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Factors influencing self-efficacy of healthcare professionals towards end-of-life care in acute care settings in Palestine: a cross-sectional study

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Abstract

Background Caring for individuals at the end of life is a profound emotional and complex responsibility, especially within acute care settings where healthcare professionals must navigate the delicate balance between administering life-saving treatments and providing end-of-life care. This dual role can create considerable challenges for healthcare providers, many of whom may feel inadequately prepared or lack the confidence to offer the specialized care required in these situations. This study aimed to examine the factors influencing nurses' self-efficacy in delivering EOLC in Palestinian acute care hospitals, focusing on communication and patient management competencies.

Methods A cross-sectional study was conducted among 100 nurses from governmental hospitals in Nablus, Salfit, and Ramallah, selected using convenience sampling. Data were collected through a structured questionnaire that included demographic information and the validated Self-Efficacy in Palliative Care Scale (SEPC-S), covering communication and patient management domains. Descriptive statistics summarized participant characteristics. Inferential analyses—including Pearson correlation, one-way ANOVA, and stepwise multiple regression—were performed to identify significant relationships and predictors of self-efficacy in EOLC. All statistical analyses were conducted using IBM SPSS Statistics for Windows, Version 21.0.

Results Nurses reported moderate self-efficacy in EOLC, with patient management scoring highest (mean = 7.57, SD = 1.49) and communication lowest (mean = 4.84, SD = 2.40). Significant positive correlations were found between self-efficacy and factors such as age ($p = 0.212$), marital status ($p = 0.03$), and education level ($p = 0.06$). Stepwise regression analysis showed that both patient management ($\beta = 0.76$, $p < 0.001$) and communication ($\beta = 0.54$, $p < 0.001$) domains significantly predicted perceived EOLC competence, collectively explaining 85% of the variance ($R^2 = 0.85$, $p < 0.001$).

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Conclusions This study highlights the need for educational and institutional interventions to enhance nurses' self-efficacy in EOLC. Targeted training programs focusing on communication, symptom management, and interdisciplinary teamwork are essential to fill identified gaps. Simulation-based learning and mentorship can help nurses gain the necessary skills. Policymakers and healthcare institutions should integrate comprehensive palliative care training into nursing curricula and practice to ensure high-quality, compassionate EOLC, ultimately improving patient outcomes and care quality.

Keywords End-of-life care, Self-efficacy, Palliative nursing, Communication, Patient management, Acute care, Nurse education

Introduction

Background

Palliative care is a holistic, patient-centered approach aimed at improving the quality of life for individuals with life-limiting illnesses by addressing their physical, emotional, social, and spiritual needs [1]. According to the World Health Organization (2020) [2], it focuses on preventing and alleviating suffering through early identification, comprehensive assessment, and the management of pain and other distressing symptoms, whether physical, psychosocial, or spiritual. Importantly, palliative care is not limited to EOL scenarios but is applicable at any stage of a serious illness and can be provided alongside curative treatments.

This study is necessary given the increasing demand for EOLC, driven by aging populations and the burden of chronic and terminal diseases [3]. In Palestine, limited resources and organizational constraints further complicate care delivery, often leading to inadequate symptom management and communication [4]. By examining the factors that impact HCPs' self-efficacy, this research identifies key areas for intervention to enhance confidence and competence in EOLC delivery.

Delivering EOLC in Palestine involves navigating complex ethical and emotional challenges in addition to resource limitations. While prior studies have examined these barriers in other contexts [5], there is limited data from Palestine. This study's innovative aspect lies in its focus on context-specific challenges and opportunities for improving self-efficacy in EOLC.

This study highlights the importance of identifying heterogeneity in self-efficacy across demographic and professional factors [6]. Recognizing these differences helps tailor training and support programs to better meet the needs of diverse HCPs, ensuring compassionate, patient-centered EOLC.

Despite its proven benefits, there remains a significant gap between the global need for palliative care and its availability. An estimated 56.8 million people worldwide require palliative care annually, including 25.7 million in the final stages of life, yet only about 14% of them actually receive it [7]. The demand for such care is projected to increase, driven by the aging population and the growing burden of both communicable and non-communicable diseases [8]. Studies suggest that early integration of palliative services is associated with reduced hospital admissions and overall healthcare costs [1, 3, 9].

EOLC, as a key component of palliative care, aims to ensure comfort, dignity, and emotional support for patients in their final phase of life while also addressing the needs of their families [10]. However, in acute care settings like hospitals, delivering EOLC presents complex challenges. HCPs are often required to make difficult decisions regarding the shift from life-prolonging treatments to comfort-oriented approaches, a process that can be emotionally taxing for all involved [11, 12].

Nurses play a vital and multifaceted role within the healthcare system, functioning as caregivers, educators, advocates, and collaborative team members. In addition to their clinical responsibilities, they contribute significantly to health promotion, disease prevention, and patient education, empowering individuals to actively participate in managing their health and overall well-being [13].

