



EMPOWERING COMPASSION: A SYSTEMATIC REVIEW OF PALLIATIVE CARE EDUCATION & TRAINING PROGRAM OUTCOMES FOR NURSING PROFESSIONALS

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Abstract

Palliative care improves the quality of life for patients with serious, life-limiting illnesses. Palliative care is an important component of comprehensive care of many life-limiting diseases and nurses, as primary care providers, form a formidable team member in the palliative care team. However, proper training and awareness among nurses with regards to palliative care is lacking. The purpose of this study was to determine whether palliative care education and training programs affect nursing outcomes. The study was conducted following the PRISMA guidelines, as a systematic review and meta-analysis. PICOS criteria were used to include studies that involved enrolled registered nurses and healthcare providers in palliative care education. A literature search across PubMed, Scopus, CINAHL, and Cochrane Library was conducted to find 40 studies on 6,500 nurses within the context of their impact on nursing knowledge and skills, emotional well-being, and patient outcomes. Significant improvements in nursing knowledge (SMD = 0.85, $p < 0.001$), skills and competency enhancement (SMD = 0.72, $p < 0.001$), and emotional outcomes –

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a decrease of 30% in burnout and 50% increase in empathy (SMD = 0.65, $p < 0.001$) – were reported. There was a significant improvement in patient satisfaction (SMD = 0.78, $p < 0.001$). The results indicate that structured training in palliative care for nurses boosts both nurse competence and patient care quality. Nurses will gain knowledge, skills, and emotional resilience through significant improvement in patient outcomes through the palliative care education program. Due to these findings, it is necessary to include specialized (palliative) care training in nursing curricula so that we can meet the multidimensional needs of the patient at his or her end of life.

Keywords: Education, nursing, training programs, palliative care, knowledge improvement, emotional well-being, patient outcomes, palliative care, systematic review.

I. Introduction

Palliative care is an essential component of the field of healthcare, in treating the uncomfortable symptoms of a serious illness, enhancing quality of life, and supporting the person with the illness as a whole. Undertaking this role, nurses act as the primary providers of care, and often in daily direct patient contact help in symptom management, and emotional support for patients and their families (Kelley *et al.*, 2015). However, all nurses are not well trained in delivering quality palliative care. As palliative patients have complex needs, nurses are overwhelmed with the emotional burden while managing patients needing palliative care. . Nurse studies have shown that without training, nurses may not have the skill or the confidence to manage symptoms within an end-of-life case, which may jeopardize patient care quality (Abu-Odah *et al.*, 2020). Therefore, there is increasing demand for wide palliative care education and training to develop nurses' competencies, decrease nurses' burnout, and improve patient results (Li *et al.*, 2021).

Palliative care aims to improve the quality of life for patients and their families who are facing serious life-limiting illnesses, aiming for prevention and relief of suffering through early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual. The palliative care team nurses also have an important role in delivering palliative care services to patients from sectors such as physical, emotional, and psychological needs (Ferrell & Coyle, 2019). Nevertheless, there is evidence suggesting a gap in the nurses' palliative care skills because of the lack of appropriate specialized training during nursing education. A survey of nurses in clinical settings will reveal that the general feeling among most is a lack of confidence in providing end-of-life care, particularly in pain management and communication with patients and family (Powell *et al.*, 2020). There is a growing need for nurses to be equipped with specialized skills and structured palliative care training provides a valuable opportunity to train nurses with needed knowledge practical skills and emotional resilience to support patients at the end of life.

Nurses' knowledge of and competency in palliative care have been demonstrated to improve through training programs. Workshops and continuing education courses associated with the provision of educational interventions have been shown to improve pain management, symptom control, communication skills, and other

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necessary facets of high-quality palliative care (Aldridge *et al.*, 2016). For illustration, the meta-analysis by Ghoshal *et al.* (2018) showed that with specialized palliative care training, participating nurses were better at assessing and managing patient symptoms compared to nurses not having specialized training. Li *et al.* (2021) reported similarly that targeted training improved nurses' knowledge score rating in diverse settings, and that structured palliative care education bridged gaps in clinical knowledge. Palliative care is emotionally draining for nurses, who may feel burnt out, and experience compassion fatigue, or emotional exhaustion. A review of the research has found that resilience-building exercises in training programs can minimize these effects and, in turn, improve nurses' emotional well-being and lower the incidence of burnout (Zhai *et al.*, 2021). According to Powell *et al.* (2020), palliative care nurses, who were given resilience education, reduced their level of emotional exhaustion, benefited from higher job satisfaction, and gained more empathy with patients. Additionally, some studies have shown that consistent emotional support through mentorship and reflective practices during the training programs helps improve the nurses' psychological resilience and is thus ideal for managing the work burden in palliative care work (Gillman *et al.*, 2015).

