assessment tools was confirmed by five expert professors specializing in critical care nursing and gerontological nursing. Reliability was determined using Cronbach's alpha, yielding a reliability coefficient of 0.89 for the knowledge questionnaire and 0.87 for the attitude scale, indicating high internal consistency(13). Data were analyzed using SPSS version 25.0. Descriptive statistics were employed to summarize demographic characteristics, knowledge levels, and attitude scores. Appropriate statistical tests were applied to examine relationships between variables, ensuring a robust analysis of the study's findings(3). Ethical approval was obtained from the Ethics Committee of the University of Lahore (IRB approval reference number: [Insert Approval Number Here]). The study adhered to ethical guidelines, ensuring confidentiality and anonymity of participants. Written informed consent was obtained from all participants, and they were assured that their responses would remain confidential. Participants were informed of their right to withdraw from the study at any time without any consequences. The study posed no physical or psychological risks to participants, and all procedures were conducted in compliance with ethical standards for research involving human subjects.

RESULTS

The study analyzed data from 36 critical care nurses, comprising 25% males and 75% females. The majority of participants (69.4%) were aged between 20 and 25 years, followed by 27.8% in the 26-30 years age group, and 2.8% above 30 years. Most participants (80.6%) were single, while 19.4% were married. In terms of educational background, 72.2% held a Bachelor of Science in Nursing (BSN) degree, while 27.8% had completed Post RN qualifications. None of the participants reported any additional specialization in palliative or end-of-life care. Assessment of knowledge regarding end-of-life care revealed that 66.7% of participants demonstrated good knowledge (scoring >75%), 30.6% had average knowledge (scoring between 60%-75%), and 2.8% had poor knowledge (scoring <60%). Regarding specific knowledge statements, 58.3% correctly identified the importance of family presence at the bedside during a patient's final moments, and 61% recognized the necessity of supporting patients' decisions to discontinue treatment and return home. Knowledge about pain management varied, with 69.4% understanding that disease progression determines pain treatment strategies and the same proportion acknowledging the role of adjuvant therapies. However, only 52.8% correctly answered that electrolyte imbalance-related drowsiness may reduce sedation needs in terminal patients. Awareness of opioid use and addiction was moderate, with 63.9% correctly identifying that morphine use for pain management poses a risk of dependency, and 52.8% recognizing that pethidine is not an effective analgesic for chronic pain. The majority (86.1%) correctly stated that patients should have autonomy in determining their final days, including choosing interactions with friends and family. Additionally, 61% correctly recognized that placebos should not be used for pain management, while 55.6% understood that drugs with respiratory depressive effects could be appropriate for severe dyspnea in terminal stages.

Regarding attitudes, 80.6% of participants demonstrated a positive attitude (scoring $\geq 50\%$), while 19.4% exhibited a negative attitude (scoring $< 50\%$). A substantial proportion (52%) agreed or strongly agreed that caring for dying patients is a valuable learning experience, while 44.5% admitted discomfort when discussing impending death with patients. Attitudes toward initiating conversations about death were divided, with 38.9% believing that nurses should not be responsible for such discussions, and 61.2% preferring to divert conversations to more positive topics. Attitudes toward forming relationships with the families of dying patients were mixed, with 30.6% neutral and 38.9% either agreeing or disagreeing that it was challenging. Emotional support for families was widely acknowledged, with 52.8% agreeing or strongly agreeing that families require guidance to manage behavioral changes in dying patients. Furthermore, 38.9% believed that the family should not be involved in the physical care of a dying person, while 33.9% strongly opposed this view. Fear of forming bonds with dying patients was noted in 19.4% of participants, while 30.6% disagreed with the statement that educating families about death and dying is not a nursing responsibility. The findings highlight that while the majority of critical care nurses possess good knowledge and maintain a positive attitude towards end-of-life care, there remain notable gaps, particularly in areas such as opioid use, ethical decision-making, and communication with patients and families. These results emphasize the need for targeted educational interventions and training programs to enhance the preparedness of nurses in providing comprehensive and compassionate end-of-life care.

