



MALAHAYATI INTERNATIONAL JOURNAL
OF NURSING AND HEALTH SCIENCE
ISSN 2620-9152 (Print)
ISSN 2621-4083 (Online)
DOI: 10.33024



ARTICLE INFORMATION

Received: August, 8, 2026

Revised: September, 27, 2026

Available online: September, 28, 2026

at : <https://e-jurnal.iphorr.com/index.php/minh>

Determinants of palliative care implementation in the end-of-life phase: A systematic literature review

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Abstract

Background: End-of-life palliative care depends on interacting determinants that have not been examined within a single theoretical framework.

Purpose: To identify and synthesize the determinants of end-of-life palliative care implementation and to interpret them using Social Cognitive Theory.

Method: This systematic literature review (PRISMA 2020; PEO framework) searched PubMed, Scopus, Web of Science, CINAHL, and Google Scholar, supplemented by Cochrane CENTRAL and PROSPERO, on 12 July 2026 for English-language original research published from 2020. Study quality was appraised with JBI, CASP, or MMAT tools, and findings were synthesized narratively (SWiM).

Results: Of 420 records, 17 studies (16 independent samples) were included. Knowledge was suboptimal (64.5%–75% correct). Core competence was the strongest predictor of practice in one multicenter study ($\beta = 0.656$), in-service training was associated with better practice ($\beta = 0.26$, $p = .006$), and 73%–82% of professionals in four studies lacked formal training. In one Dutch study, 44% of patients and 24% of families had not discussed stopping curative treatment. Confidence in the findings was low to moderate.

Conclusion: Individual, educational, and communication determinants appear to interact within organizational and family contexts, but the evidence is small and largely cross-sectional; longitudinal and interventional studies are needed.

Keywords: Determinants; End-of-Life Care; Health Personnel; Palliative Care; Social Cognitive Theory.

INTRODUCTION

Palliative care is an essential approach in modern health systems that aims to improve the quality of life of patients with life-threatening illnesses and their families (Agustini et al., 2023). It covers progressive chronic diseases such as heart failure, chronic obstructive pulmonary disease, chronic kidney failure, stroke, and geriatric syndromes (Barker et al., 2021), and the global need continues to rise as life expectancy and the prevalence of non-communicable diseases increase (Israfil et al., 2025). In the end-of-life phase, physical function declines markedly and the focus of care shifts from cure to comfort through symptom control and psychosocial support (Sharma et al., 2023). Optimal palliative care has been reported

to be associated with better quality of life, a lower symptom burden, and less unnecessary use of health services (Pask et al., 2025).

Evidence on what shapes the implementation of end-of-life palliative care is dispersed across single-country surveys, qualitative studies, and policy evaluations, and each study typically examines one determinant group at a time, such as knowledge, training, or communication. A conventional thematic review would list these determinants side by side without showing how personal capacities, learning opportunities, and the organizational environment relate to one another. Social Cognitive Theory (Bandura, 2001) offers such a structure. It holds that

behavior, here the practice of palliative care, results from reciprocal interaction between personal factors (knowledge, attitudes, competencies, self-efficacy), environmental factors (training, communication, organizational support), and behavior itself. By this principle of *reciprocal determinism*, improving the competence of health workers alone may not be sufficient without a supportive organizational environment (Bandura, 2001; Bergenholtz et al., 2025). The theory is therefore used here as a synthesis framework and not only as background: each determinant is coded as a personal, behavioral, or environmental construct, and the included studies are examined for the directions of influence the theory proposes. Because most available studies are cross-sectional, the synthesis can show which relationships have been examined and where evidence is lacking, but it cannot confirm reciprocal causation.

A preliminary review of the literature suggested five groups of determinants: individual factors of health workers, training and education, communication and information, organizational and policy support, and family involvement. This review concentrates on the first three, because most included studies addressed them, because they operate at the level of the health worker, where the interaction between person and behavior is most directly observable, and because they are potentially modifiable within a single facility. Organizational and policy support and family involvement are treated as contextual determinants and synthesized more briefly. This scope is applied consistently across the review question, eligibility criteria, search terms, data extraction, and synthesis, although the search strategy was not designed to be exhaustive for the contextual domains.

This review differs from the authors' earlier work, which developed a transcultural palliative end-of-life care model from primary cross-sectional data on 180 patients in a single hospital (Agustini et al., 2023). The present review instead synthesizes international evidence published since 2020, focuses on determinants at the health-worker level, and interprets them within a single theoretical framework, thereby providing an independent evidence base against which context-specific models can be compared.

The review question was: among healthcare professionals (and, secondarily, patients and families) in hospital, palliative, and community-based end-of-

life care settings, which individual, training-related, and communication-related factors, together with contextual organizational and family factors, are associated with the implementation of end-of-life palliative care, and how do these factors relate to one another when interpreted through Social Cognitive Theory? Accordingly, this systematic literature review aims to identify and synthesize these determinants and to interpret them within Social Cognitive Theory.

RESEARCH METHOD

Study Design

This systematic literature review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement, including the PRISMA 2020 flow diagram (Page et al., 2021). The review question and search strategy were structured using the PEO framework (Population, Exposure, and Outcome). PEO was selected because the review focused on determinants associated with the implementation of palliative and end-of-life care rather than the effectiveness of a specific intervention and comparator.

The review included quantitative, qualitative, and mixed-methods studies. Because the included studies differed substantially in their designs, populations, measures, determinant constructs, and outcome measures, the findings were synthesized narratively and thematically rather than statistically pooled. The synthesis was reported with reference to the Synthesis Without Meta-analysis (SWiM) reporting guideline (Campbell et al., 2020).

Review Framework

The review question was structured according to the PEO framework. Population (P): The primary population comprised healthcare professionals involved in delivering palliative or end-of-life care, including nurses, physicians, pharmacists, nutritionists, clinical psychologists, and multidisciplinary healthcare teams working in hospitals, palliative care services, or community-based clinical settings. Patients receiving end-of-life care and their families were considered a secondary population when studies reported their experiences or evaluations of how palliative or end-of-life care was implemented.