Among healthcare providers, critical care nurses occupy a pivotal role in EOLC delivery. They spend significant time at the bedside and serve as caregivers, coordinators, and communicators, addressing not only the physical needs of patients but also emotional, spiritual, and social concerns [6]. Their central position enables them to act as key facilitators of quality EOLC; however, several barriers hinder their ability to perform this role effectively.

The literature identifies numerous factors that affect the delivery of EOLC in critical settings, including challenges related to communication between healthcare teams and families, symptom management, organizational support, and the emotional toll on providers [5, 14, 15]. These barriers are often categorized into those associated with patients and families, HCPs, and institutional systems. Communication difficulties, resource limitations, and lack of training or preparedness are frequently cited obstacles that impact the quality of care. Emotional distress experienced by caregivers including feelings of helplessness, sadness, and hopelessness can also impede effective EOLC [16].

Furthermore, individual characteristics of nurses, such as age, gender, educational background, and previous

EOLC training, significantly influence their self-efficacy and effectiveness in providing care during this critical phase [4, 17]. When nurses feel unprepared or unsupported, care delivery may suffer, leading to poor symptom control, delayed decision-making, and increased distress for patients and families [12].

In the Palestinian context, where healthcare systems face resource constraints and ongoing challenges, it becomes even more crucial to understand and address the barriers affecting nurses' self-efficacy in EOLC. Doing so can inform the development of targeted training programs, institutional improvements, and policy-level interventions that strengthen the capacity of HCPs to deliver compassionate, high-quality care to those at the end of life. Accordingly, this study aimed to examine the key factors influencing nurses' self-efficacy in providing end-of-life care in acute care settings, with a particular focus on communication and patient management competencies. Let me know if you'd like to place this aim in another section or rephrase it further.

Aims of the study

The study seeks to achieve the following objectives:

The aim of this study is to examine the factors influencing the delivery of high- quality palliative and EOLC in acute care settings, with a focus on understanding the barriers faced by HCPs, particularly critical care nurses. The study seeks to identify the key challenges in providing patient-centered care during the final stages of life, including issues related to communication, emotional support, symptom management, and the transition from curative to comfort-focused care.

Additionally, the study aims to explore strategies for improving HCPs knowledge, confidence, and preparedness in delivering effective EOLC, ultimately enhancing the quality of care provided to patients and their families.

Methods

Study design

Our research adopts a quantitative cross-sectional study. This study design was well-suited to conduct our study in order to achieve its primary aim, which is investigating the factors Influencing Self-Efficacy of HCPs Towards EOLC in Acute Care Settings.

A cross-sectional study is an observational study that allows for the simultaneous measurement of exposure and outcome variables at a single point in time. It is the simplest of observational studies and is particularly suitable for examining the prevalence of a specific condition within a defined population [18].

Study setting

The study was conducted at the governmental hospitals in Nablus (Rafidia Governmental Hospital and Al-Watani Hospital), Salfit (Salfit Governmental Hospital), and Ramallah (Ramallah Medical Complex).

Sample and sampling method

The sample size was calculated using Raosoft software with a 95% confidence level and 5% margin of error, based on an estimated total population of approximately 130 nurses across the selected governmental hospitals, resulting in a required sample of 100 participants. Resulting in a total of 100 nurses recruited through convenience sampling. Inclusion criteria focused on full-time registered nurses with at least three months of experience, from governmental hospitals in Nablus, Salfit, and Ramallah. Nurses working in departments not directly involved in palliative care were excluded to ensure relevant experience.

Instruments

Data were collected using a comprehensive questionnaire adapted from the validated Self-Efficacy in Palliative Care Scale (SEPC-S). The tool included a mix of multiple-choice, yes/no, and Likert scale questions, organized into three main sections. Section A consisted of eight items designed to collect demographic data such as age, gender, educational background, marital status, years of experience, and work setting. Section B focused on the SEPC-S, which assessed two core domains: communication and patient management. Each domain comprised eight rating items on a scale from 1 ("very anxious") to 10 ("very confident"). Section C evaluated perceptions related to end-of-life care (EOLC) through 21 items rated on a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree."

The SEPC-S was originally developed by Mason and Ellershaw in the UK in 2004 and has demonstrated high internal consistency, with a Cronbach's alpha exceeding 0.92 across all subscales. Since its development, the scale has been validated in multiple settings and languages, including Sweden and Spain. For the purposes of this study, the questionnaire version was scientifically obtained from researcher Raquel Herrero, who had previously led a cultural adaptation and validation of the SEPC-S for use with Spanish nurses [19]. Permission to use the instrument was granted through direct contact with Dr. Herrero, ensuring ethical compliance and appropriate adaptation to the local context. The instrument's prior use in a six-country cross-sectional study further confirms its reliability in assessing caregiver self-efficacy in EOL communication.

Pilot study

In a pilot study, 5% of the total sample size was selected randomly. They were asked to answer the questionnaire and provide feedback about its consistency and

the difficulty of answering the questions. During the pilot phase, respondents were found to understand all the questions without any confusion. Participants also reported that it took them approximately 10 min to complete the questionnaire. The content validity of the instrument was confirmed by a panel of experts in palliative care and nursing education, achieving a Content Validity Index (CVI) of 0.91, indicating high relevance and clarity.