Table 1: Demographic characteristic of Participants

Variable	Category	Frequency (%)
Gender	Male	9 (25.0%)
	Female	27 (75.0%)
Age	20-25 years	25 (69.4%)
	26-30 years	10 (27.8%)
	Above 30 years	1 (2.8%)
Marital Status	Single	29 (80.6%)
	Married	7 (19.4%)
Education Level	BSN	26 (72.2%)
	Post RN	10 (27.8%)
	Any specialization	0 (0.0%)

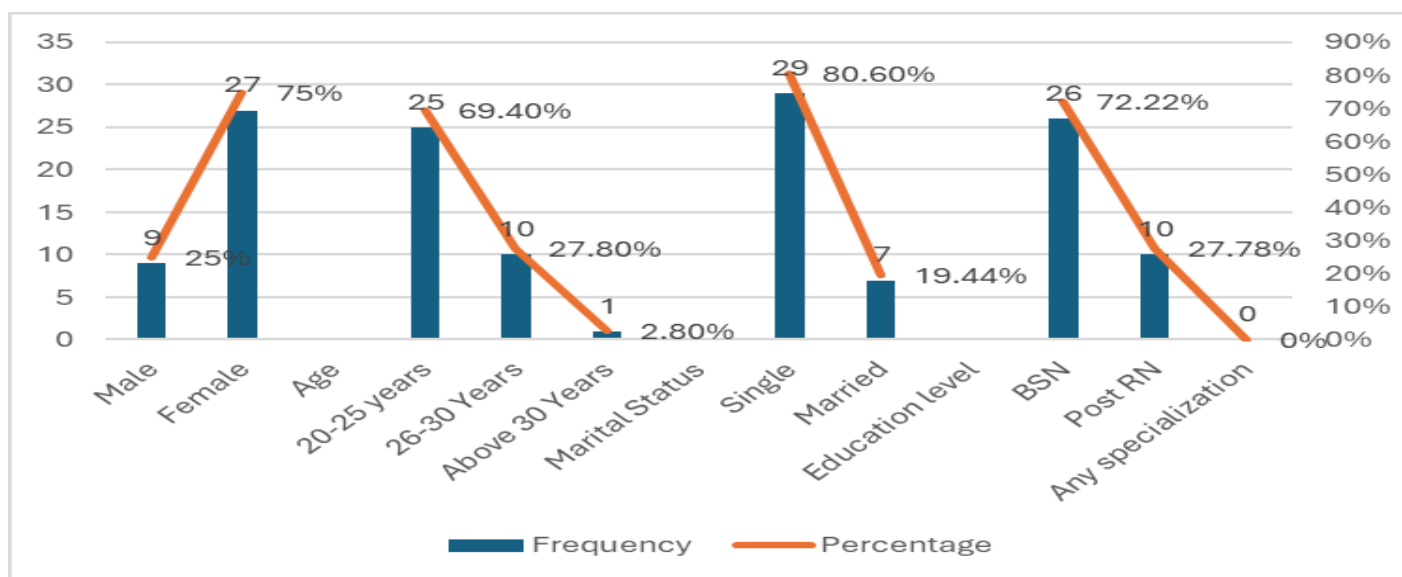


Figure 1 Demographic Distribution

Table 2: Participant's Knowledge Regarding the End-Of-Life Care.

Sr.	Statements	Incorrect (1) Frequency (%)	Correct (2) Frequency (%)
1	It is crucial for family members to remain at the bedside until death occurs.	15 (41.7%)	21 (58.3%)
2	If patients request to give up treatment and go home before death, it should be supported.	14 (38.9%)	22 (61.1%)
3	The extent of the disease determines the method of pain treatment.	11 (30.6%)	25 (69.4%)
4	Adjuvant therapies are important in managing pain.	10 (27.8%)	25 (69.4%)
5	During the last days of life, drowsiness associated with electrolyte imbalance may decrease the need for sedation.	17 (47.2%)	19 (52.8%)
6	Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain.	13 (36.1%)	23 (63.9%)
7	Pethidine is not an effective analgesic for the control of chronic pain.	17 (47.2%)	19 (52.8%)
8	In the deathbed stage, patients have the right to decide on their own schedule, such as meeting friends, fulfilling wishes, and treatment preferences.	5 (13.9%)	31 (86.1%)
9	The use of placebos is appropriate in the treatment of some types of pain.	14 (38.9%)	22 (61.1%)
10	During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment of severe dyspnea.	16 (44.4%)	20 (55.6%)

