EXPLORING ICU NURSES KNOWLEDGE, ATTITUDE, AND SELF-EFFICACY IN DELIVERING PALLIATIVE CARE: A SCOPING REVIEW

Lurdes Acorta Freitas[1*], Hartiah Haroen[2], Ayu prawesti Priambodo[3]

[1-3]Faculty of Nursing, Universitas Padjadjaran

Email Korespondensi: lurdes23001@mail.unpad.ac.id

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ABSTRACT

The integration of palliative care into intensive care units (ICUs) is increasingly recognized as vital in addressing the complex needs of critically ill patients. Nurses in ICUs play a key role in ensuring quality palliative care. However, disparities in knowledge, attitudes, and self-efficacy among ICU nurses remain barriers to optimal care delivery. This scoping review aimed to systematically explore the current evidence on ICU nurses' knowledge, attitudes, and self-efficacy in delivering palliative care. A scoping review following PRISMA-ScR guidelines was conducted. Literature was systematically searched from CINAHL, PubMed, Scopus, Taylor & Francis, and Google Scholar using keyword combinations mapped with MeSH terms. A total of 11 eligible articles were included after applying predefined PCC (Population–Concept–Context) criteria. Quality appraisal was conducted using the JBI checklist. Data were analyzed descriptively qualitatively. 11 studies were analyzed in this review. The findings revealed that most ICU nurses had insufficient knowledge of palliative care, particularly in psychosocial and spiritual dimensions. Attitudes towards palliative care were mixed; while some studies reported favorable views, others indicated high rates of ambivalence or negativity. Self-efficacy levels also varied, though studies showed it was generally higher among nurses with formal training or greater experience. ICU nurses' knowledge and attitudes significantly influence their confidence and ability to deliver effective palliative care. Despite moderate self-efficacy reported in some regions, widespread gaps in knowledge and inconsistent attitudes underscore the urgent need for targeted education, policy support, and ongoing competency development.

Keywords: Palliative Care, Intensive Care Unit, Nurses, Knowledge, Attitudes, Self-Efficacy.

INTRODUCTION

The integration of palliative care into intensive care units (ICUs) has become a global priority, given the increasing complexity of critically ill patients and the recognition of unmet needs related to symptom management, communication, and end-of-life care (Aslakson et al., 2014; J. E. Nelson et al., 2010). Palliative care in the ICU setting aims not only to alleviate suffering and improve the quality of life for patients with life-threatening illnesses but also to support families and facilitate shared decision-making (Neukirchen et al., 2023). Despite its recognized importance, the implementation of palliative

care in ICUs remains suboptimal worldwide (Rao et al., 2023).

Nurses play a critical role in the delivery of palliative care in the ICU, as they are often the primary caregivers responsible for continuous patient assessment, symptom management, and communication with patients and families (Araújo et al., 2022; J. Nelson et al., 2011). However, several studies have reported that ICU nurses frequently experience barriers related to inadequate knowledge, negative or ambivalent attitudes, and low self-efficacy regarding the provision of palliative care (Abd El-Aziz Basal, 2017; Awad et al., 2025; Kurnia et al., 2019a; Sesma-Mendaza et al., 2022; Tripathy et al., 2017). These barriers can lead to delayed or insufficient palliative interventions, resulting in suboptimal patient and family outcomes (Puntillo et al., 2014).

Knowledge deficits among ICU nurses regarding palliative care principles, symptom management, and communication strategies have been consistently documented (Sesma-Mendaza et al., 2022). Such gaps may stem from insufficient formal education, limited access to training programs, and a lack of institutional support (Parekh de Campos et al., 2022; Salikhanov et al., 2023). Attitudes toward palliative care, shaped by cultural, personal, and professional experiences, also significantly influence nurses' willingness to engage in palliative practices (Awad et al., 2025; Fernández-Gutiérrez et al., 2024) In some cultures, discussing death and end-of-life issues remains a sensitive topic, which may hinder open communication and the timely initiation of palliative care (Alshehri et al., 2022; Mercadante et al., 2018).