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Exposure (E): The exposures comprised individual, educational, organizational, and contextual determinants of palliative and end-of-life care implementation. Individual determinants included knowledge, competence, attitudes, self-efficacy, and cultural competence. Educational determinants included palliative care training and education. Communication-related determinants included palliative and end-of-life communication. Contextual determinants included organizational and policy support, multidisciplinary team collaboration, and family involvement.

Outcome (O): The primary outcomes were implementation-related outcomes, including palliative care practice or practice ability, quality of service delivery, access to and continuity of services, service integration, compliance with service standards, and communication practice. Secondary outcomes included quality of life, quality of dying and death (QODD), and care experience. Patient- and family-level outcomes were extracted separately and were not treated as primary implementation outcomes.

For this review, implementation of palliative and end-of-life care was operationally defined as the delivery of such care in clinical practice, reflected by practice or practice ability, quality, continuity and integration of services, adherence to service standards, and communication practice. A determinant was defined as a factor reported by a primary study as statistically associated with an implementation-related outcome or described as a barrier or facilitator to implementation.

Knowledge, attitudes, core competence, self-efficacy, communication skills, and practice ability were treated as distinct constructs and were extracted together with the measurement instrument used. Studies involving patients or families were eligible only when they provided information about the delivery of care, such as communication, continuity, or information provision. A study whose outcome was limited to a patient health outcome was retained only as contextual evidence regarding family involvement.

Literature Search Strategy

A comprehensive literature search was conducted on 12 July 2026 in five main sources: PubMed/MEDLINE, Scopus, Web of Science, CINAHL, and Google Scholar. Google Scholar was treated as an academic search engine rather than a

bibliographic database and was included to identify potentially relevant literature not indexed in the other databases.

The search strategy consisted of four concept blocks addressing population, palliative or end-of-life care, determinants, and implementation-related outcomes. The master search strategy was:

"patient" OR "end-of-life patient" OR "palliative patient" OR "nurse" OR "physician" OR "healthcare professional") AND ("palliative care" OR "end-of-life care") AND ("knowledge" OR "competence" OR "training" OR "attitude" OR "communication" OR "cultural competence") AND ("implementation" OR "quality of care" OR "quality of life" OR "care integration").

The search strategy was adapted to the syntax and field-specific requirements of each information source. The search primarily used free-text terms. The master strategy did not include terms such as *terminal care*, *serious illness*, *advanced illness*, *hospice*, *caregiver*, or additional implementation-related terms. The potential implications of this search strategy were considered as a limitation of the review.

Two supplementary sources were also searched: Cochrane CENTRAL and PROSPERO. Cochrane CENTRAL was searched as a bibliographic database of controlled trials, whereas PROSPERO was searched as a registry of systematic review protocols to identify related reviews rather than as a source of primary studies. Records identified through these supplementary sources were reported separately in the PRISMA flow diagram, exported to the same reference-management system, de-duplicated together with records from the main sources, and subsequently screened using the same eligibility criteria. No citation snowballing or hand-searching of journals was undertaken.

The five main sources yielded 412 records: 98 from PubMed/MEDLINE, 137 from Scopus, 76 from Web of Science, 51 from CINAHL, and 50 from Google Scholar. The supplementary searches yielded eight additional records, comprising five records from Cochrane CENTRAL and three from PROSPERO, resulting in a total of 420 records identified.

Eligibility Criteria

Studies were eligible when they met all of the following criteria: 1) original research using quantitative, qualitative, or mixed-methods designs,

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including action research and realist evaluation; 2) addressing palliative or end-of-life care delivered in hospitals, palliative care services, or community-based clinical practice; 3) involving healthcare professionals who delivered such care, or patients and families when their experiences or evaluations addressed determinants of care implementation; 4) published between 1 January 2020 and 12 July 2026; 5) published in English; 6) available as full-text articles; and 7) peer-reviewed publications.

Preprints reporting original research were eligible when no peer-reviewed version could be identified; their preprint status was identified in the evidence tables and considered in the limitations. Studies were excluded if they were reviews, systematic reviews, editorials, commentaries, letters, or other non-research publications; did not address palliative or end-of-life care; did not involve healthcare professionals or patients and families receiving such care; did not have accessible full text; or, for cross-sectional studies, did not analyze determinants by examining an association between at least one determinant and an implementation-related outcome.

Study Selection

Study selection followed the PRISMA 2020 process. A total of 420 records were identified from the five main and two supplementary sources. Before title and abstract screening, 120 records were removed, including 87 duplicates and 33 records removed for other reasons, specifically unavailable full text or a non-English title and abstract. No records were identified as ineligible through automation tools.

The remaining 300 records underwent title and abstract screening, of which 225 were excluded. Seventy-five reports were subsequently sought for retrieval. Ten reports could not be obtained, leaving 65 reports for full-text eligibility assessment.

Of these 65 reports, 48 were excluded: 25 were not primary research studies, 12 did not address palliative or end-of-life care, six did not focus on healthcare professionals or end-of-life patients, three had full texts unavailable for assessment, and two used inappropriate study designs. Consequently, 17 studies met the eligibility criteria and were included in the final synthesis.

Two reviewers independently performed screening at both stages. Disagreements were resolved through discussion between the reviewers.

Data Extraction

Data were extracted using a standardized data-extraction form. The extracted information included authors, publication year, country, study setting, study design, population and sample size, variables, measurement instruments, analytical methods, and main findings.

Where reported by the primary studies, effect estimates and their 95% confidence intervals were also extracted. Additional extracted information included the determinant domain, the relevant Social Cognitive Theory (SCT) construct, outcome type, whether the outcome represented implementation or patient/family-level outcomes, and the authors' conclusions.

Data extraction was performed independently by two reviewers. Any discrepancies between reviewers were resolved through discussion.

Quality Appraisal

The methodological quality of the included studies was assessed using a design-appropriate critical appraisal tool. The JBI Checklist for Analytical Cross-Sectional Studies was used for cross-sectional studies, the JBI Checklist for Qualitative Research was used for qualitative and action research studies, the CASP Qualitative Checklist was used for the realist evaluation, and the Mixed Methods Appraisal Tool (MMAT) was used for mixed-methods studies.