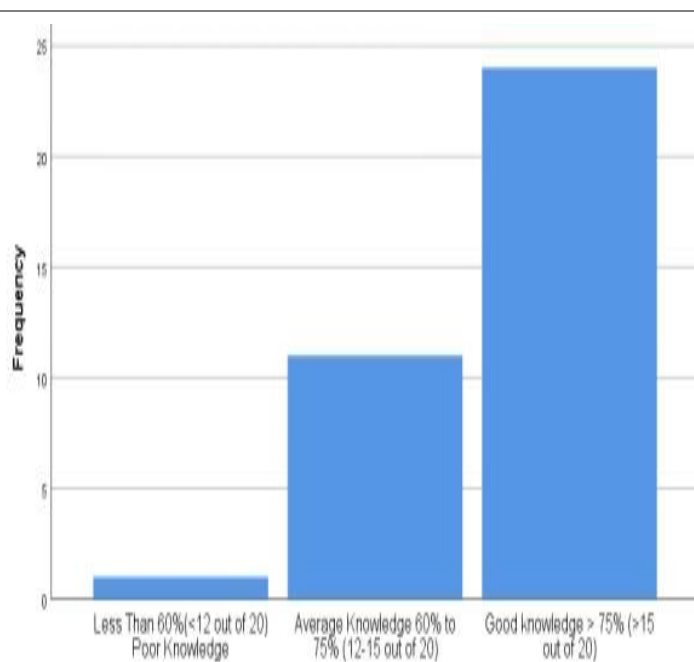
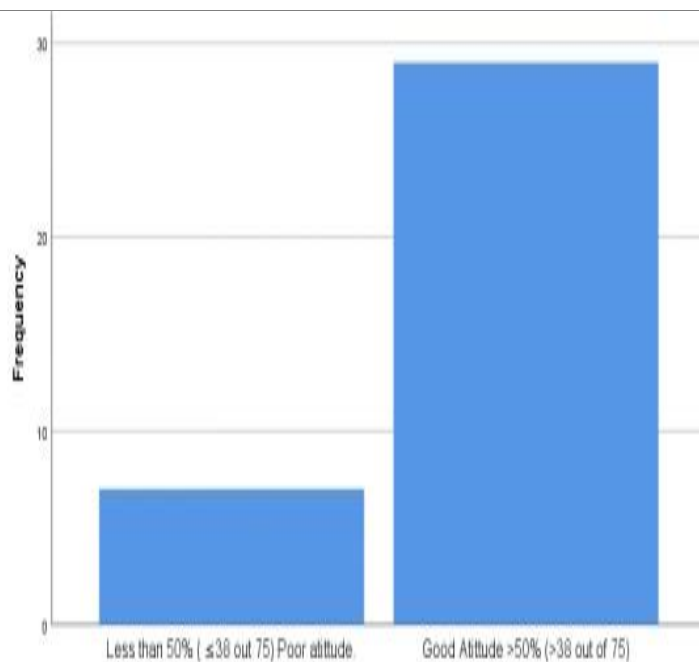
Table 3: Knowledge and Attitude Levels of Critical Care Nurses Toward End-of-Life Care

Variable	Frequency (%)
Poor Knowledge (<60%)	1 (2.8%)
Average Knowledge (60%-75%)	11 (30.6%)
Good Knowledge (>75%)	24 (66.7%)
Negative Attitude (<50%)	7 (19.4%)
Positive Attitude (≥50%)	29 (80.6%)
Total Participants	36 (100%)

Table 4: Attitude Regarding End-O-Life Care

Sr.	Statements	Strongly Disagree 1 Frequency (%)	Disagree 2 Frequency (%)	Neutral 3 Frequency (%)	Agree 4 Frequency (%)	Strongly Agree 5 Frequency (%)
1	Giving nursing care to the dying person is a worthwhile learning experience.	3 (8.3%)	7 (19.4%)	7 (19.4%)	10 (27.8%)	9 (25.0%)
2	I would be uncomfortable talking about impending death with the dying person.	4 (11.1%)	7 (19.4%)	9 (25.0%)	11 (30.6%)	5 (13.9%)
3	I would not want to be assigned to care for a dying person.	3 (8.3%)	8 (22.2%)	11 (30.6%)	6 (16.7%)	8 (22.2%)
4	The nurse should not be the one to talk about death with the dying person.	2 (5.6%)	8 (22.2%)	6 (16.7%)	13 (36.1%)	7 (19.4%)
5	The length of time required to give nursing care to a dying person would frustrate me.	3 (8.3%)	10 (27.8%)	9 (25.0%)	8 (22.2%)	6 (16.7%)
6	I would be upset when the dying person I was caring for gave up hope of getting better.	2 (5.5%)	4 (11.1%)	12 (33.3%)	10 (27.8%)	8 (22.2%)
7	It is difficult to form a close relationship with the family of a dying person.	3 (8.3%)	8 (22.2%)	11 (30.6%)	7 (22.2%)	6 (16.7%)
8	When a patient asks, "Nurse, am I dying?", I think it is best to change the subject to something cheerful.	2 (5.6%)	2 (5.6%)	10 (27.8%)	11 (30.6%)	11 (30.6%)
9	The family should be involved in the physical care of the dying person.	3 (8.3%)	5 (13.9%)	12 (33.3%)	10 (27.8%)	6 (16.7%)