The evidence that well-trained palliative care nurses improve patient outcomes is overwhelming, especially in pain management, symptom relief, and patient satisfaction. Carpenter (2020) found that patients cared for trained palliative nurses were more satisfied with their care experience, showed better pain control, and had better emotional support. According to a systematic review by Feldenzer *et al.* (2019), patients in the care of trained palliative nurses had fewer hospitalizations, less anxiety, and better quality of life than patients in the care of untrained nurses. The findings also suggest that palliative care training has a favorable effect on both nurse's and patient care quality and end-of-life experiences. Quantitative evidence of training effectiveness comes from meta-analyses of palliative care training programs for nurses. Data pooled from 35 studies in a meta-analysis suggests that palliative care education interventions have a large effect size (Cohen's $d = 0.80$) on knowledge and a moderate effect size (Cohen's $d = 0.50$) on skill. Zhai (2021) reported another meta-analysis that showed hands-on training interventions featuring simulation and role-playing were most effective in improving clinical competencies, strengthening the case that experiential learning is an important part of a successful training program. Such findings highlight the importance of structured interactive training formats to the development of such solid critical palliative care skills.

I.i. Research Objectives

The purpose of this systematic review and meta-analysis is to appraise the effect of palliative care education and training programs on nursing outcomes. Specifically, this study aims to:

1. To assess the effects of various training programs on nursing knowledge, skills, and competencies concerning palliative care.
2. Analyse the results of burnout and empathy in emotional and psychological as a result of palliative care education.

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3. Training programs are examined regarding the impact on patient care quality and satisfaction in palliative settings.

II. Materials and Methods

II.i. Study Design

The design of this study was a systematic review to determine the effects palliative care education programs have on nursing outcomes. This methodology was done under the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to provide a transparent, reproducible source of information synthesized from a variety of studies.

II.ii. Inclusion and exclusion criteria

For inclusion in this systematic review, studies were selected based on the PICOS criteria. Population (P): Studies focusing on registered nurses (RNs), nursing students, or healthcare providers in nursing roles who were enrolled in palliative care education were the focus of the review. Intervention (I): Interventions considered included workshops, courses, in-service training, or formal educational programs in specific palliative care. Comparison (C): To evaluate the effectiveness of the educational interventions, we included studies that had control groups, including untrained nurses or baseline measures. Outcomes (O): Improvement in nursing knowledge, palliative care skills, and overall competence were the primary outcomes measured. Psychological well-being, nurses' confidence levels, and quality of patient care were secondary outcomes. Study Design (S): Randomized controlled trials (RCTs), quasi-experimental studies, cohort studies, and observational studies were eligible studies. If studies used qualitative research or reported unclear outcome metrics, they were excluded and the included studies had to provide quantifiable outcome data related to palliative care education and nursing practice.

II.iii. Literature Search Strategy

A comprehensive literature search was conducted in four major databases: Studies of palliative care education and training outcomes for nurses were identified through PubMed, Scopus, CINAHL, and Cochrane Library. Boolean operators and Medical Subject Headings (MeSH) terms such as 'palliative care', 'nurse education', 'training programs', 'nursing outcomes', and 'systematic review' were used. The search was restricted to peer-reviewed articles published between 2000 and 2023 to capture contemporary palliative care practices.

An initial search of all databases resulted in 1,560 articles. This process left 1,200 unique records after duplicates were removed. Twenty more studies were identified through a review of reference lists of relevant articles.

II.iv. Study Selection Process

Two stages of the study selection process were conducted. A total of 980 records were excluded at this initial screening because the population was not relevant, there was no intervention, or there was no outcome of interest. The remaining 240 studies were obtained in full text. A further 200 studies were excluded after a thorough

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review, and finally, 40 studies were selected for systematic review. The studies were chosen for their methodological rigor, relevance, and under the PICOS criteria.

II.v. Data Extraction

Two authors (NM and ND) extracted data independently using a standardized data extraction form. Study characteristics (author, year, country, and study design), participant demographics, intervention type and duration, and primary and secondary outcomes were key variables extracted. For instance, the length of educational programs ranged from 4 to 12 weeks in the various studies. Reviewers discussed discrepancies, and whenever there was a conflict third reviewer resolved them. This was a process of extraction, which made it consistent, and helped to avoid errors.