Two reviewers independently assessed the methodological quality of the included studies, with disagreements resolved through discussion. No study was excluded solely on the basis of methodological quality. Instead, appraisal findings were used to qualify the level of confidence with which individual findings were described and to inform the overall confidence ratings presented in the synthesis.

Data Synthesis

Because the included studies varied in design, population, determinant constructs, measurement instruments, and statistical models, quantitative findings were not statistically pooled. The evidence was synthesized narratively and thematically in accordance with the SWiM reporting guideline (Campbell et al., 2020).

Each article was reviewed in full and coded according to the determinants examined. The identified determinants were deductively mapped onto

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three Social Cognitive Theory (SCT) domains: personal, behavioral, and environmental factors. Personal factors included knowledge, attitudes, competencies, self-efficacy, and coping; behavioral factors included clinical practice, practice ability, and communication behaviors; while environmental factors included training and education, organizational and policy support, communication structures, multidisciplinary collaboration, and family involvement. Studies could contribute to more than one SCT domain where conceptually appropriate.

Studies addressing more than one construct were coded under each relevant construct. The evidence was subsequently synthesized according to determinant groups, with attention to similarities, differences, and patterns across studies. Studies with overlapping samples were treated as representing a single cohort when assessing the consistency of findings.

The included studies were compared using a structured evidence matrix. When findings were inconsistent, the studies were examined according to whether they assessed comparable constructs using

similar instruments and whether differences could be related to study design or methodological quality. Conflicting findings were reported rather than statistically combined when pooling was inappropriate.

Effect estimates, including β coefficients, correlation coefficients, adjusted coefficients, and R^2 values, were interpreted within the context of their respective studies and were not directly pooled or quantitatively compared because they were derived from different statistical models, populations, and measurement instruments.

Confidence in each synthesized finding was assessed informally as low, moderate, or high based on the number of independent samples, consistency of findings, study design, methodological quality, and directness to the review question. Formal GRADE or GRADE-CERQual assessments were not undertaken.

Finally, implications derived directly from the evidence were distinguished from recommendations proposed by the authors of the included studies.

RESEARCH RESULTS

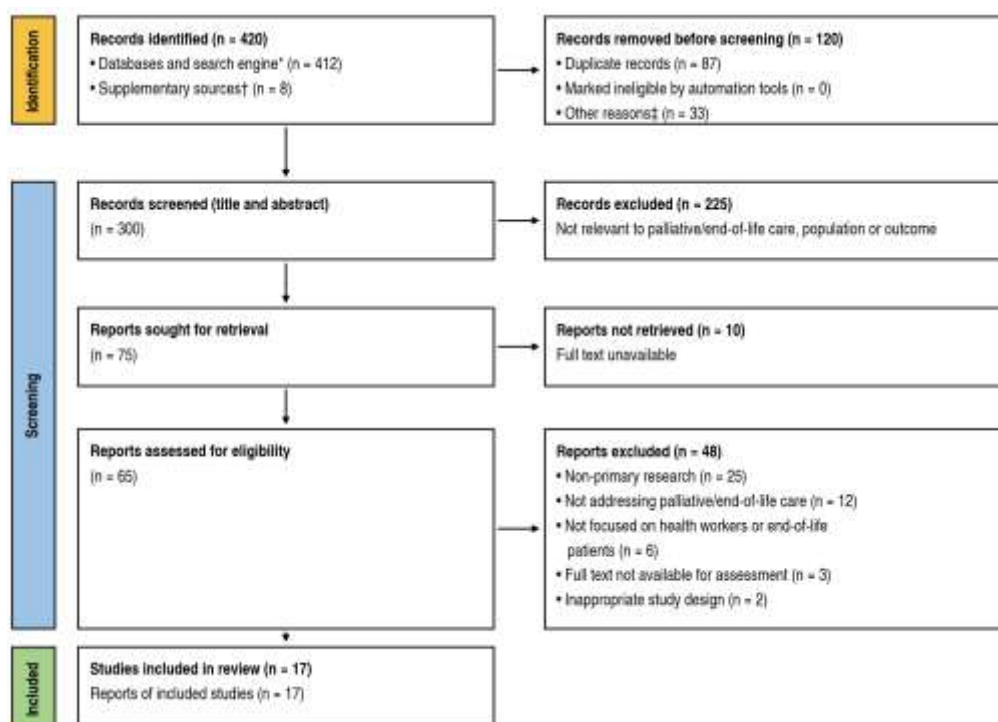


Figure 1. PRISMA 2020 Flow Diagram of Study Selection

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Table 1. Characteristics of Included Studies

(Author ,Year) Country	Design and Sample	Determinant/ Key Factor	SCT Construct	Outcome / Implementation Aspect	Main Findings	Quality Appraisal
(Nie et al., 2025) China	Multicenter cross-sectional; 1,198 oncology nurses from 26 tertiary hospitals	Core competence, pain assessment, demographic/professional factors	Personal; Behavioral	Palliative care practice	Core competence was the strongest predictor of practice ($\beta=.656$; $r=.77$). Communication was the lowest PCPS dimension (11.58/15). Female gender, higher education, and interest in palliative care were associated with better practice.	JBI Analytical Cross-Sectional: 6/8 (High)
(Septianata et al., 2025) Indonesia	Mixed-methods action research; 30 nurses in one Jakarta hospital	ACP knowledge, training, communication, SOP, organizational support	Environmental	ACP-based discharge planning implementation	73.3% had no formal training. Lack of SOP/ACP forms, weak coordination, taboo culture, and family dominance were reported as barriers. Technical guidelines were considered necessary.	MMAT: 2/5 (Low)
(Agustini et al. 2025) Indonesia	Cross-sectional explanatory; 180 chronic patients at Bali Mandara Hospital	Patient, nurse, service, family, and technology factors	Personal; Environmental	Quality of life and quality of dying and death	The model explained 60.1% of variance. Service ($\beta=.343$), family ($\beta=.285$), and nurse factors ($\beta=.242$) were associated with outcomes. Patient knowledge was low in 58.9%.	JBI Analytical Cross-Sectional: 5/8 (Moderate); contextual evidence
(Kodama et al., 2024) Japan	Cross-sectional; 307 family physicians	Training, learning methods, clinical experience	Environmental	Palliative care practice	Training was associated with better practice (adjusted coefficient=.40; $p=.004$). Reflection and independent learning were also associated with practice. Training duration ≥ 7 days was associated with higher practice scores ($p<.001$).	JBI Analytical Cross-Sectional: 7/8 (High)
(Eng et al., 2022) Indonesia	Cross-sectional online survey; 368 respondents from 22 provinces	Profession, preferences for end-of-life communication, willingness to discuss diagnosis/prognosis	Environmental	End-of-life communication preference	93% wanted to know their diagnosis and 76% wanted to know their prognosis. Health workers were more willing to discuss diagnosis than other respondents (94% vs. 75%; $p<.001$).	JBI Analytical Cross-Sectional: 3/8 (Low); preference rather than observed practice