Sr.	Statements	Strongly Disagree Frequency (%)	Disagree Frequency (%)	Neutral Frequency (%)	Agree Frequency (%)	Strongly Agree Frequency (%)
10	I am afraid to become friends with a dying person.	5 (13.9%)	12 (33.3%)	8 (22.2%)	8 (22.2%)	3 (8.3%)
11	Families need emotional support to accept the behavior changes of the dying person.	1 (2.8%)	5 (13.9%)	9 (25.0%)	13 (36.1%)	8 (22.2%)
12	As a patient nears death, the nurse should withdraw from involvement with the patient.	3 (8.3%)	9 (25.0%)	14 (38.9%)	7 (19.4%)	3 (8.3%)
13	The dying person should not be allowed to make decisions about their physical care.	5 (13.9%)	14 (38.9%)	6 (16.7%)	8 (22.2%)	3 (8.3%)
14	Addiction to pain-relieving medication should not be a nursing concern when dealing with a dying person.	4 (11.1%)	10 (27.8%)	14 (38.9%)	6 (16.7%)	2 (5.6%)
15	Educating families about death and dying is not a nursing responsibility.	11 (30.6%)	7 (19.4%)	7 (19.4%)	5 (13.9%)	6 (16.7%)



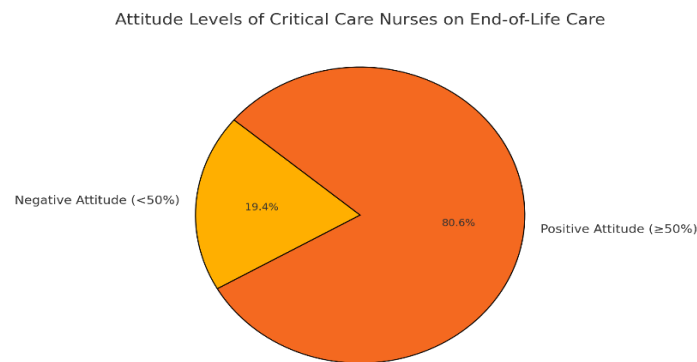


Figure 2 Attitude Level of Critical Care Nurses on End of Life care

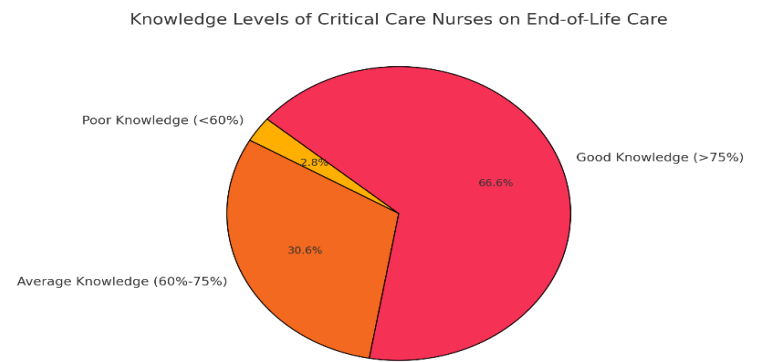


Figure 3 Knowledge pf Critical Care Nurses on End of Life Care

DISCUSSION

The study assessed the knowledge and attitudes of critical care nurses toward end-of-life care, revealing that the majority possessed a good level of knowledge, with 66.7% scoring above 75%, while 30.6% demonstrated average knowledge, and only 2.8% had poor knowledge. These findings indicate that most participants were well-informed about end-of-life care practices, yet a subset still exhibited knowledge gaps that could affect the quality of patient care. Regarding attitudes, 80.6% of participants displayed a positive attitude toward end-of-life care, whereas 19.4% demonstrated a negative attitude. A favorable attitude among healthcare providers is crucial in ensuring compassionate and patient-centered care, particularly in intensive care settings where ethical and emotional challenges frequently arise(14, 15). Comparing these findings with previous research highlights notable differences in knowledge and attitudes among nurses across different healthcare settings. A study conducted at a tertiary care hospital reported a significantly higher proportion of nurses with inadequate knowledge of end-of-life care, with 61.5% scoring below an acceptable level. In contrast, only 2.8% of nurses in the present study demonstrated inadequate knowledge, suggesting better educational exposure, access to training, or institutional support in this setting. Furthermore, while 72.3% of participants in the comparative study expressed negative attitudes toward end-of-life care, the current study observed a far more favorable trend, with 80.6% exhibiting a positive attitude. These discrepancies may be attributable to differences in institutional policies, palliative care integration, and access to professional development programs(16, 17).

A large-scale study in an East African setting, which included 331 participants, reported that 39% of nurses had sufficient knowledge of end-of-life care, while 70.7% exhibited a positive attitude. Notably, factors such as higher educational attainment, clinical experience in caring for chronically ill patients, and specialized training significantly influenced nurses' knowledge and attitudes. In contrast, the present study found that 66.7% of participants had good knowledge, reflecting a stronger overall understanding among the surveyed population. However, the proportion of nurses demonstrating a positive attitude was similar to the previous study, reinforcing the importance of structured training and education in shaping healthcare providers' perspectives on end-of-life care. The inclusion of critical care nurses