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**REVIEW**

# Palliative care outcomes in adult intensive care units: candidate quality outcome indicator items a scoping review protocol

## Resultados de los cuidados paliativos en unidades de cuidados intensivos para adultos: indicadores candidatos de calidad de los resultados, protocolo de revisión exploratoria

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## ABSTRACT

**Introduction:** palliative care (PC) outcomes in the ICU serve as indicators of the quality of care. However, the variability in outcomes presents a challenge in maintaining a clear focus on the goals of palliative care in the intensive care unit (ICU). This study aimed to map the outcomes of palliative care as potential quality indicators for PC in ICU settings.
**Method:** this study followed the PRISMA-ScR approach, conducting a systematic search across multiple databases, including PubMed, ProQuest, EBSCOhost, Scopus, ScienceDirect, and BASE. The methodological framework was structured according to the guidelines suggested by Arksey and O'Malley.
**Results:** a total of 57 studies were mapped to examine PC outcomes in the ICU. These outcomes were categorised into five thematic groups, with Spiritual Support being the least diverse, comprising only one outcome category: emotional and spiritual well-being.
**Conclusions:** the outcomes of palliative care (PC) in the ICU could serve as potential quality indicators for assessing the effectiveness of palliative care in intensive care settings.

**Keywords:** Critical Illness; Palliative Care; Outcome Assessment; Quality Indicators; Intensive Care Units.

## RESUMEN

**Introducción:** los resultados de los cuidados paliativos (CP) en la unidad de cuidados intensivos (UCI) sirven como indicadores de la calidad de la atención. Sin embargo, la variabilidad de estos resultados representa un desafío para mantener un enfoque claro en los objetivos de los cuidados paliativos en la UCI. Este estudio tuvo como objetivo mapear los resultados de los CP como posibles indicadores de calidad en entornos de UCI.
**Método:** este estudio siguió el enfoque PRISMA-ScR, realizando una búsqueda sistemática en múltiples bases de datos, incluidas PubMed, ProQuest, EBSCOhost, Scopus, ScienceDirect y BASE. El marco metodológico se estructuró conforme a las directrices sugeridas por Arksey y O'Malley.
**Resultados:** se mapearon un total de 57 estudios para examinar los resultados de los CP en la UCI. Estos resultados se categorizaron en cinco grupos temáticos, siendo el Apoyo Espiritual el menos diverso, ya que comprendía solo una categoría de resultado: bienestar emocional y espiritual.
**Conclusiones:** los resultados de los cuidados paliativos (CP) en la UCI podrían servir como posibles indicadores de calidad para evaluar la efectividad de los cuidados paliativos en contextos de cuidados intensivos.

**Palabras clave:** Enfermedad Crítica; Cuidados Paliativos; Evaluación de Resultados; Indicadores de Calidad; Unidades de Cuidados Intensivos.

## INTRODUCTION

Palliative care (PC) in intensive care units (ICU) is progressively emerging as a significant issue in contemporary healthcare practices.[1,2,3] Patients admitted to the Intensive Care Unit frequently experience critical conditions with uncertain prognosis,[4,5,6,7,8] so the need for palliative care (PC) is essential to enhance the patient's quality of life (QoL) and support the family in decision-making. Nonetheless, the execution of PC in ICUs still faces various challenges, including the lack of clear quality indicators to evaluate the effectiveness of palliative interventions.

Numerous studies have demonstrated that PC interventions in the ICU can reduce the length of stay, improve communication between healthcare workers and families, and reduce unnecessary medical interventions.[9,10,11,12,13,14,15,16] In addition, Comprehensive PC in the ICU has demonstrated a reduction in emotional stress and anxiety among patients' families.[8,14,15,17,18] However, there is still a gap in understanding the quality indicators that can be used to assess the success of PCs in the ICU.

In an effort to improve the quality of PC in the ICU, it is necessary to develop reliable and measurable outcome quality indicators. These indicators must encapsulate essential elements of PC, encompassing symptom management, communication, emotional support, and collaborative decision-making.[19,20,21,22,23,24,25,26,27] Therefore, this study aims to identify and propose quality indicator items of PC outcomes that can be used in ICUs to improve the standard of care and ensure that palliative interventions provide optimal benefits for patients and their families. With well-defined quality indicators, it is hoped that PC in the ICU can be more structured, measurable, and effective in improving patient welfare and reducing the psychosocial burden experienced by families and health workers.

## METHOD

This scoping review (ScR) aims to map the available evidence and identify opportunities, limitations, and gaps in the evaluation of P-ICU outcomes. This process follows the PRISMA-ScR guidelines for systematic literature synthesis[28] and implements a structured seven-step framework according to O'Malley et al.[29]

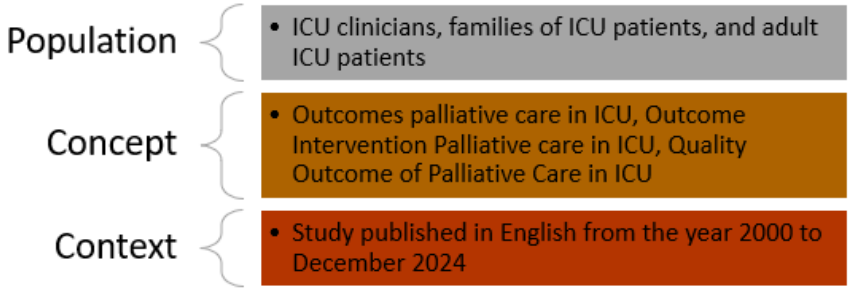


**Figure 1.** Population, Concept, Context (PCC) literature study outcome PC in ICU

Stage 1. Identification of the research question: how to map PC outcomes in the ICU?