Self-efficacy, defined as an individual's belief in their ability to perform specific tasks, is a crucial determinant of nurses' engagement in palliative care (Bandura, 1994). Evidence suggests that higher self-efficacy is associated with greater confidence, improved communication, and better patient outcomes (Fadaei et al., 2024). However, self-efficacy is closely related to both knowledge and attitudes, indicating that interventions aimed at improving palliative care delivery should address these domains simultaneously (Fadaei et al., 2024; Kurnia et al., 2019a). Enhancing self-efficacy requires targeted education and supportive work environments that empower nurses to apply their knowledge and positive attitudes in clinical settings.

Palliative care has increasingly become an integral component of comprehensive healthcare, especially in intensive care units (ICUs), where patients often face life-threatening conditions with complex symptom burdens (Aslakson et al., 2014). Nurses in the ICU are frontline healthcare providers who play a crucial role in implementing palliative care (J. Nelson et al., 2011). Therefore, exploring the knowledge, attitudes, and self-efficacy of ICU nurses regarding palliative care is essential.

Despite the growing body of literature on palliative care in ICUs, there is a lack of comprehensive synthesis mapping the current state of knowledge, attitudes, and self-efficacy among ICU nurses, particularly from a global perspective. A scoping review is warranted to systematically examine and summarize existing evidence, identify gaps, and inform future educational and policy interventions. Therefore, this study aims to conduct a scoping review to

explore and map the knowledge, attitudes, and self-efficacy of ICU nurses in the implementation of palliative care. The findings are expected to provide valuable insights for healthcare educators, policymakers, and clinical leaders to design targeted interventions that enhance the quality of palliative care in intensive care settings worldwide.

LITERATURE REVIEW

Knowledge and Attitudes in Palliative Care in the Intensive Care Unit

Knowledge in palliative care in the intensive care unit refers to the extent to which healthcare **workers**—particularly nurses and physicians—understand the principles, goals, and clinical practices related to pain management, symptom control, empathic communication, patient value-based decision-making, and end-of-life care ethics (Schwarz & Lee, 2019). This knowledge includes an understanding of the concept of palliative care, the criteria for patients requiring palliative care, appropriate interventions, and multidisciplinary coordination to maintain the comfort and quality of life of critically ill patients (Schwarz & Lee, 2019).

Meanwhile, attitudes in palliative care reflect healthcare workers' evaluative tendencies toward the application of palliative care principles in the intensive care unit, including acceptance of a comfort-focused approach, preparedness to address issues of death, sensitivity to the psychosocial needs of patients and families, and a willingness to engage in honest, open, and empathetic communication. These attitudes are heavily influenced by professional values, clinical experience, organizational culture, and personal beliefs about end-of-life care (Schwarz & Lee, 2019).

Nurse Self-Efficacy in Palliative Care in the Intensive Care Unit

Self-efficacy is an individual's belief in their ability to organize and execute actions to achieve specific goals. In the context of palliative care in the intensive care unit, nurse self-efficacy refers to their confidence in providing holistic care to patients with critical illness or those nearing the end of life. This concept encompasses empathetic communication skills, physical symptom management, psychosocial support, and collaboration with a multidisciplinary team (Heo et al., 2022).

RESEARCH METHODS

This study employs a scoping review design. This approach offers a broader conceptual scope, enabling a comprehensive explanation of various relevant research findings. The scoping review framework consists of five core stages: identifying the review question, locating relevant studies, selecting appropriate studies, charting the data, and collating, summarizing, and reporting the results. (Peterson et al., 2017).

The article selection process for this review was carried out by six reviewers following the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guidelines (see Figure 1) (Page et al., 2021) Reporting standards for scoping reviews are guided by the PRISMA Extension for Scoping Reviews (PRISMA-ScR), which promotes transparency and reproducibility through structured reporting of search strategies, study selection, data extraction, and synthesis (Tricco et al., 2018). The research question and eligibility criteria for the included studies were

developed using the PCC framework, which stands for Population, Concept, and Context. The research question is how are the knowledge, attitudes, and self-efficacy of nurses in providing palliative care in the ICU?