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(Author ,Year) Country	Design and Sample	Determinant/ Key Factor	SCT Construct	Outcome / Implementation Aspect	Main Findings	Quality Appraisal
(Besselaar et al., 2023) Netherlands	Convergent parallel mixed methods; 56 patients and 49 family members	Communication, psychosocial support, eHealth, continuity of care	Environmental	Patient/family care experience	44% of patients and 24% of families had not discussed stopping curative treatment. Psychosocial support was considered insufficient by 35% of patients and 46% of families. Remote care was considered safe by 80–85%.	MMAT: 3/5 (Moderate); preprint/contextual evidence
(Arantzamendi et al., 2024) Spain/Portugal	Grounded theory qualitative study; 21 palliative professionals	Individual, team, organizational, and external factors	Personal; Environmental	Coping competence and professional practice	Team support and self-reflection were important in developing coping competence. Lack of institutional recognition was identified as a risk for staff retention.	JBİ Qualitative: 8/10 (High)
(Lazarus et al., 2025) Oman	Cross-sectional; 1,469 nurses from 9 tertiary hospitals	Palliative care knowledge and attitudes; education/training	Personal	Knowledge and attitude toward palliative care	Knowledge was suboptimal in 64.5%. Attitudes were generally positive. More than 75% had not received palliative education during nursing school and 81% had not received continuing education.	JBİ Analytical Cross- Sectional: 6/8 (High)
(Khessairi et al., 2024) Tunisia	Cross-sectional KAP study; 86 health workers in one hospital	Knowledge, proficiency, training, facilities, trainer availability	Personal; Environmental	End-of-life care proficiency	75.6% were not proficient. Lack of training was reported by 86%, lack of facilities by 79%, and lack of trainers by 68.6%.	JBİ Analytical Cross- Sectional: 3/8 (Low)
(Martins et al., 2024) Portugal	Cross-sectional observational; 380 health workers	Knowledge, attitude, readiness, spirituality, self-efficacy, training	Personal; Environmental	Knowledge, attitude, and preparedness	Knowledge was very low (2.52/5). Training was associated with higher knowledge ($p<.001$) and better attitudes ($p=.002$). Only 21.58% had received palliative care training.	JBİ Analytical Cross- Sectional: 4/8 (Moderate)
(Berhanu et al., 2021) Ethiopia	Cross-sectional mixed methods; 236 nurses	Intercultural communication, cultural sensitivity, cultural motivation	Personal	Transcultural self- efficacy	Transcultural self-efficacy was moderate (2.89/5) and associated with communication ($\beta=1.163$), sensitivity ($\beta=2.075$), motivation ($\beta=.635$), and employment factors ($\beta=2.096$).	MMAT: 2/5 (Low); indirect, not palliative- specific

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(Author ,Year) Country	Design and Sample	Determinant/ Key Factor	SCT Construct	Outcome / Implementation Aspect	Main Findings	Quality Appraisal
(Hansen et al., 2020) Norway	Qualitative free-text study; 104 family members from 7 hospitals	Staff support, continuity, information, practical support	Environmental	Family-experienced quality of end-of-life care	45% of comments were negative. Families reported inadequate information, poor continuity, and insufficient symptom management. Experiences were more positive in palliative units.	JB1 Qualitative: 6/10 (Moderate)
(Bergenholtz et al., 2025) Denmark	Qualitative research; 27–64 participants across four phases	Organizational support, interdisciplinary collaboration, paraclinical involvement	Environmental	General palliative care implementation	Management support was a key implementation driver. Interdisciplinary collaboration was weak, while palliative resource officers were important but vulnerable organizational resources.	JB1 Qualitative: 10/10 (High)
(Chamorro & Miangolarra Page, 2025) Spain	Cross-sectional observational; 42 palliative patients	Physical activity, caregiver involvement, functional dependence, disease etiology	Environmental	Health-related quality of life	Physical activity predicted HRQoL ($\beta=-17.96$; $p=.030$). Active patients had higher FACIT-Sp scores (103.5 vs. 83.7). Caregiver involvement was associated with higher social well-being.	JB1 Analytical Cross-Sectional: 6/8 (High); contextual patient-level evidence
(Jia et al., 2024) China	Multicenter cross-sectional; same cohort as Nie et al.; 1,198 oncology nurses	Core competence, pain assessment	Personal; Behavioral	Palliative care practice	Pain assessment partially mediated the relationship between core competence and practice (indirect effect=.125; 95% CI .090–.168). Core competence $\rightarrow$ practice $\beta=.709$; core competence $\rightarrow$ pain assessment $\beta=.498$; pain assessment $\rightarrow$ practice $\beta=.209$.	JB1 Analytical Cross-Sectional: 6/8 (High); same cohort as Study 1
(Hasni et al., 2025) Oman	Cross-sectional; 189 oncology nurses	Knowledge, attitude, formal education, in-service training	Personal; Environmental	Palliative care practice	In-service training ($\beta=.26$; $p=.006$) and formal education ($\beta=.23$; $p=.016$) predicted practice ($R^2=.52$). Knowledge was not significantly correlated with practice ($r=-.08$; $p=.248$), whereas attitudes were significant ($r=.18$; $p=.013$).	JB1 Analytical Cross-Sectional: 7/8 (High)
(Barker et al., 2021)	Realist evaluation; 98 qualitative;	Policy, funding, service integration, training,	Environmental	System-level implementation	Variation in funding, fragmented data systems, limited social-care integration, and inadequate	CASP Qualitative: 8/10 (High); system-