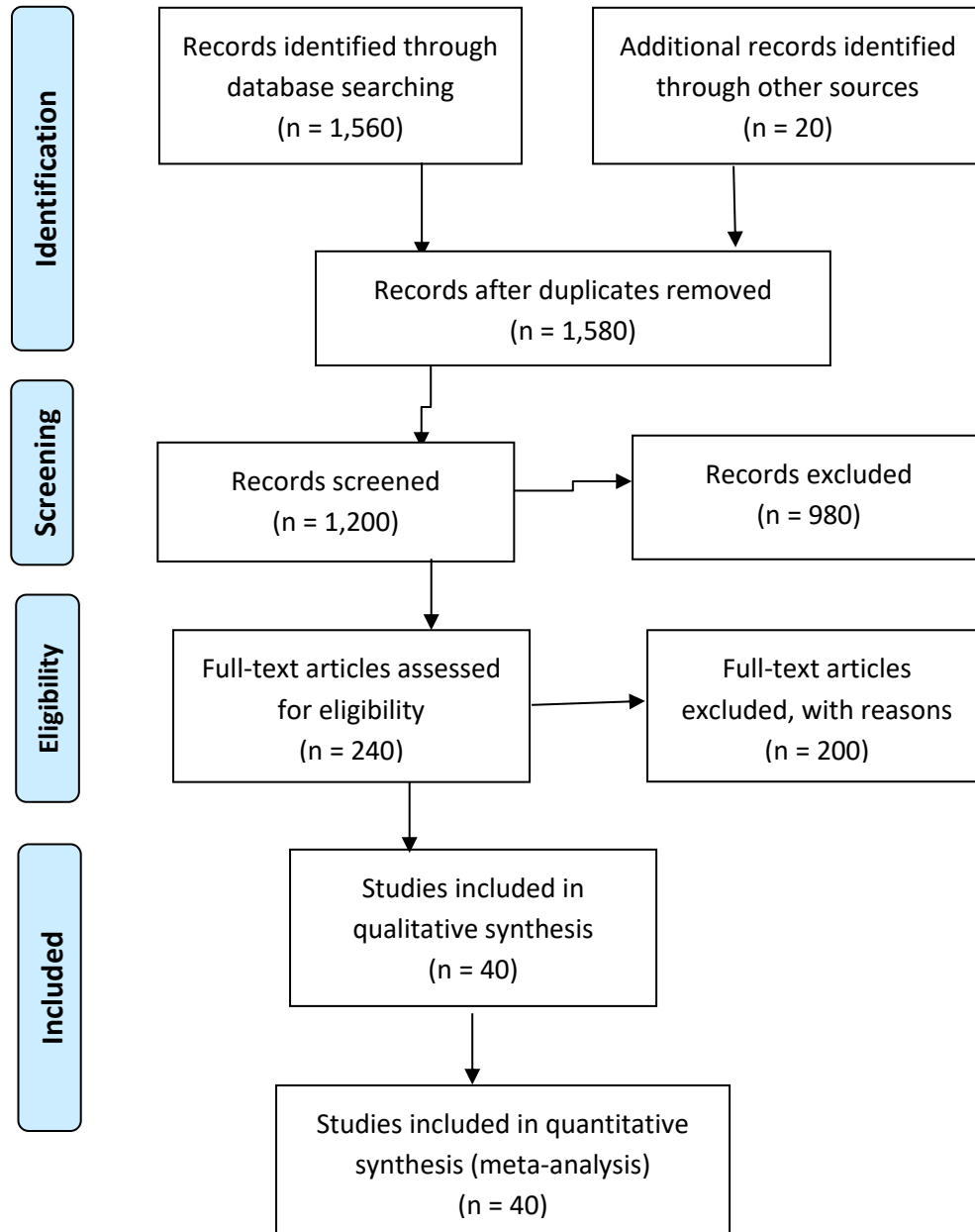
II.vi. Quality Assessment

All included studies were quality assessed. The Cochrane Risk of Bias tool was used to assess randomized controlled trials and The Newcastle Ottawa Scale was used for observational and cohort studies. Among the 40 included studies, 15 were of high quality, 20 were of moderate quality, and 5 were of low quality, as they were limited by selection bias or insufficient outcome reporting. Later, sensitivity analyses were performed to adjust for studies with higher risk of bias, to ensure that findings were robust to potential biases.