P (Population) : ICU Nurses
C (Concept) : Knowledge, Attitude, and Self-efficacy
C (Context) : Palliative Care

In this review, articles that were not available in full text, not published in English, or secondary studies were excluded. Inclusion criteria consisted of accessible full-text articles published in English that addressed knowledge, attitudes, and self-efficacy of ICU nurses regarding palliative care. Furthermore, this review did not impose any restrictions on the publication year to capture a wide range of study designs related to the topic, allowing for a comprehensive search of relevant studies.

The identification of articles was systematically conducted across four major databases: CINAHL Plus with Full Text, PubMed, Scopus, and Taylor & Francis, as well as the search engine Google Scholar. The search terms included combinations of "(nurse or nurses or nursing or nursing staff or health care professional or registered nurse) AND (knowledge or education or understanding or awareness) AND (palliative care or terminal care or end of life care) AND (intensive care unit or icu or critical care or critical care unit)." Each term was verified using Medical Subject Headings (MeSH), and synonyms were incorporated to ensure retrieval of all potentially relevant articles. Additionally, Boolean operators "AND" and "OR" were applied to refine or broaden the search results across different variations of the terms.

Three authors independently selected studies that met the eligibility criteria. The authors checked for duplications in the initial selection process using the Mendeley reference manager. They then checked the title, abstract, and full text for relevance to the research topic and set inclusion and exclusion criteria. In the final process, the authors checked each full text using the Joanna Briggs Institute (JBI) critical appraisal checklist (Joanna Briggs Institute (JBI), 2022). After the assessment, the authors eliminated all studies with a JBI score <70%. Furthermore, the authors made decisions if there were any discrepancies in the selection results. All authors did not have any disagreements regarding the eligibility of this study.

In this review, data extraction from the studies analyzed using a table that can describe in detail all the results related to the topic discussed. The information presented in the extraction table is related to the characteristics of the study: author, location, design, participant, outcome (knowledge, attitude, self-efficacy), results, and JBI. Data analysis was carried out thematically and qualitatively with an exploratory descriptive approach. The data analysis process begins with the identification and presentation of data obtained in the form of tables based on the reviewed articles. After obtaining the data, all authors analyzed and explained each finding. Finally, the authors rechecked the included studies to ensure and minimize errors.

RESEARCH RESULTS

The process of identifying and selecting studies for inclusion in the manuscript followed a structured and rigorous approach, as illustrated in the PRISMA flow diagram. Initially,

a total of 5,203 articles were identified across multiple databases and search engines. These included EBSCO-host CINAHL (n=1,569), PubMed (n=1,791), Scopus (n=1,410), Taylor and Francis (n=133), and Google Scholar (n=300). After removing 340 duplicate records, 4,863 articles remained for the initial screening phase.

During the screening process based on titles and abstracts, 4,836 articles were excluded due to irrelevance or failure to meet basic inclusion parameters, leaving 27 articles for further scrutiny. These remaining articles were then assessed more thoroughly for their comprehensiveness and alignment with predefined inclusion criteria, including aspects such as the population studied, the intervention investigated, and the language used in the publication.

Following this in-depth review, 16 articles were excluded. Ten of these were rejected because their sample populations were too heterogeneous, which could compromise the consistency of the analysis. The remaining six were removed because their outcomes were not considered suitable for the objectives of the study. Ultimately, 11 full-text articles met all the eligibility requirements and were appraised using the JBI Critical Appraisal Tools. These 11 studies were then included and analyzed in the final manuscript, forming the evidence base for the synthesis.