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(Author ,Year) Country	Design and Sample	Determinant/ Key Factor	SCT Construct	Outcome / Implementation Aspect	Main Findings	Quality Appraisal
UK	stakeholders across 3 London areas	communication, data systems		and end-of-life care experience	communication/ACP training were identified as implementation barriers.	level contextual evidence

Note. SCT = Social Cognitive Theory; ACP = advance care planning; PCPS = Palliative Care Practice Scale; EPCS = End-of-Life Professional Caregiver Survey; HRQoL = health-related quality of life; QOL = quality of life; QODD = quality of dying and death; MMAT = Mixed Methods Appraisal Tool; JBI = Joanna Briggs Institute; CASP = Critical Appraisal Skills Programme. Quality ratings are based on the appraisal information reported in the reviewed evidence table. Studies may contribute to more than one SCT construct. Studies 1 and 15 represent the same underlying cohort and therefore should not be interpreted as two independent samples. Studies 3, 5, 6, 11, 12, 14, and 17 provide contextual or indirect evidence regarding implementation rather than direct evidence of healthcare-professional implementation outcomes.

Table 2. Synthesized Findings, Confidence, and Evidence-Derived Implications

Synthesized Finding	Supporting studies (independent samples)	Consistency and design limits	Confidence	Evidence-derived implication
Knowledge of palliative and end-of-life care is suboptimal among healthcare professionals	Lazarus; Martins (2 samples). Contrasting: Khessairi (nurses highly knowledgeable)	Same direction in two large samples; different instruments; cross-sectional	Low to moderate	Knowledge gaps may be common; local assessment is warranted
Most professionals had not received formal palliative care training or education (73%–82%)	Septianata; Martins; Lazarus; Al Hasni (4 samples)	Consistent; definitions of training differ; self-reported	Moderate	The training gap appears large in the settings studied
Training or education is associated with better practice, knowledge, or attitudes	Al Hasni; Kodama; Martins (3 samples)	Same direction; cross-sectional; different professions	Low to moderate	Training is a plausible but unproven lever
Core competence is associated with practice ability	Nie; Jia (1 sample)	Large multicenter sample; one cohort; self-reported	Low	Competence is a candidate target; replication is needed

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Synthesized Finding	Supporting studies (independent samples)	Consistency and design limits	Confidence	Evidence-derived implication
Reflective practice, self-study, and 7 days or more of training are associated with higher practice scores	Kodama (1 sample)	One cross-sectional study of physicians in Japan; not replicated	Low	Method ranking and 7-day duration are hypotheses to test
Communication about end-of-life issues is a gap (lowest competence dimension; discussions on stopping curative treatment not held; insensitive communication)	Nie/Jia; Besselaar; Hansen (3 samples)	Different constructs; one preprint; cancer-specific samples	Low	Communication merits attention; the type of gap differs by construct
Nurses were rarely preferred as initiators of end-of-life discussions in Indonesia	Eng (1 sample)	Stated preference; online survey	Low	The nurse role in these discussions should be clarified locally; practice was not examined
Organizational and policy factors (management support, SOPs, collaboration, funding, data systems) constrain or enable practice	Bergenholtz; Septianata; Barker (3 samples)	Qualitative or descriptive; different systems	Low to moderate	Organizational readiness is a plausible precondition; contextual evidence only
Family involvement or caregiver presence is associated with better patient-level outcomes	Agustini; Chamorro (2 samples)	Single-site patient studies; patient outcomes	Low	Contextual evidence only

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DISCUSSION

Study Characteristics

Of the 17 included studies, 10 were quantitative cross-sectional studies, 3 used mixed methods (one of them action research), 2 were qualitative, 1 was qualitative action research, and 1 was a realist evaluation ($10 + 3 + 2 + 1 + 1 = 17$; each study was classified once, Table 3). The quantitative studies had sample sizes of 42 to 1,469 and were conducted in China, Oman, Portugal, Tunisia, Japan, Spain, and Indonesia. The qualitative, action research, and realist evaluation studies (21–104 participants) came from Norway, Spain, Portugal, Denmark, and the United Kingdom, and the mixed-methods studies combined quantitative and qualitative approaches among patients and families in the Netherlands and among health workers in Indonesia and Ethiopia. All studies were published between 2020 and 2026. Nurses were the only professional group in six studies (five

independent samples), physicians in one, mixed professional groups in four, patients or families in four, general-public and health-worker respondents in one, and policy stakeholders in one.

Most studies addressed individual factors of health workers, training and education, or communication, whereas a smaller group centered on organizational and policy support (Barker et al., 2021; Bergenholtz et al., 2025; (Septianata et al., 2025) or family involvement (Agustini et al., 2025) ; (Chamorro & Miangolarra Page, 2025). Studies 1 and 15 (Jia et al., 2024 ; Nie et al., 2025) report data from the same survey sample (1,198 oncology nurses from 26 tertiary hospitals in Hubei Province, China), use the same instruments, and share authors; they were therefore treated as one cohort when judging the consistency of findings, which leaves 16 independent samples.

training (Khessairi et al., 2024). The direction of the finding (suboptimal knowledge) is therefore more comparable than its magnitude.

Individual Health Workers

The included studies measure different constructs with different instruments, so this section keeps them apart: knowledge (factual understanding, for example PEACE-Q and BPW scores), attitudes (FATCOD-B), core competence (communication, ethical, and care-delivery abilities on the EPCS), transcultural self-efficacy (CSES), communication skill (the communication dimension of the competence and practice scales), and practice ability (self-reported practice on the PCPS). Perceived proficiency (Khessairi et al., 2024) and preferences about who should start discussions (Eng et al., 2022) are reported separately from measured knowledge, competence, and behavior.