Stage 2. Identify relevant studies: The study was retrieved from multiple databases, including PubMed, ProQuest, EBSCOhost, Scopus, ScienceDirect, and BASE. We utilise the PCC (population, concept, and context) framework—a systematic organisation— using Rayyan software. The study follows the PRISMA-ScR guidelines.

Stage 3. Study selection: We included database keywords with the following search terms: ("Critical Illness"[MeSH] OR "PC"[MeSH]) AND ("Outcome Assessment, Health Care"[MeSH]) AND ("Intensive Care Units"[MeSH]). The inclusion criteria in this article include: (1) available in full text, (2) from scientific journals, (3) has gone through a peer review process, (4) published in English, (5) is a final article, (6) is conducted in an adult ICU, (7) includes original studies and literature reviews, and (8) articles that have been published.

Stage 4. Data extraction and mapping: We create a graph that displays specific information about the study's outcome. The information mapped includes the author's name, country, objectives, methods, samples, and outcomes of PC in the ICU.

Stage 5. Preparation, synthesis, and reporting of results: We conduct thematic and sub-thematic analyses of the outcome codes obtained from the study and present them in the form of images, tables, and narratives.

Stage 6. Expert consultation: we consult with an expert PC professor, a critical nursing specialist, and a consultant anaesthetist to provide input and opinions regarding the results obtained.

Stage 7. Updates and reflections on processes: we evaluate methodologies and results.

## RESULTS

Figure 1 and table 1 Illustrate that we obtained 384 successfully obtained at the recorded screening stage. After removing duplicates, the study is issued based on design, topic relevance, and publication criteria. After full-text screening, 57 studies were finally included in this review.