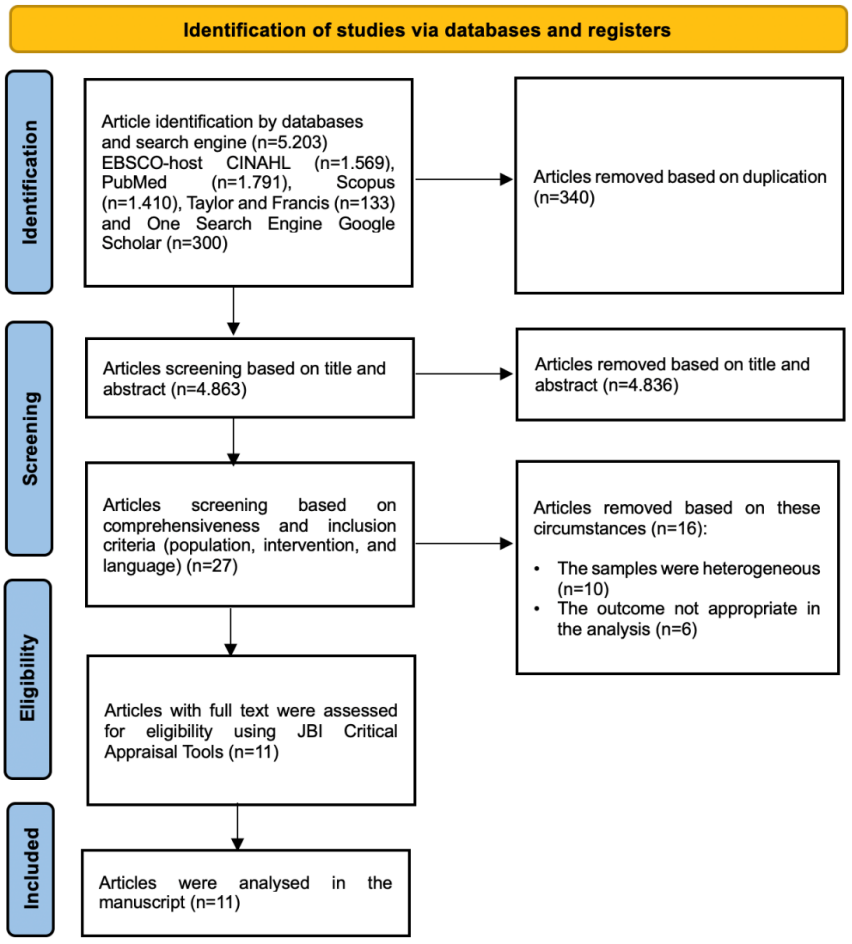

Figure 1. PRISMA Flow Charts

Table 1 shows the characteristics of the studies analyzed in this review. The results showed that there was diversity in study **design**, geographic location, number of participants, and instruments used to measure various aspects of palliative care in the intensive care unit (ICU). These studies were conducted in various countries, including Palestine, Egypt, India, Jordan, Indonesia, China, Iran, and Spain, reflecting the global concern for palliative care issues in the ICU environment. Most studies used a cross-sectional design, either descriptive or correlational.

The number of participants in these studies varied,d ranging from 68 to 260 nurses, with an overall focus on those working in the ICU. This shows that ICU nurses are the main target in evaluating palliative care competence, because they are on the front line in caring for critical patients who are facing the end of life. The instruments used in these studies were also quite diverse, reflecting the complexity of measuring aspects related to palliative care. Some studies use measuring tools such as the Palliative Care Knowledge Test (PCKT), Palliative Care Self-Efficacy Scale (PCSES), and Frommelt Attitudes Toward Care of the Dying (FAT-COD), which respectively assess aspects of nurses' knowledge, self-efficacy, and attitudes towards end-of-life care. In addition, instruments such as observational checklists, perception questionnaires, and the End-of-Life Professional Caregiver Survey (EPCS) were used, which broadened the scope of evaluation to nurses' practices and experiences in providing palliative care.