from multiple specialized units in the present study, as opposed to a single hospital ward, may also account for the higher knowledge levels observed(5, 15). The findings of this study emphasize the importance of continued education and targeted training in end-of-life care. Despite the relatively high knowledge scores, gaps remain in areas such as opioid use, ethical decision-making, and communication with patients and families. Addressing these gaps through structured training programs could further enhance the quality of care provided to terminally ill patients. Additionally, fostering a supportive work environment and encouraging interdisciplinary collaboration among healthcare providers can improve patient outcomes and reduce emotional distress among nurses(1, 18).

Several strengths and limitations must be acknowledged. The inclusion of nurses from various intensive care units and different shifts provided a broader perspective on knowledge and attitudes in different work settings. The relatively small sample size, however, limits the generalizability of the findings. The study's cross-sectional design only offers a snapshot of knowledge and attitudes at a single point in time, making it difficult to establish long-term trends or causal relationships. The absence of data on participants' previous exposure to palliative care education is another limitation, as prior training could significantly influence both knowledge and attitudes(19, 20). Improving training programs tailored to end-of-life care in intensive care settings remains a key priority. Regular assessments should be conducted to evaluate knowledge retention and attitude shifts among nurses, ensuring that ongoing educational interventions address existing gaps. Promoting interdisciplinary collaboration between nursing, medical, and palliative care teams can enhance holistic patient

care and improve communication between healthcare providers and families. The development of policies that support palliative care integration within critical care units is also essential in optimizing patient-centered approaches. Future research should explore the impact of targeted training interventions on both knowledge and clinical practice, as well as investigate the long-term effects of education on attitudes toward end-of-life care(21, 22).

CONCLUSION

This study evaluated the knowledge and attitudes of critical care nurses toward end-of-life care, revealing that most participants demonstrated a strong understanding of key concepts and a predominantly positive outlook. The findings emphasize the critical role that well-informed and compassionate nursing care plays in ensuring dignity and comfort for terminally ill patients. However, the presence of knowledge gaps among a subset of nurses highlights the need for targeted educational interventions to enhance consistency in care delivery. While the overall attitude toward end-of-life care was favorable, addressing the concerns of those with less positive perceptions remains essential to fostering a holistic, patient-centered approach. Strengthening training programs and providing ongoing support can further improve the quality of care, ensuring that all critical care nurses are equipped with the necessary skills and confidence to navigate the complexities of end-of-life care with sensitivity and professionalism.

AUTHOR CONTRIBUTIONS

Author	Contribution
Suriya Jamil*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Muhammad Saif Ullah	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Madiha Mukhtar	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Sheharyar Ahmed	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published

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