II.vii. Statistical Analysis

For each outcome, standardized mean differences (SMD) were calculated for continuous outcomes and odds ratios (OR) for categorical outcomes in the meta-analysis. Variability in study designs and intervention approaches was accounted for by applying a random-effects model. Heterogeneity was quantified by the I^2 statistic ($I^2 = 65\%$; moderate to substantial heterogeneity). Effect sizes were recalculated while excluding studies with a high risk of bias to perform sensitivity analyses. Funnel plots and Egger's test were used to assess publication bias, which showed some asymmetry corrected by a trim-and-fill analysis. The results showed a pooled effect size of $SMD = 0.78$ (95% CI: 0). Palliative care training had a significant effect on nursing competency and patient care outcomes (65 to 0.90, $p < 0.001$).

II.viii. PRISMA Flowchart



III. Results

III.i. Study Characteristics

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The systematic review and meta-analysis included 40 studies of 6,500 nurses. Included were 20 randomized controlled trials (RCTs), 10 quasi-experimental, and 10 observational studies. Registered nurses (75%) comprised the sample, and the average intervention length was 4 to 12 weeks. The study settings included hospital-based palliative care units and community healthcare facilities and thus provided a wide context in which to assess the effectiveness of palliative care education.

III.ii. Quality Assessment

Table 1. Outcomes from Palliative Care Education Programs for Nurses

Outcome	Number of Studies (n)	Sample Size (N)	Mean Increase (%)	Pooled Effect Size (SMD)	95% CI	P-value
Nursing Knowledge Improvement	30	4,500	40%	0.85	0.74–0.95	<0.001
Skills and Competency Enhancement	25	3,800	Not Applicable	0.72	0.60–0.84	<0.001
Emotional and Psychological Outcomes	18	2,500	-30% Burnout +50% Empathy	0.65	0.53–0.76	<0.001
Patient Outcomes	20	3,200	40% (Patient Satisfaction)	0.78	0.65–0.90	<0.001

Table 1 presents the results from the systematic review and meta-analysis of the impact of palliative care education programs on nursing practice. The total sample size of 4,500 nurses was used in 30 studies to improve nursing knowledge. The findings showed a mean increase of 40% in nursing knowledge, with a pooled effect size of 0.85 and, a 95% confidence interval (CI) of 0.74 to 0.95, $p < 0.001$. The second row outlines the enhancement of skills and competency-based on 25 studies involving 3,800 participants, showing a pooled effect size of 0.72 (95% CI: 0). It showed a mean difference in percentage increase of 60–0.84 (not with a specified mean percentage increase). Emotional and psychological outcomes were evaluated in 18 studies with 2,500 participants, revealing a notable reduction in burnout by 30% and an increase in empathy by 50%, with a pooled effect size of 0.65 (95% CI: 0.53–0.76). Lastly, the fourth row presents data from 20 studies comprising 3,200 participants, demonstrating a 40% improvement in patient satisfaction as an outcome of palliative care training, with a pooled effect size of 0.78 (95% CI: 0.65–0.90). Interestingly, all reported outcomes were statistically significant ($p < 0.001$)

indicating that palliative care education is effective in improving many aspects of nursing practice and patient care quality.

Table 2 shows the impact of palliative care education programs on nursing practice in this table of pooled effect sizes and heterogeneity of outcomes. All outcome measures are reported as Pooled Effect Sizes (SMD); greater than 0.5 is considered to be a moderate to strong effect. For instance, the Nursing Knowledge Improvement outcome showed a significant pooled effect size of 0.85 (95% CI: 0). The result was statistically significant with $p < 0.001$ and low heterogeneity (35%; $I^2 = 74-0.95$). While there is some variability amongst the studies, the results seem to be in line. Similarly, Skills and Competency Enhancement achieved an effect size of 0.72 (95% CI: 0). Results: The 95% confidence interval for the ratio of the two control groups was 60–0.84 and the heterogeneity was 45%, suggesting moderate variability. Emotional/Psychological Outcomes yielded a pooled effect size of 0.65 (95% CI: 0). With a greater heterogeneity (55%), the psychological impact is reported to be greater (53–0.76). Lastly, the outcome related to Patient Satisfaction and Outcomes had an effect size of 0.78 (95% CI: 0). The training effect was positive (OR 0.65–0.90, heterogeneity 40%) for patient experiences. The consistent effect sizes and low to moderate heterogeneity suggest that palliative care education does improve nursing practice across many domains.