Attitudes toward end-of-life care

Attitudes were generally positive: FATCOD-B scored 3.44 on a 5-point scale among 189 Omani oncology nurses (Hasni et al., 2025) and 99.02 on a 30–150 scale among 1,469 Omani nurses, where more than 5 years of experience was associated with more positive attitudes toward family care and less fear of death (Lazarus et al., 2025). Qualitative research in Norway suggested that a respectful attitude, attentive listening, and clear communication were experienced as fostering trust between families and providers (Hansen et al., 2020). Positive attitudes alongside suboptimal knowledge in the Omani sample support treating the two as separate constructs.

Palliative care knowledge

Palliative care knowledge among health workers remained suboptimal to moderate. Omani nurses' PEACE-Q scores averaged 21.94 of 34 (64.5% correct), with the weakest domains dyspnea and delirium and the strongest psychological distress and communication (Lazarus et al., 2025). A Portuguese study reported a mean of 2.52 on a 1–5 scale, which cannot be compared directly with the Omani percentage because the instruments differ; nurses scored higher than physicians there (Martins et al., 2024), and Tunisian nurses were also reported to be highly knowledgeable although they lacked formal

Palliative core competence

Core palliative competence, which comprises patient- and family-centered communication, cultural values and ethics, and effective care delivery, was the strongest predictor of practice ability among the variables tested in the multicenter Chinese study; this ranking applies to that model only and not to the evidence base as a whole. Among 1,198 oncology nurses, core competence had a regression coefficient of 0.656 and a correlation of 0.77 with practice ability (Nie et al., 2025). A structural equation analysis of the

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same sample found that core competence was associated with practice directly ($\beta = 0.709$) and indirectly through pain assessment ability as a partial mediator (12.8%; indirect effect $ES = 0.125$, 95% CI 0.090–0.168) (Jia et al., 2024); this second analysis is therefore not independent confirmation. Communication was the lowest-scoring practice dimension (PCPS communication score 11.58 of 15) (Nie et al., 2025).

Self-efficacy and emotional coping

Transcultural self-efficacy was moderate among 236 Ethiopian nurses (mean 2.89 of 5) and was associated with intercultural communication ($\beta = 1.163$), cultural sensitivity ($\beta = 2.075$), and cultural motivation ($\beta = 0.635$) (Berhanu et al., 2021). Because this study concerned transcultural self-efficacy in general and not palliative care specifically, it is indirect evidence for the personal construct of self-efficacy; its highest subscale was knowledge of cultural concepts (3.35) and its lowest knowledge of cultural patterns (2.71). A grounded theory study of 21 palliative professionals described a five-stage model of coping-competence development: commencing, recognizing own vulnerability, proactively managing emotions, an integrative approach, and grounding (Arantzamendi et al., 2024). Team support and self-reflection were described as key to progress through each stage, whereas a lack of institutional support could lead professionals to leave the field. The two studies measured different constructs, so their magnitudes cannot be compared.

Training and Education

Formal and in-service training

Training is a potentially modifiable determinant, but the studies below are cross-sectional and show association, not that training causes better practice. Among 189 Omani oncology nurses, in-service training was associated with better palliative practice ($\beta = 0.26$; $p = .006$) and more positive attitudes ($p = .017$), and formal palliative care education was also associated with practice ($\beta = 0.23$; $p = .016$) (Hasni et al., 2025). Among 307 Japanese family physicians, the trained group had a higher PCPS score than the untrained group (median 4.2 vs 3.8; adjusted coefficient = 0.4; $p = .004$) (Kodama et al., 2024). In Portugal, health workers with palliative training had higher knowledge ($p < .001$) and more positive

attitudes ($p = .002$) (Martins et al., 2024). In conceptual terms, training is an exposure, knowledge, attitudes, and competence are personal-factor constructs, and practice is the behavioral outcome. These studies link training to knowledge and attitudes and to practice, but none tested whether knowledge, attitudes, or competence mediate the association between training and practice.

Training method and duration

Among the methods examined in Japan, reflection on practice was most strongly associated with practice scores (adjusted coefficient = 0.24; $p = .004$), followed by self-study through the literature (0.18; $p = .03$); lectures, specialist guidance, practical observation, and case discussions were not significant after adjustment, and training of at least 7 days was associated with higher scores than shorter training ($p < .001$) (Kodama et al., 2024). Health workers in Tunisia rated ethical case discussions as the most useful training activity (Khessairi et al., 2024). The method ranking and seven-day duration come from a single study of community-oriented physicians and have not been replicated, and perceived usefulness is a different construct from statistical association with practice scores. The two findings are therefore reported side by side without ranking, and the seven-day duration should be read as a single-study observation and not as an established threshold.

Training gap

The training gap remained very wide. In Jakarta, 73.3% of nurses, with an average of 17.3 years of experience, had never attended formal palliative care training (Septianata et al., 2025), and in Portugal only 21.58% of professionals had palliative care training, so about 78% had not (Martins et al., 2024). Only 18%–25% of nurses received palliative education during school, and 19%–35% attended continuing or in-service education (Hasni et al., 2025; Lazarus et al., 2025). Across four studies, 73%–82% of professionals had not received formal palliative care training or education, although definitions of training differ. In Tunisia, 75.6% of health workers reported lacking proficiency in end-of-life care, citing a lack of specific training (86%), of means to master the skills (79%), and of trainers (68.6%) (Khessairi et al., 2024).

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Communication and Information

Discussion of diagnosis and prognosis

In an online survey of 368 respondents (255 general public, 113 health workers) across 22 Indonesian provinces, 93% wanted to know their diagnosis and 76% their prognosis; health workers were more likely than the public to want to know the diagnosis (99.1% vs 91%; $p = .004$) and the prognosis (83.2% vs 72.9%; $p = .034$) (Eng et al., 2022). These are stated preferences. By contrast, a Dutch preprint (not yet peer reviewed) of 56 head and neck cancer patients and 49 family members reported that 44% of patients and 24% of families had never discussed when to stop curative treatment, and about one third felt the palliative diagnosis remained unclear after consultation (Besselaar et al., 2023).

Initiator of discussion

Doctors were the party most preferred to initiate end-of-life discussions (64% overall, 71% among health professionals, and 59% among the public), whereas only 1.7% of respondents preferred nurses (Eng et al., 2022). This may indicate a limited perceived role for nurses in palliative communication in Indonesia, but it is a stated preference and does not show what nurses actually do. The public was more likely than health workers to want the discussion to begin at first diagnosis (68% vs 52%; $p = .017$), whereas health workers preferred it to begin when the patient asks.