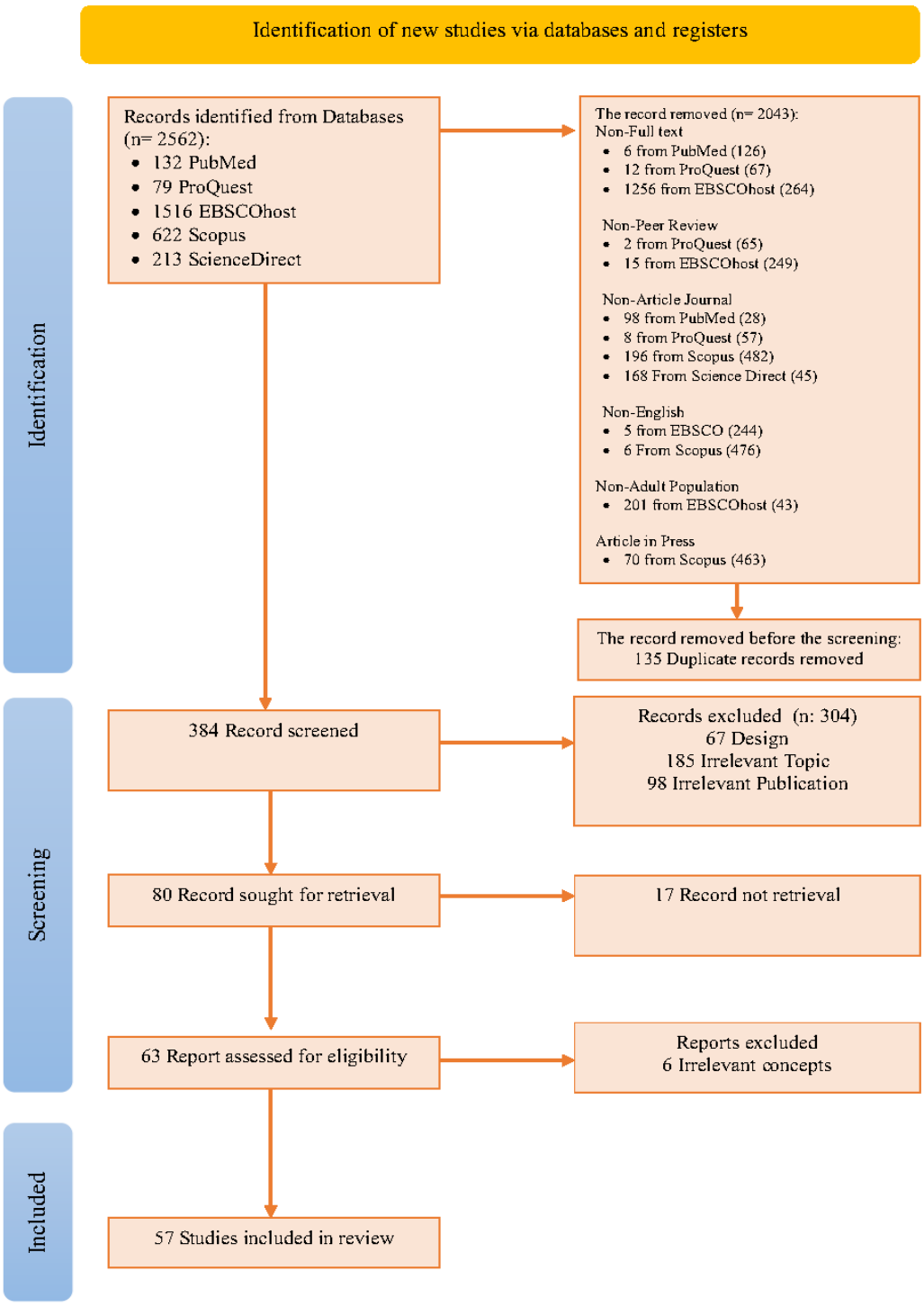


**Figure 2.** Prisma Flow Chart

**Table 1.** Characteristics of sources of evidence

| No | Author and years | Country | Purpose | Method | | | ICU Type | Outcome Result |
|---|---|---|---|---|---|---|---|---|
| | | | | Design | Population* | Total | | |
| 1. | Metaxa et al.[30] | USA | Reviewed ICU palliative care models and practice variations. | Systematic Review | ICU Patient | 58 Items | Adult ICU | ICU and hospital length of stay, decisions to limit life-sustaining treatment, mortality, advance care planning, costs, nurse satisfaction, and family meetings or discussions regarding goals of care. |
| 2. | Mercadante, Gregoretti and Cortegiani[31] | Italy | Provided practical guidance for ICU palliative care implementation. | National Survey | ICU Clinician | Unidentified | Adult ICU | Disconnection from ventilators, stopping inotropes, nutrition, dialysis, hydration, pain management, advance directives, hospice referral, improved quality of life, and reduced non-beneficial therapies. |
| 3. | Smith and Cassel[32] | USA | Analyzed costs and non-clinical benefits of ICU palliative care. | Review | ICU Patients, Families of ICU patients, Clinicians | 7 Items | Adult ICU | Cost reduction, improved quality of care, reduced length of stay, decreased ICU utilization, symptom improvement, and increased patient and family satisfaction. |
| 4. | Romano et al.[33] | USA | Early palliative care reduced ICU use in cancer patients. | A Retrospective Cohort | Patients With Advanced Cancer | 470 Patients. | Adult ICU | ICU utilization, hospital death, hospice enrollment, and cancer treatment. |
| 5. | Mun et al.[34] | USA | Improved consultations and end-of-life care in the ICU. | A Quality-Improvement Program | Patients With Medical, Surgical, Cardiac, And/Or Neurologic | 850 Patients. | Adult ICU | Reduced ICU and hospital length of stay, increased identification of goals of care, advance directive completion, surrogate decision-maker identification, code status determination, family meetings, 'goals-of-care' video use, palliative care brochure distribution, and consultations |
| 6. | Bharadwaj et al.[35] | USA | Showed systemic benefits of integrating palliative care. | Retrospective Medical Records | Medical Record | 353 Patients. | Adult ICU | Enhanced quality of life, effective symptom management, lower mortality, reduced aggressive interventions, higher patient and family satisfaction, shorter hospital stay, healthcare cost savings, improved care planning, increased family support, and better end-of-life care quality." |
| 7. | Bakitas et al.[36] | Lebanon | Nursing-Led Interventions in Advanced Cancer: Effects on QoL, Symptoms, Mood, and Resource Use | Randomized Controlled Trial | Patients with advanced Cancer | 322 Patients. | Adult ICU | Patient quality of life, symptom intensity, mood and depression, resource utilization, and psychosocial wellbeing |
| 8. | Aslakson et al.[37] | USA | To summarize these studies and their outcomes. | A Systematic Review Of Interventions | Adult patient (ICU Patient) | 37 Articles | Adult ICU | ICU and hospital length of stay, family satisfaction, mortality rate, communication quality and frequency, family symptom distress and anxiety, medical procedure utilization, time to comfort measures, withdrawal of life-sustaining treatments, and time to do not resuscitate orders. |