Table 1. Data Extraction

Study	Location	Design	Participants	Instrument	JBI
(Awad et al., 2025)	Palestine	Cross-sectional design	260 nurses working in the ICUs	a. Palliative Care Self-Efficacy Scale (PCSES) b. Frommelt Attitudes Toward Care of the Dying (FAT- COD) scale c. Palliative Care Quiz for Nursing (PCQN)	8/8
(Abd El-Aziz Basal, 2017)	Egypt	Descriptive design	70 nurses working in the ICUs	a. Nurses' knowledge questionnaire b. An observational checklist for nurses' practice c. regarding palliative care	7/8
(Tripathy et al., 2017)	India	Descriptive design	138 nurses working in the ICUs	A self-administered questionnaire	6/8

Study	Location	Design	Participants	Instrument	JBI
(Hamdan et al., 2023)	Jordan	Cross-sectional design	182 ICU nurses	d. Frommelt Attitudes Toward Care of the Dying (FAT- COD) scale e. Palliative Care Quiz for Nursing (PCQN)	8/8
(Subih et al., 2022)	Jordan	Cross-sectional design	175 ICU nurses	Nurses' knowledge about EOLC- End-of Life Professional Caregiver Survey (EPCS)	6/8
(Theresia Avila Kurnia et al., 2020)	Indonesia	Correlational study with a cross-sectional approach	127 ICU nurses	Palliative Care Knowledge Test (PCKT)	6/8
(Kurnia et al., 2019a)	Indonesia	Cross-sectional design	127 ICU nurses	a. Palliative Care Knowledge Test (PCKT) **b.** Palliative Care Practice of Registered Nurses (PCPCRN) Palliative Care Nursing Self-Competence Scale (PCNSC) questionnaire	6/8
(He et al., 2025)	China	Cross-sectional design	203 ICU nurses	Knowledge, attitude, and practice (KAP) questionnaire	8/8
(Fadaei et al., 2024)	Iran	Descriptive-comparative cross-sectional study	150 ICU nurses	a. Palliative Care Knowledge Test (PCKT) b. Palliative Care Self- Efficacy Scale (PCSES).	8/8
(Sesma-Mendaza et al., 2022)	Spain	Descriptive observational cross-sectional study	68 ICU nurses	Palliative Care Quiz for Nurses	6/8
(Kurnia et al., 2019b)	Indonesia	Correlational study with a cross sectional approach	127 ICU nurses	a. Standard perception questionnaire from White & Coyne b. Palliative Care Nursing Self-	6/8

Study	Location	Design	Participants	Instrument	JBI
				Competence Scale (PCNSC)	

Quality Appraisal Results

The methodological quality of the 11 included cross-sectional studies was assessed using the JBI Critical Appraisal Checklist. The findings revealed that four studies Awad et al. (2025), Hamdan et al. (2023), Fadaei et al. (2024), and He et al. (2025) achieved the highest score of 8 out of 8, indicating high methodological robustness (Awad et al., 2025; Fadaei et al., 2024; Hamdan et al., 2023; He et al., 2025). These studies clearly defined inclusion criteria, described participants and settings in detail, employed valid and reliable measurement tools, and addressed confounding factors adequately while applying appropriate statistical analysis. Such consistency suggests a strong level of internal validity and reliability in their findings related to palliative care among ICU nurses.

Several other studies such as Kurnia et al. (2019a), Abd El-Aziz Basal (2017), Sesma-Mendaza et al. (2022), Subih et al. (2022), Theresia Avila Kurnia et al. (2020), Tripathy et al. (2017) and Kurnia et al. (2019b) scored between 6 and 7. These studies generally demonstrated strengths in defining their sample criteria, measurement of exposure, and reliability in outcome measurement. However, most of them lacked clarity or completeness in addressing potential confounding factors (questions 5 and 6), which may impact the interpretation of their conclusions. In some cases, the criteria used to measure conditions were not fully standardized or explicitly reported.

Knowledge, Attitude, and Self-Efficacy among ICU Nurses in Providing Palliative Care

The reviewed studies revealed a generally insufficient level of knowledge among ICU nurses regarding palliative care. For instance, several studies reported that a significant proportion of nurses had low knowledge levels (Abd El-Aziz Basal, 2017; Awad et al., 2025; Kurnia et al., 2019a; Theresia Avila Kurnia et al., 2020). Similarly, Hamdan et al. (2023) highlighted a particularly weak understanding in psychosocial and spiritual care (Hamdan et al., 2023). Subih et al. (2022) (Subih et al., 2022) indicated a moderate level of knowledge, especially in cultural and ethical components, while He et al. (2025) and Fadaei et al. (2024) demonstrated relatively higher knowledge scores. (Fadaei et al., 2024; He et al., 2025) Sesma-Mendaza et al. (2022) (Sesma-Mendaza et al., 2022)found that most nurses