Psychosocial and information support

Psychosocial support was considered insufficient by 35% of patients and 46% of families, and about 20% of patients said that, had they known the impact of treatment on quality of life, they would not have chosen palliative treatment (Besselaar et al., 2023). Qualitative research in Norway suggested that families felt “left out” between the end of chemotherapy and the terminal phase, had to repeat the history of the illness because of poor continuity of doctors, and were left with traumatic experiences that lasted long after the patient's death because of insensitive communication and broken promises (Hansen et al., 2020).

Communication gaps

Four constructs were reported under communication and should not be conflated: (1) patient and public preferences for information and discussion and (2) professionals' preferences about

who should initiate discussions (Eng et al., 2022), (3) measured communication competence or practice, which had the lowest score among the PCPS dimensions in the Chinese oncology nurse sample (Jia et al., 2024 ; Nie et al., 2025) and (4) reported experiences of communication, including discussions about stopping curative treatment that had not taken place (Besselaar et al., 2023) and insensitive communication (Hansen et al., 2020). Perceived proficiency in end-of-life care (75.6% not proficient in Tunisia; (Khessairi et al., 2024) is a fifth, broader construct and not a measure of communication skill. Because preferences, experiences, and competence were measured in different populations, the studies do not show that preferences went unmet in practice. They do point in a consistent direction, however: communication was among the weakest or most frequently reported gaps wherever it was examined. Whether end-of-life communication training, particularly for nurses, would close these gaps has not been tested in the included studies.

Organizational and Policy Support and Family Involvement

Although they were not the primary focus, organizational and policy factors appeared repeatedly and seemed to shape how individual competence translated into practice. Management support was the key driver of a joint initiative to strengthen general palliative care in Danish hospitals, whereas weak interdisciplinary collaboration, non-involvement of paraclinical departments (such as radiology and biochemistry), and the vulnerability of palliative resource officers within the organization were persistent barriers (Bergenholtz et al., 2025). In Jakarta, the absence of standard operating procedures and advance care planning forms, weak coordination between units, a taboo culture, and family dominance hindered discharge planning, even though nurses' readiness was high (Septianata et al., 2025). A realist evaluation of English national policy found extreme funding variation between areas (£540 to £3,740 per death), non-integrated data systems, devalued social care, and a lack of communication and advance care planning training, which together created a postcode lottery in access to care (Barker et al., 2021). Because the search did not include organizational or family terms specifically, the studies

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identified for these domains are probably incomplete, and the findings are illustrative and not exhaustive.

Family involvement was examined less often. In a model developed among 180 patients with chronic illness in Bali, family factors were a significant component ($\beta = 0.285$), second only to service factors ($\beta = 0.343$) (Agustini et al., 2025), and in a Spanish study of 42 palliative patients, those with caregivers had higher social well-being (17.7 vs 8.3; $p < .001$) (Chamorro & Miangolarra Page, 2025). Both are patient-level results from single-site studies and are used only as contextual evidence. Taken together, the findings suggest that organizational and family factors form the context in which individual and educational determinants operate.

Integration of the Determinants Using Social Cognitive Theory

Social Cognitive Theory allows the primary determinants to be read together rather than as separate lists. Personal factors comprise knowledge, attitudes, core competence, and self-efficacy; environmental factors comprise training and education, communication, and organizational support; and behavior is the practice of palliative and end-of-life care (Table 4 shows how each study was coded). The pathway examined can be summarized as environment $\rightarrow$ person $\rightarrow$ behavior, with feedback from behavior to person and environment. The included studies provide evidence for four links.

Environment to person. Training was associated with knowledge and attitudes (Hasni et al., 2025; (Martins et al., 2024), and transcultural self-efficacy with intercultural communication, cultural sensitivity, and cultural motivation (Berhanu et al., 2021). *Person to behavior.* Core competence was associated with practice, with pain assessment ability as a partial mediator (Jia et al., 2024; Nie et al., 2025), and attitudes correlated more strongly with practice than knowledge did among Omani oncology nurses (Hasni et al., 2025), which indicates that knowledge alone does not explain practice. *Environment to behavior.* Training was associated with practice (Hasni et al., 2025; Kodama et al., 2024), and standard operating procedures, coordination, and collaboration were described as enabling or constraining (Bergenholtz et al., 2025; Septianata et al., 2025). The methods most strongly associated with practice, reflection and self-directed learning, resemble the self-regulatory

processes that the theory describes as sustaining behavior change, and team support and self-reflection sustained the coping competence of palliative professionals (Arantzamendi et al., 2024). *Behavior to person (indirect).* Longer experience was associated with more positive attitudes and higher transcultural self-efficacy (Berhanu et al., 2021; Lazarus et al., 2025).

No included study examined the effect of behavior on the environment, and none tested the full pathway or whether personal factors mediate the association between training and practice, apart from the partial mediation of core competence by pain assessment ability (Jia et al., 2024). The environment also appeared to constrain behavior directly: gaps in end-of-life communication, the low preference for nurses as initiators of these discussions (Eng et al., 2022), the absence of standard operating procedures (Septianata et al., 2025), and weak interdisciplinary collaboration (Bergenholtz et al., 2025) are consistent with environmental conditions limiting practice even when individual competence is present. This illustrates the reciprocal determinism described by (Bandura, 2001) improving individual competence without changing the environment is unlikely to be enough, and environmental change will not succeed if personal capacity is lacking. Because most included studies were cross-sectional and show associations rather than reciprocal relationships, this integration should be read as an interpretive framework and not as a test of the theory.