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| 9. | Delgado-Guay et al.[38] | USA | Palliative Care Team Impact on Symptoms, QoL, and Decision-Making in ICU Cancer Patients" | Retrospective | ICU Patients | 1637 Patients. | Adult ICU | Symptom changes (ESAS, MDAS), delirium presence (MDAS score), family distress and support needs, symptom progression from baseline, and palliative care recommendations |
| 10. | Massey et al.[39] | USA | Standardized chaplaincy terminology for ICU settings. | Mixed Methods Approach | ICU Patient | 1126 Patient 27 Fgd Participant | Adult ICU | Building trust, aligning care with patient values, exploring hope, supporting grief, enhancing communication, providing emotional support, acknowledging the situation, facilitating closure, reducing emotional distress, and encouraging self-reflection. |
| 11. | Penrod et al.[40] | USA | Linked palliative care to reduced end-of-life costs in ICU. | Retrospective | ICU Patient | 314 Patients. | Adult ICU | Lower care costs, reduced ICU utilization, enhanced communication, improved care coordination, better patient and family outcomes, decreased unnecessary tests and technology, and improved quality of life. |
| 12. | Creutzfeldt et al.[41] | USA | To examine the frequency and types of potential triggers for palliative care consultations in neuro-ICUs. | Retrospective Cohort Study | ICU Patient | 1268 Patients. | Neuro ICU | DNR orders at death, withholding and withdrawal of life-sustaining therapy, ICU and hospital mortality rates, discharge to hospice/palliative care, and ICU length of stay |
| 13. | Zalenski et al.[42] | USA | Identified frequency and types of triggers for palliative care consultations in neuro ICUs. | Prospective | ICU Patient | 405 Patients. | Adult ICU | Conversion from complete code to DNR status, discharge to hospice services, 30-day readmission, hospital length of stay (LOS), and median direct variable costs. |
| 14. | Villarreal et al.[43] | USA | Calculated the proportion of MICU patients receiving palliative care consultations during intervention. | Prospective Data | ICU Patient | The Preintervention Period Was 243, And 348 In The Intervention Period | Medical ICU | Increased palliative care consultations for deceased patients, higher MICU patient numbers, improved collaboration between MICU and palliative care teams, expanded training for MICU fellows and nurses, and increased bereavement support and hospice discharge planning. |
| 15. | Kyeremanteng et al.[44] | USA | Assessed the impact of palliative care consultations on ICU length of stay (LOS) and expenses. | Literature Review | Adult patient (ICU Patient) | 8 Study | Adult ICU | ICU and hospital length of stay (LOS), mortality rates, and costs associated with ICU and hospital stays. |
| 16. | White et al.[45] | USA | Studied outcomes and costs of hospital palliative care units. | A Longitudinal Study | ICU Patient | 1744 Patient | Adult ICU | Symptom relief, quality of life, patient and family satisfaction, emotional/spiritual wellbeing, end-of-life preferences, ICU length of stay, hospice transition, bereavement support, and healthcare resource utilization |
| 17. | Zalenski et al.[46] | USA | Palliative care screening is associated with poorer outcomes in ICU patients. | Consensus Reports | ICU Patient | 1071 Patient | Medical ICU | Screening rates, palliative care referrals, inpatient mortality, hospice discharge, and hospital/ICU length of stay |

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| 18. | Braus et al.[47] | USA | To assess how a palliative care intervention affects palliative care procedures, clinical outcomes, and family outcomes. | Prospective | ICU Patient | 203 Patients | General ICU | Family meeting frequency, hospital/ICU length of stay, family satisfaction, decision-making satisfaction, family psychological symptoms (depression, PTSD), and family-rated quality of dying |
| 19. | Martz et al.[48] | USA | Nurse-led palliative screening improved care outcomes. | Retrospectively | ICU Patient | 112 Patients | Adult ICU | Hospital/ICU length of stay, discharge disposition, and escalation of care. |
| 20. | Iguina et al.[49] | USA | Assessed effects of palliative care intervention on procedures, clinical outcomes, and family outcomes. | Retrospective Study | ICU Patient | 388 Icu Patients | Mixed ICU | Higher APACHE/SOFA scores, increased ICU resources, worse outcomes, and common PCTs: prolonged ICU stay, readmission, terminal prognosis, and care goal transitions. |
| 21. | Coventry et al.[50] | Australia | To synthesize qualitative studies on family experiences and perceptions of end-of-life care in the ICU following withdrawal of life-sustaining treatments. | Qualitative Meta-Synthesis. | Families Of Patients | 13 Study | General ICU | End-of-life communication, valued care attributes, family preparation/support, and bereavement care |
| 22. | Brooks, Bloomer and Manias[51] | Australia | To describe how clinicians (nurses and physicians) use culturally sensitive communication with patients and families during end-of-life care in the ICU | Systematic Review | Adult Patients (ICU Patients) And Clinicians | 9 Study | Adult ICU | Communication barriers, cultural influences, staff turnover, uncertainty in prognosis, and inadequate clinician support. |
| 23. | Araujo, da Silva and Wilson,[52] | Brazil | To identify nursing interventions aimed at palliative care patients in the ICU. | Systematic Review | Nursing Staff And ICU Patient | 36 Study | General ICU | Promoting patient autonomy, respecting needs, effective communication, shared decision-making, individualized care, basic nursing care, self-care encouragement, involvement of palliative care specialists, and ongoing education for nursing staff. |
| 24. | Hajizadeh et al.[53] | USA | To evaluate the effectiveness of shared decision-making (SDM) compared to other decision-making styles in end-of-life (EOL) care | Systematic Review | ICU Patient | 7 Study | General ICU | Quality of communication, family satisfaction, trust in physicians, care satisfaction, decisional conflict, feeling rushed, decision-making perceptions, and quality of dying |
| 25. | Coventry et al.[54] | Australia | Family Preparation for Death in the ICU: Interventions, Barriers, and Outcomes | Scoping Review | Families of ICU patients | 7 Study | Adult ICU | Reduced anxiety, depression, prolonged grief, and post-traumatic stress symptoms. |