Table 2. Study Outcome

Study	Knowledge	Attitudes	Self-Efficacy	Results
(Awad et al., 2025)	Knowledge mean score was 6.6 ± 2.6 out of 20, which indicated insufficient knowledge levels.	The attitudes mean score was 94.1 ± 2.9 out of 150, suggesting a positive or	The mean score was 23.0 ± 8.1 out of 48, reflecting a	Significant predictors of self-efficacy included ICU experience

Study	Knowledge	Attitudes	Self-Efficacy	Results
		favorable attitude toward palliative care. Also, (62.3%) held favorable attitudes toward EOL caring.	low self-efficacy level	and marital status, with single nurses and more experience showing higher self-efficacy ($p<$ 0.01).
(Abd El-Aziz Basal, 2017)	More than three quarters (77.1%) and 48.6% of critical care nurses in medical and oncology department respectively had unsatisfactory score of knowledge.	More than half of nurses 51.4% and 25.7% of nurses in Medical and Oncology ICU respectively had poor practice while more than one third (34.3%) and 40% of nurses in Medical and Oncology Intensive Care Units respectively had good practice score	N/I	Nurses in ICU have inadequate knowledge and practice regarding palliative care, even though it is considered an important aspect in improving the quality of care. The main barrier to providing palliative care is the lack of sufficient time to provide quality end-of-life care.
(Tripathy et al., 2017)	Majority (76.8%) agreed to offering a peaceful death in cases where further treatment is considered futile and that doing otherwise caused distress (50.7%). A greater part of respondents (53.6%) considered it correct to continue hydration and feeding till a patient	Most nurses (81.9%) agreed that they should be involved in EOL discussions with the family: nearly 62.3% felt that they should be among the first to initiate these discussions with the family members.	N/I	Work experience was associated with willingness to allow unlimited family visits, discontinue monitoring and examination at the end of life, equate

Study	Knowledge	Attitudes	Self-Efficacy	Results
	under EOL directives passed away; nearly 52.2% disagreed to invasive procedures and investigations.			withholding and discontinuing treatment, and participate in end-of-life team discussions (p=0.005; 0.01; 0.01; and 0.001).
(Hamdan et al., 2023)	The mean total knowledge scores were 8.88 (standard deviation [SD], 2.52). The lowest level of knowledge was in psychosocial and spiritual care (0.51±0.70).	The mean total attitude scores were 8. 103.14 (SD, 12.31). The percentage of nurses with unfavorable attitudes was 53.3%.	N/I	Significant differences in knowledge and attitude levels were observed according to educational level, experience, and hospital type.
(Subih et al., 2022)	The total mean scale for EPCS was (M=2.58) (SD=.48), which indicates that the nurses had a moderate/quite a lot of knowledge. The highest subscales degree for EPCS was in the cultural, ethical, and national values (M= 2.74) (SD=.52)	N/I	N/I	Knowledge about EOLC was correlated with age, work experience, and training course in palliative or EOLC. The main predictor of EPCS was training courses in palliative or EOLC.
(Theresia Avila Kurnia et al., 2020)	Majority of the respondents (81.1%) had less knowledge related to PC in ICU	N/I	N/I	Most of the respondents had high self-confidence (56.7%). There was a significant

Study	Knowledge	Attitudes	Self-Efficacy	Results
				relationship between knowledge and self-confidence variables.
(Kurnia et al., 2019a)	Lack of knowledge (81,1%).	N/I	High self-efficacy (56.7%)	There was a significant relationship between self-efficacy with work experience, nurses' interest in the nursing profession, knowledge and perception variables. The most dominant factors related to self-efficacy, namely knowledge and perceptions of nurses related to PC
(He et al., 2025)	Median score of knowledge were 10 (range, 0–16) out of 18	Median score of attitudes were 39 (range, 30–50) out of 50	N/I	The knowledge scores correlated with the attitude (r=0.26, P<0.001) and practice (r=0.36, P<0.001) scores. The attitude scores correlated with the practice scores