Heterogeneity, Consistency, and Certainty of the Evidence

The included studies differ in country (twelve countries across Asia, Africa, and Europe), health system, professional group, design, and instrument (Table 4). Nurses were the only professional group in six studies (five independent samples), which limits what can be said about physicians and other team members. Knowledge was measured as percentage correct in one study and as a 1–5 mean in another, practice with the PCPS in only four studies (three independent samples), and communication as preference, experience, competence, or perceived proficiency. The direction and consistency of associations, and not their magnitudes, are therefore the appropriate basis for comparison. Findings from high-resource settings (Norway, Denmark, the

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Netherlands, and the United Kingdom) may not transfer to low-resource hospitals, where the evidence consists of a few single-site or single-country surveys (Tunisia, Ethiopia, and Indonesia).

Several findings appeared to conflict, and each was handled by checking constructs, instruments, design, and quality before both findings were reported. First, knowledge was not significantly associated with practice among Omani oncology nurses ($r = -.08$; $p = .248$), whereas core competence was strongly associated with practice in the Chinese sample (Hasni et al., 2025; Nie et al., 2025). The two are reconcilable because core competence includes communication, ethical, and care-delivery skills beyond factual knowledge, but they come from different countries and instruments, so the relative importance of knowledge and competence for practice remains uncertain. Second, Tunisian health workers rated ethical case discussions as the most useful training activity (Khessairi et al., 2024), whereas reflection and self-study, and not case discussions, were significantly associated with

practice scores in Japan (Kodama et al., 2024); perceived usefulness and statistical association with practice are different constructs. Third, health workers in Indonesia were more willing than the public to discuss end-of-life issues (94% vs 75%), but this concerns preferences and cannot be set against the low communication scores of Chinese nurses, which measure competence. Fourth, suboptimal knowledge alongside positive attitudes in the Omani sample reflects two separate constructs and is not a contradiction.

Confidence in each synthesized finding is summarized in Table 5. It did not exceed moderate for any finding, mainly because 10 of the 17 studies are cross-sectional and single findings often rest on one study or one sample. Only descriptive findings that recurred across several independent samples (the large proportion of professionals without formal training) were rated moderate; associations of training, competence, and communication with practice were rated low to moderate or low.

include paraclinical departments (Bergenholtz et al., 2025; Septianata et al., 2025). Because few nurses receive palliative education during school (Hasni et al., 2025; Lazarus et al., 2025) policymakers may also consider integrating palliative care into pre-service curricula and aligning funding and data systems to reduce inequalities in access (Barker et al., 2021). The effects of all these actions should be evaluated.

Implications for Practice and Policy

Implications are separated into those that follow directly from the evidence and recommendations proposed by the authors. The evidence-derived implications, with their confidence ratings, are listed in Table 5: the training gap appears large, which warrants a local assessment of training and knowledge needs, whereas the links of training, competence, and communication to practice are plausible but unproven. The following author recommendations were not tested in the included studies. Hospitals may consider structured in-service training that emphasizes reflection on practice, self-directed learning, and ethical case discussions (Khessairi et al., 2024; Kodama et al., 2024) prioritizing nurses and physicians who have never received formal training; the seven-day duration should be treated as a hypothesis and not as a standard. Training may also address end-of-life communication, such as discussing diagnosis, prognosis, and stopping curative treatment, together with a clearly defined role for (Besselaar et al., 2023; Eng et al., 2022). Institutions may consider standard operating procedures, advance care planning forms, and structured discharge planning, supported by management and by interdisciplinary teams that

Limitations and Directions for Future Research

Each limitation below affects the certainty or generalizability of the conclusions. First, the evidence base is small (17 studies) and heterogeneous in design, population, setting, and outcome measures, which precluded quantitative synthesis and lowers the certainty of every synthesized finding (Table 5). Second, two studies (Jia et al., 2024; Nie et al., 2025) draw on the same sample of 1,198 oncology nurses, so the apparent consistency of findings on core competence may be overstated; the number of independent samples is 16. Third, the studies come from a limited number of countries and are mostly cross-sectional, so they show associations and not causal or reciprocal relationships, and their applicability to other settings, including low-resource hospitals, is uncertain. Fourth, regression coefficients, correlation coefficients, adjusted coefficients, and R^2

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values from different models are not on a common scale, so their magnitudes cannot be compared across studies. Fifth, restricting the review to English-language original research and excluding review articles may have omitted relevant evidence, and one included study is a preprint that may not have been peer reviewed (Besselaar et al., 2023); it was retained because it reports patient and family experiences of communication that were not available elsewhere, its findings were given low confidence, and its status is flagged in Table 4. Sixth, appraisal results (Table 4) were used to qualify but not to weight the findings, and organizational, policy, and family determinants were synthesized only briefly, with search coverage that was not exhaustive for them. Seventh, the master search string relied on free-text terms and did not include terminal care, serious illness, advanced illness, hospice, caregiver, or additional implementation terms, so relevant studies, particularly on family and organizational determinants, may have been missed. Eighth, no snowballing or hand-searching was performed, so eligible studies not indexed in the searched sources may have been missed, and Google Scholar searches are less reproducible than database searches. Ninth, one included study (Berhanu et al., 2021) concerned nurses' transcultural self-efficacy in general and not palliative care specifically, and it was used only as indirect evidence for the personal construct of self-efficacy. Future research should use longitudinal or interventional designs to test the reciprocal relationships proposed by Social Cognitive Theory, evaluate training programs based on reflective methods, include more studies from low- and middle-income countries, and examine organizational and family determinants in greater depth.

CONCLUSIONS

This systematic literature review of 17 studies (16 independent samples) found that the implementation of palliative care in the end-of-life phase was associated with three main groups of determinants: individual factors of health workers, training and education, and communication and information, with organizational support and family involvement acting as contextual factors. Read through Social Cognitive Theory, the evidence suggests that competence, self-efficacy, and attitudes are related to practice; that training, reflective learning, and team support are

related to these personal factors; and that communication norms and institutional arrangements may enable or constrain practice. Confidence in these findings is low to moderate: most studies are cross-sectional, several findings rest on a single sample, and constructs and instruments differ. Hospitals may therefore consider combining reflective in-service training and end-of-life communication skills development, including a clearer role for nurses, with standard operating procedures, management support, and interdisciplinary collaboration, but these recommendations are the authors' own and have not been tested. Longitudinal and intervention studies are needed to test the reciprocal relationships proposed by the theory.

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DOI: <https://doi.org/10.33024/minh.v9i7.4267>