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| 26. | Efstathiou et al.[55] | Canada | To conduct a mixed-methods systematic review on terminal withdrawal of mechanical ventilation in intensive care units | A Mixed Methods Systematic Review, | ICU Patients, Families of ICU patients, Or Healthcare Clinicians | 25 Study | General ICU | Clinicians' perceptions and practices on terminal mechanical ventilation withdrawal, time to death and predictors, analgesia/sedation practices, and impact on patients and families. |
| 27. | Galazzi et al.[56] | Italy | To investigate the relationship between ICU diaries and the grieving process of family members of adult patients who died in the ICU. | Systematic Literature Review | Families of ICU patients | 6 Study | Adult ICU | Understanding patient condition, coping with loss, emotional adjustment, making sense of events, remembrance, impact of photographs, and positive perception in bereavement support |
| 28. | Durán-Crane et al.[57] | Colombia | To identify and synthesize recommendations from scientific societies and experts on end-of-life pain management in the ICU. | Systematic Review | ICU Patient | 10 Study | General ICU | Pain assessment tools, opioids/benzodiazepines, neuromuscular blockers, and quality indicators. |
| 29. | Effendy et al.[58] | Indonesia | Barriers and Facilitators of Palliative Care in ICUs: Healthcare Professionals' Perspectives on End-of-Life Care | Scoping Review | Healthcare Professionals | 14 Study | Adult Icu | Reduced hospital stay, improved end-of-life awareness, better communication, more palliative care in ICU, and identified barriers. |
| 30. | Frost et al.[59] | Canada | Factors Influencing End-of-Life Decision-Making in Critically Ill Patients: A Systematic Review | Systematic Review | Adult Patients And Healthcare Providers | 102 Study | MICU, SICU | Improved communication, alignment with patient wishes, reduced care intensity, family satisfaction, and psychosocial support. |
| 31. | Ribeiro et al.[60] | United Kingdom | Described end-of-life experiences in burn ICU. | Scoping Review | Adult Patients (ICU patients) | 18 Study | Burn Icu | End-of-life decision-making, care goals based on burn severity, symptom control, palliative care integration, and variability in comfort care based on clinician experience |
| 32. | Hamdan Alshehri et al.[61] | Saudi Arabia | To identify factors (barriers and facilitators) influencing the integration of palliative care in ICUs, as perceived by healthcare professionals. | Systematic Mixed-Methods Review | Health Care Professionals | 24 Study | General Icu | Barriers and facilitators, organizational challenges, work environment impact, interpersonal dynamics, communication issues, family involvement, and clinician perceptions |
| 33. | Brekelmans, Ramnarain and Pouwels[62] | Netherlands | To provide an overview of bereavement support strategies and their effects on relatives of deceased ICU patients, focusing on anxiety, depression, PTSD, and complicated grief | Systematic Review | ICU Patients | 7 Study | MSICU, CICU, General ICU | Primary outcomes: anxiety (HADS), depression (HADS), PTSD symptoms (IES-R), complicated grief (ICG), and prolonged grief (HADS/IES-R). |

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| 34. | De Santo-Madeya and Safizadeh[63] | USA | to explore the factors associated with family satisfaction with end-of-life care in the ICU. | Systematic Review | Families of ICU patients | 30 Study | General Icu | communication quality, decision-making involvement, nursing care, ICU environment, and spiritual care availability. |
| 35. | Alyami, Chan and New[64] | Australia | To explore the end-of-life care preferences of advanced cancer patients and their families in ICUs and their alignment with essential end-of-life care elements. | Systematic Review | ICU Patient | 12 Study | General Icu | Care preferences evolve, influenced by demographics; patient-centred communication and shared decision-making improve care. Challenges in ICU end-of-life care require more research. |
| 36. | Hinkle, Bosslet and Torke[65] | USA | To systematically review factors associated with family satisfaction with end-of-life care in the ICU. | Systematic Review | Families of ICU patients | 23 Study | MICU, SICU | Empathy, clear communication, family presence, shared decisions, patient-centred care, and comfort measures enhance family satisfaction and quality of life. |
| 37. | Ivany and Aitken[66] | United Kingdom | To identify the challenges and facilitators faced by ICU multidisciplinary team members in delivering end-of-life care to dying patients. | Scoping Literature Review | Multidisciplinary Team In ICU | 10 Study | General ICU | Challenges such as communication gaps, limited knowledge, family dynamics, environmental constraints, and emotional strain compromise care quality, underscoring the need for improvement. |
| 38. | Velarde-García et al.[67] | Spain | challenges in Providing End-of-Life Care by Nurses in ICUs | Qualitative Systematic Review | Nurses | 22 Study | Adult ICU | Families face emotional burdens, communication challenges, and barriers to care while playing a key role in decision-making. |
| 39. | Kanako Yamamoto et al.[68] | Japan | Effectiveness of Advance Care Planning (ACP) in ICU Patients and Familie | Scoping Review | Adult Patients (ICU patients) | 4 Study | General Icu | Improved ACP knowledge reduces conflict, enhances decision-making aligned with patients' wishes, increases care satisfaction, and reveals existing barriers. |
| 40. | McPherson et al.[69] | USA | Variation in Limitations of Life-Sustaining Treatment in Critically Ill ICU Patients | Systematic Review | ICU Patients | 36 Study | General Icu | Limitation of life-sustaining treatment varies by patient factors, ICU type, and race, with trends over time showing increased frequency, significant impact on resource use, and a high proportion of deaths preceded by such decisions. |
| 41. | Kerckhoffs et al.[70] | Netherlands | Palliative care consultation reduces ICU length of stay and costs. | Systematic Review | ICU Patient And Health Care | 32 Study | Adult ICU | ICU outcomes are influenced by length of stay, mortality, communication quality, care goal documentation, decision-making time, satisfaction, psychological distress, and cost |
| 42. | Khandelwal et al.[71] | USA | Advanced care planning influenced ICU use and decisions. | Systematic Review | Adult Patients (ICU patients) | 22 Study | General ICU | "ICU admissions and length of stay (LOS) have reduced, though outcomes vary across studies. |
| 43. | Green, Stewart-Lord and Baillie[72] | United Kingdom. | Evaluation of End-of-Life and Bereavement Interventions in Acute Hospitals. | Scoping Review | Families of ICU patients And Staff | 42 Study | General ICU | Person- and family-centred care, acts of remembrance, quality communication, satisfaction with end-of-life care, institutional impact, staff support, and emotional aid for bereaved families shape care experiences. |