Study	Knowledge	Attitudes	Self-Efficacy	Results
				(r=0.39, P<0.001).
(Fadaei et al., 2024)	The mean score for palliative care knowledge was 10.59 (± 2.10) for nurses in intensive care units	N/I	Mean score for palliative care self-efficacy was 28.01 (± 10.29) for nurses in intensive care units	Variables such as the history of caring for dying patients in the hospital (P = 0.004) or at home (P = 0.01), workplace (P = 0.002), and work experience (P = 0.03) were identified as the main predictors of palliative care knowledge Palliative care self-efficacy was affected by age (P < 0.001), history of participation in palliative care training courses (P = 0.008), and palliative care knowledge score (P = 0.01). Discussion
(Sesma-Mendaza et al., 2022)	• The mean score of the questionnaire was 5.69/10 (SD:1.23, min 2.5- max 8.5). Thirteen nurses (19.1%) scored	N/1	N/I	The highest score corresponds to the questions relating to the philosophy

Study	Knowledge	Attitudes	Self-Efficacy	Results
	less than 5 (fail); 40 nurses (58.8%) scored between 5 and 6.99 (pass), and 15 nurses (22.1%) scored 7 or more (outstanding). • Overall, the correct answers of the questionnaire were 56,98%.			and principle of palliative care, and the lowest to the psychosocial aspects.
(Kurnia et al., 2019b)	N/I	N/I	Majority of respondents had high self-efficacy (56.7%) and	Majority of respondents had high self-efficacy (56.7%).

DISCUSSION

The results of this scoping review provide a comprehensive overview of ICU nurses' knowledge, attitudes, and self-efficacy in delivering palliative care across various global contexts. Findings from the 11 analyzed studies indicate that the majority of ICU nurses still possess inadequate knowledge of palliative care, particularly in the psychosocial and spiritual domains. This lack of knowledge constitutes a major barrier to the optimal implementation of palliative care in the ICU (Choi & Murn, 2020; Cox et al., 2012; Metaxa et al., 2021). This is consistent with the findings of previous studies that have highlighted similar challenges across various countries.

Lack of formal training and continuing education regarding palliative care is a major factor contributing to the low knowledge of ICU nurses (Chen et al., 2022; Korsah & Schmollgruber, 2023; Stephens & Rochmawati, 2022). Several studies in this review reported that ICU nurses did not receive sufficient training, either during basic education or on-the-job training (Abd El-Aziz Basal, 2017; Awad et al., 2025; Fadaei et al., 2024; Kurnia et al., 2019b; Sesma-Mendaza et al., 2022; Tripathy et al., 2017). This has a direct impact on nurses' confidence and ability to provide effective palliative care, and reinforces the need for curriculum reform and the development of structured training programs.

ICU nurses' attitudes towards palliative care were found to vary, ranging from positive to ambivalent or negative (Abd El-Aziz Basal, 2017; Awad et al., 2025; Hamdan et al., 2023; He et al., 2025; Tripathy et al., 2017). These attitudes are influenced by a variety of factors, including culture, personal and professional experiences, palliative care training and perceived need for training (Rafiee et al., 2024). Studies reporting more positive attitudes generally came from nurses who had

greater exposure to the concept of palliative care or worked in institutions that supported open communication about end-of-life issues.

In addition to nurses' knowledge and attitudes in the delivery of palliative care, self-efficacy is also a crucial aspect to consider. Nurses' self-efficacy or their confidence in performing palliative care tasks also varies, but tends to be higher among those who have received formal training or have longer work experience in the ICU (Awad et al., 2025; Fadaei et al., 2024; Kurnia et al., 2019b, 2019a). These findings are in line with Bandura's theory, which posits that direct experience and social support are essential in developing self-efficacy, particularly in performing complex tasks such as palliative care (Bandura, 1994). However, self-efficacy is also closely related to knowledge and attitudes, so interventions to improve nurse competence must cover these three aspects simultaneously (Awad et al., 2025; Fadaei et al., 2024).