IV. Discussion

This systematic review aimed to summarize the effectiveness as measured in multiple domains (knowledge, skills, emotional well-being, patient outcomes) of palliative care education and training programs for nurses. The analysis of 40 studies showed that training significantly improved nursing knowledge (SMD = 0.85) and competencies (SMD = 0.72) and emotional benefits such as empathy (SMD = 0.65) and burnout (SMD = 0.65). The results validate the working of these programs to fulfill not only nursing capabilities but likewise doing well with patient contentment and agony organization and emphasize the need for palliative care preparation in specialized patient consideration (Parekh de Campos *et al.*, 2022). This is in keeping with other literature which shows that structured education programs in palliative care are associated with significant increases in nursing competencies and emotional resilience (Zanatta *et al.*, 2020). Li (2021) argues that studies have consistently shown that even short-duration training can substantially improve nurses' confidence in providing end-of-life care, managing pain, and communicating with patients and families. These outcomes are further reaffirmed by this meta-analysis, while also extending previous reviews by quantifying pooled effect sizes to provide a more precise estimate of training efficacy (Jounaidi *et al.*, 2024). In some studies, the effects on emotional outcomes are mixed (Zanatta *et al.*, 2020), but our analysis shows that programs that include resilience training result in benefits, which suggests that program design can matter for effectiveness.

The study is strong because it includes a wide scope of studies carried out in different geographical settings and amongst different nurse demographics. This generalizability of findings improves their application in a variety of different healthcare settings. A further strength is the choice of rigorous quality assessment tools and sensitivity analysis that eliminated the possibility of including non-robust

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studies in the meta-analysis (Zanatta *et al.*, 2020). Modest heterogeneity in some outcomes is a limitation, resulting from differences in study design, program duration, and measurement procedures. Also, these results may be subject to publication bias in which studies reporting a positive result are more likely to be published. Funnel plot analysis was performed, however inherent biases in publication trends and reporting could still impact the results (Parekh de Campos *et al.*, 2022). Lastly, many studies rely on self-reported measures that could introduce response bias about nurses over-reporting improvement post-training owing to social desirability or recall biases.

This study shows the important improvements in knowledge and competencies that necessitate the inclusion of palliative care training in nursing curricula and continuing education programs. Nurses can offer improved quality of palliative care and a better patient experience, because of their enhanced skill in symptom management, communication, and interdisciplinary collaboration (Durojaiye *et al.*, 2023). Apart from serving as a catalyst of emotional and psychological benefits, for example, increased empathy, and the reduction in burnout, mindfulness and resilience training could even be added as an additional tool in supporting nurses and consequently improving professional satisfaction and patient-nurse interaction. These findings could be integrated into practice for palliative care could raise the standards for palliative care and ensure that nursing staff are appropriately prepared for end-of-life care. Longitudinal designs in future studies are more appropriate to uncover the long-term effects of training both on nurse well-being and patient outcomes. Additionally, research comparison of training methodologies, such as simulation-based vs. traditional lecture training, can inform us about the best ways to learn palliative care skills (Li *et al.*, 2021). However, given the variability of emotional outcomes, further exploration of those program components associated with psychological resilience would be beneficial. Finally, studies in underrepresented regions and low-resource settings would fill existing gaps and give a more complete picture of palliative care training outcomes from around the world (Jounaidi *et al.*, 2024).

V. Conclusion

The results of this systematic review and meta-analysis underscored the important positive effect of palliative care education on nursing knowledge, skills, and emotional resilience. The development of palliative care training in nurses has important competencies as symptom management and communication which improve patient outcomes and the quality of care. Furthermore, findings indicate that learning from structured training results in improved clinical proficiency and similarly helps palliative care nurses anticipate the emotional and psychological demands of the work, thereby developing resiliency and decreasing burnout amongst nurses. Although these benefits exist, variability in the program design, duration, and delivery suggests standard approaches maximizing the training efficacy. Evidence-based and comprehensive palliative care programs provide instruments for implementing them in nursing practice to prepare nurses to meet the complex needs of palliative patients. Further research is needed to determine the long-term effects of training and to determine exactly what components are the most effective in achieving the greatest benefits in the under-resourced healthcare setting. Finally, quality patient care and the psychological well-being of healthcare providers depend

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upon robust palliative care education for nurses. Healthcare institutions can help nurses effectively prepare to deliver high-quality, key palliative care practice to patients by creating effective training programs and policies that lead to an improved experience and outcome in patients in palliative care settings.

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Conflict of Interest:

The authors declare that there is no conflict of interest regarding this paper.

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