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| 44. | Leung et al.[73] | Canada | Reviewed transitions to end-of-life care in the ICU. | Meta-Synthesis | Adult patients (ICU patients) | 5 Study | Mixed ICU | Morally ambiguous expectations, limited communication, restricted access to EOLC, and inadequate decision-making mechanisms impact care quality. |
| 45. | Mazzu et al.[74] | USA | To review studies on procedures, protocols, and outcomes of mechanical ventilation withdrawal at the end of life in ICU patients. | Systematic Review | Adult Patients (ICU patients) | 49 Study | Mixed ICU, Neurological ICU | Time to death after ventilator withdrawal, symptom assessment (dyspnea, pain, agitation, delirium), communication, symptom management (opiates, sedation), and perceptions of EOLC quality shape care outcomes. |
| 46. | Bernal, Roberts and Wu[75] | USA | To map existing evidence on interprofessional interventions aimed at improving serious illness communication in the ICU. | Scoping Review | ICU patients, Families of ICU patients | 14 study | General ICU | Patient, family, provider, and systems-focused outcomes influence care quality. |
| 47. | Pignatiello, Hickman and Hetland[76] | USA | To synthesize the theoretical and methodological attributes of decision support interventions for surrogate decision makers (SDMs) of critically ill patients at the end of life. | Systematic Review | Adult Patients (ICU patients) | 22 Study | General ICU | Improved communication, understanding of prognosis, satisfaction with decision-making, reduced conflict, treatment alignment with patient wishes, and emotional support all enhance family care during end-of-life decisions. |
| 48. | Roczen, White and Epstein[77] | USA | To systematically review the evidence on the effects of palliative care programs on clinical and nonclinical outcomes in ICUs | Systematic Review | Adult Patients (ICU patients) | 12 Study | General ICU | Mortality rates, length of stay, life-prolonging treatments, symptom management, family satisfaction, conflict reduction, comfort care, and reimbursement outcomes |
| 49. | Salins, Deodhar and Muckaden[78] | India | to review the literature to determine the factors influencing family satisfaction with ICU care in the context of ICU death. | Systematic Review | Families of ICU patients | 23 Study | General ICU | effective communication, family support, frequent and clear family meetings, involvement in decision-making, end-of-life care and pain management, family-centred care, flexible visiting hours, and palliative care consultation |
| 50. | Scheunemann et al.[79] | USA | A systematic review of interventions to improve ICU communication with families | Systematic Review | ICU Patients | 21 Study | General ICU | Outcomes include reduced family distress, improved comprehension, fewer non-beneficial treatments, shorter ICU stays, stable or lower mortality rates, and enhanced communication. |
| 51. | Schram et al.[80] | USA | Identify physician competencies for patient and family satisfaction in palliative care.". | Systematic Review | ICU Patients and Families of ICU patients | 15 Study | General ICU | Outcomes include patient and family satisfaction, physician palliative care competencies, improved prognostication, conflict resolution, empathetic communication, and increased implementation of family-centred care. |

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|---|---|---|---|---|---|---|---|---|
| 52. | Rao et al.[81] | India | Explore physicians' attitudes toward withholding and withdrawal of life-sustaining treatments in end-of-life care. | Scoping Review | Clinician | 30 Artikel | General Icu | Factors include withholding or withdrawing treatment, professional knowledge and skills, patient and family views, cultural and contextual considerations, and care costs. |
| 53. | Song et al.[82] | Canada | Evaluate the effect of structured communication tools on end-of-life decision-making in ICU patients. | Systematic Review | Adult Patients (ICU patients) | 19 Study | Micu, Sicu, Mixed Icu | Outcomes include increased documentation of care goals, no change in code status documentation, no effect on withdrawal or withholding decisions, reduced mechanical ventilation duration, shorter ICU stay, and lower healthcare costs. |
| 54. | Oczkowski et al.[83] | Australia | Evaluate advance care planning in patients with malignant brain tumours and its impact on EOL care. | Systematic Review | ICU Patients With Primary Malignant Brain Tumors | 19 Study | General ICU | Outcomes include lower hospital readmission rates, reduced ICU use, higher likelihood of dying in a preferred place, increased hospice use, lower stress/anxiety/depression in surviving relatives, variable advance directive completion rates, and unclear impact of ACP on quality of life and end-of-life care. |
| 55. | Spoljar et al.[84] | Croatia | Analyze ethical issues in end-of-life decision-making in ICUs | Systematic Review | ICU Patients, Healthcare | 15 Study | General ICU | The identification of ethical positions, with expert agreement, underscores the importance of effective communication, clear protocols, early integration of palliative care, ethics consultations, and ongoing education while acknowledging variability in decision-making practices. |
| 56. | Visser, Deliens and Houttekier[85] | Belgium | Study physician-related barriers to communication and family-centered decision-making in ICU end-of-life care. | Systematic Review | ICU Patient, Physicians | 36 Study | General ICU, MICU, SICU | Barriers related to physicians include a lack of communication training, attitudes that affect care, inadequate interdisciplinary communication, unrealistic expectations about prognosis, insufficient knowledge of ethical issues, a focus on treatment futility, and a need for improved guidelines. |
| 57. | Wilson et al.[86] | USA | Assess variability in do-not-intubate (DNI) orders for patients with acute respiratory failure requiring non-invasive ventilation." | Systematic Review And Meta-Analysis | Adult Patients (ICU patients) | 26 Study | General ICU | mortality rates, non-invasive ventilation efficacy, quality of life, patient satisfaction, and duration of ICU stay. |