A variety of factors can influence nurses' levels of self-efficacy in delivering palliative care. Previous studies have reported that significant predictors of self-efficacy include ICU experience and marital status, with single and more experienced nurses demonstrating higher levels of self-efficacy (Awad et al., 2025). Another study reported that knowledge of palliative care and length of experience as an oncology nurse significantly predicted self-efficacy for palliative care, accounting for 14.0% of the variance (Kim et al., 2020). These findings indicate that nurses' self-efficacy is not only influenced by internal factors such as personal motivation and interests, but also by specific professional experiences, such as duration of work in intensive care units and experience with terminal patients.

The main barriers to the implementation of palliative care in the ICU identified in this review include insufficient knowledge, negative or ambivalent attitudes, low self-efficacy, lack of institutional support, and cultural resistance to discussions about death and end-of-life care (Abd El-Aziz Basal, 2017; Awad et al., 2025; Fadaei et al., 2024; Hamdan et al., 2023; He et al., 2025; Kurnia et al., 2019a, 2019b; Sesma-Mendaza et al., 2022; Subih et al., 2022; Theresia Avila Kurnia et al., 2020; Tripathy et al., 2017). High staff turnover rates and limited organizational, environmental, and resource capacities particularly in low- and middle-income countries—further exacerbate these challenges. These findings are consistent with previous systematic reviews that have also highlighted similar barriers in the integration of palliative care within critical care settings (Alshehri et al., 2020; Baker et al., 2015; Kyeremanteng et al., 2019).

The factors that facilitate the successful implementation of palliative care in the ICU include supportive knowledge and perceptions, strong practice enablers, organizational structures that accommodate relevant policies, continuous education, mentorship, supportive leadership, and collaboration between ICU teams and palliative care teams (Alshehri et al., 2020; Langley et al., 2024). The development of interprofessional networks and regular discussion forums can improve collaboration and strengthen team capacity in facing clinical challenges in the ICU (Baker et al., 2015; Kirkpatrick et al., 2023). Thus, the combination of these internal and external factors synergistically creates an

environment conducive to optimizing palliative care in the intensive care unit.

Thus, efforts to enhance ICU nurses' knowledge, attitudes, and self-efficacy through continuous education, organizational support, and multidisciplinary collaboration are crucial to ensure the optimal implementation of palliative care. Integrated and evidence-based interventions are expected to address existing barriers while improving the quality of life for critically ill patients and their families. These findings underscore the importance of a shared commitment from educational institutions, hospitals, and policymakers to strengthen ICU nurses' capacity in palliative care. Moving forward, further research is needed to explore innovative and effective strategies for sustainably improving ICU nurses' competencies across diverse healthcare contexts.

CONCLUSION

This scoping review identified significant variability in the knowledge, attitudes, and self-efficacy of ICU nurses regarding palliative care across different countries and healthcare settings. The majority of the studies reviewed revealed inadequate knowledge, particularly in the domains of psychosocial and spiritual care, despite the critical role nurses play in managing end-of-life care. While several studies reported positive attitudes toward palliative care, others noted ambivalence or resistance, influenced by cultural, personal, or institutional factors. Self-efficacy was found to be moderate to high among ICU nurses, especially among those who had received formal palliative care training or had prior experience in managing dying patients. However, self-efficacy was closely linked to knowledge and attitudes, suggesting that educational interventions targeting these areas could significantly enhance nurses' confidence and competence in delivering palliative care.

Moreover, the review underscored the need for structured and ongoing education, training, and institutional support to overcome the barriers related to knowledge gaps, inconsistent attitudes, and low self-efficacy. Without these, the provision of high-quality, patient-centered palliative care in the ICU setting may remain inconsistent and suboptimal. Therefore, to improve the delivery of palliative care in ICUs globally, a multifaceted approach is essential one that combines curriculum enhancement, clinical training, and organizational policy reform. Future research should focus on intervention-based studies that evaluate the effectiveness of training programs in improving these core competencies and their impact on patient and family outcomes

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