**Notes:** intensive Care Unit (ICU); Length of Stay (LOS); Palliative Care (PC); Do Not Resuscitate (DNR); Palliative Care Triggers (PCT); Acute Physiology and Chronic Health Evaluation (APACHE); Sequential Organ Failure Assessment (SOFA); Focused Bedside Discussions (FBD); Edmonton Symptom Assessment Scale (ESAS); Memorial Delirium Assessment Scale (MDAS); Medical Intensive Care Unit (MICU); Retrospective Cohort Study (RCS); Randomized Controlled Trial (RCT); Focus Group Discussion (FGD); End-of-life Care Service (Hospice). *Population (The population used in research or literature reviews is ICU patients, families of ICU patients, and ICU clinicians)

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Figure 2 illustrates that the majority of studies originated from the United States, with 18 studies making it the most researched country. Lebanon and Italy each contributed a single study. The research predominantly employs retrospective designs. Specifically, four studies employed a review design, one used a national survey, seven were retrospective, one involved a quality-improvement program, one was an RCT, one utilised mixed methods, three were prospective, one was longitudinal, and one used a consensus report.

Table 2. This table summarizes five key themes in ICU palliative care—communication and consultation, end-of-life decision-making, symptom management and comfort, psychosocial wellbeing, and ethics and clinician roles—along with their associated categories and outcomes.

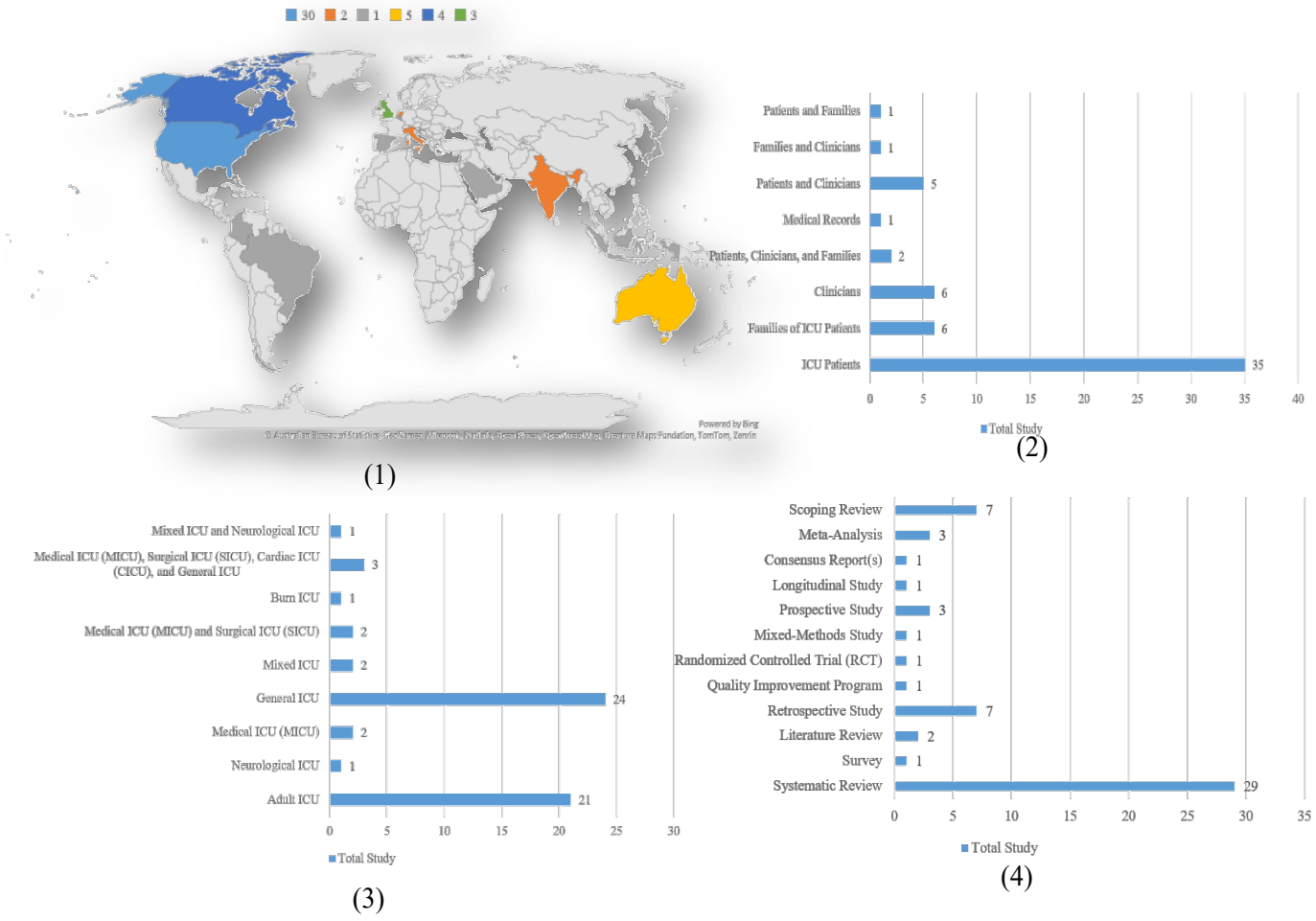


**Figure 3.** Study Distribution Based on (1) Country, (2) Population, (3) Study Design, and (4) ICU Type

**Table 2.** Initial Thema, Category and Outcome Palliative Care in ICU

| Thema | Category | Outcomes |
|---|---|---|
| Communication and Palliative Care Consultation | Communication among clinicians, patients, and families, Palliative care consultation | Clear information delivery, Improved family satisfaction, Better understanding of prognosis, Timely palliative care involvement |
| End-of-Life Care Decisions | Decision-making processes, Goals of care discussions, Withholding or withdrawing treatment | Family involvement in decisions, Clarity on patient wishes, Reduced conflict in decision-making, Ethical and legal clarity |
| Symptom Management and Comfort | Pain and symptom control, Psychological comfort | Effective pain management- Reduction of dyspnea anxiety, Comfort-focused care at end-of-life |
| Psychosocial Wellbeing of Patients and Families | Emotional support, Spiritual care- Family presence and involvement | Reduced family distress, Spiritual peace- Meaningful family presence during end-of-life |
| Ethics and the Role of Clinicians in Palliative Care | Ethical responsibility, Clinician role and support, Interdisciplinary collaboration | Ethical confidence among clinicians, Team-based approach, Support for staff in moral distress |

## DISCUSSION

### PC Outcomes in ICU

PC outcomes in the ICU are a crucial indicator in assessing the effectiveness of interventions provided to critically ill patients.[87,88,89] These outcomes reflect various aspects, such as improving the patient's quality of life, reducing bothersome symptoms, family satisfaction with treatment decisions, and the efficiency of interactions between healthcare providers and the patient's family.[90,91,92]

The outcome of PC in the ICU varies widely, depending on the approach used, the patient's health status and the family's participation in the decision-making process.[93,94,95] Several studies have shown that the implementation of PC can reduce the length of treatment in the ICU, lower the rate of unnecessary invasive intervention use, and improve patient comfort later in life. Additionally, the outcome of PC in the ICU serves as a tool to assess the quality of service provided. The use of standardised outcome indicators can help medical personnel evaluate the effectiveness of treatment, identify areas for improvement, and develop more effective strategies for dealing with critical patients who require a palliative approach.

Spiritual support, although often considered a qualitative and subjective domain, can be assessed using measurable indicators in the ICU setting. Standardised tools may be employed to evaluate patients' perceptions of meaning, peace, and faith.[96,97] Additionally, practical indicators can include the frequency of chaplain or spiritual counsellor visits, documentation of spiritual goals in care plans, and family-reported satisfaction with the spiritual aspects of care. Incorporating such quantifiable measures can help ensure that spiritual support is not only recognized as a vital component of palliative care but is also systematically monitored and improved.

### Outcome as an Aspect of Assessment of PC Quality in ICU

Outcomes in PC in the ICU not only serve as the final result of an intervention but also as an overview of the quality of care provided.[98,99] A good outcome reflects the success of the medical team in managing the patient's symptoms, providing emotional support to the family, and ensuring that the patient receives treatment that aligns with their values and preferences.

Outcome assessment is one of the main approaches in evaluating the quality of PC in the ICU.[100,101] By using measurable parameters, such as controlled pain levels, family satisfaction with the care provided, and adherence to end-of-life treatment decisions, medical personnel can identify both successes and challenges in implementing palliative care (PC). Therefore, the outcome is not only the result achieved but also a measuring tool for enhancing the quality of patient care in the ICU.

### Limitations

This scoping review is limited by the predominance of studies from high-income countries, particularly the United States, which may restrict the transferability of findings to other healthcare systems. Additionally, due to the inclusion of studies with heterogeneous designs and populations, synthesis and generalization should be interpreted cautiously. Lastly, the lack of primary data collection limits the ability to validate the applicability of the identified indicators in real-world ICU practice.

## CONCLUSIONS

This scoping review examines how to map the outcomes of PC in the ICU for critically ill patients, particularly in adult patients. These findings highlight various outcomes that will later be coded and grouped into major themes, allowing for a comprehensive description of the forms of PC outcomes in the ICU. Future studies should develop and validate a set of ICU-specific palliative care outcome indicators using consensus methods, such as the Delphi technique, and test their feasibility in diverse ICU settings. By identifying thematic categories of PC outcomes, this protocol contributes to a preliminary framework for establishing standardised quality metrics in ICUs, addressing the current lack of unified indicators outlined in the introduction.

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## CONFLICT OF INTEREST

The authors report that they have no conflicts of interest for this study.

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