Data collection

Following approval from the Institutional Review Board (IRB), formal requests were submitted to the Ministry of Health to obtain authorization for distributing the research questionnaire among nurses. Once approval was granted, the questionnaire was distributed electronically and in paper format to ensure accessibility and participant convenience amid the ongoing challenges in Palestine, including resource constraints, political instability, and healthcare system pressures that often limit in-person communication and data collection efforts. Data collection took place over one month, from October 21, 2024, to November 21, 2024. The purpose and nature of the research were clearly explained to the participants, and a communication line was established to assist with any questions or clarifications. Finally, the researchers expressed their appreciation for the participants' cooperation and valuable contributions to the study.

Table 1 Demographic characteristics

Variables	Range	*N*	*N*%
Gender			
Male		52	52%
Female		48	48%
Age			
20–30	20–30	53	53%
31–40	31–40	34	34%
41–50	41–50	7	7%
51–60	51–60	6	6%
Educational Qualification			
Diploma		17	17%
Baccalaureate		44	44%
Master's		34	34%
Doctorate		5	5%
Year of experiences			
0-<5	0–4	37	37%
5-<10	5–10	26	26%
≥ 10	10–40	37	37%
Department			
Surgical		18	18%
Medical		26	26%
Critical Care		20	20%
Oncology		6	6%
Others		30	30%
Marital status			
Single		47	47%
Married		53	53%
Have you had contact with patients and/or families with a life limiting illness in the last 12 months?			
No		31	31%
Yes		69	69%
On average, how frequently have you had contact with patients and/or families with a life limiting illness in the last 12 months?			
Weekly		15	15%
Monthly		27	27%
Several times a year		34	34%
Infrequently (less than 2)		17	17%
Never		7	7%

Note:$P < 0.05$ is statistically significant

Statistical analysis

The data analysis was conducted using IBM SPSS Statistics (version 21.0) after cleaning and reviewing the data for accuracy and completeness. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize participants' demographic characteristics. Cronbach's alpha was calculated to assess the reliability of the SEPC scale and the EOL questionnaire, yielding high reliability (> 0.90).

Inferential analyses included independent samples t-tests, one-way ANOVA, and Pearson's correlations to explore relationships between demographics and self-efficacy. Stepwise multiple regression models identified significant predictors of self-efficacy and EOLC competencies. Regression outputs included R, R^2, adjusted R^2, standardized beta coefficients, and F-statistics, with significance at $p < 0.05$.

A power analysis using Raosoft confirmed the sample size ($N = 100$) was sufficient to achieve statistical significance at a 95% confidence level and 5% margin of error, supporting the study's robustness.

Results

The study assessed the self-efficacy of 100 nurses from governmental hospitals in Nablus, Salfit, and Ramallah in providing end-of-life care (EOLC). Table 1 presents the demographic characteristics, showing that most participants were between 20 and 30 years old, married, and held a bachelor's degree. Notably, 69% of the nurses reported direct contact with patients or families facing life-limiting illnesses in the past year, highlighting the relevance of EOLC in their daily practice.

Table 2 presents the frequency of responses to the SEPC-S across two domains: communication and patient management. In the communication section, lower self-efficacy scores appear more frequently in items related to discussing death and sensitive topics, indicating less confidence. In contrast, the patient management section

Table 2 Frequencies of SEPC-S

Item #	Communication	1	2	3	4	5	6	7	8	9	10
	1. When discussing the likely effects of a life-limiting illness?	4	6	13	11	17	8	17	9	9	6
	2. When discussing the likely effects of a life-limiting illness with the patient's family?	7	9	13	12	17	9	11	11	3	8
	3. When discussing issues of death and dying?	6	12	16	10	16	11	9	6	4	10
	4. When discussing the patient's own death (with the patient)?	23	15	9	8	11	11	10	2	1	10
	5. When discussing the patient's death (to occur) with the family?	15	15	6	8	19	11	9	6	3	8
	6. When discussing the patient's death with the family on bereavement?	15	12	13	12	12	12	8	5	4	7
	7. When answering the patient's question, 'How long have I got to live?'	19	14	11	18	6	7	3	5	5	12
	8. When answering the patient's question, 'Will there be much suffering and pain?'	12	20	10	13	13	4	2	12	6	8
Patient management											
	1. Do you have the Ability to assess the patient's needs?	2	1	2	3	11	7	16	15	19	24
	2. Do you have knowledge of the etiology of common symptoms experienced by palliative care patients?	0	1	1	5	10	7	18	17	17	24
	3. Are you able to manage common symptoms experienced by palliative care patients?	0	2	2	6	9	7	12	17	17	28
	4. Are you able to know appropriate and sufficient medications for symptom control?	0	0	3	9	4	5	22	16	16	25
	5. Do you have knowledge of the therapeutic and side-effects of analgesic agents?	0	2	2	10	7	8	11	14	20	26
	6. Are you able to provide psychological care for palliative care patients and their families?	0	2	2	6	10	10	13	17	9	31
	7. Are you able to provide social care for palliative care patients and their families?	0	1	4	4	15	12	16	15	9	24
	8. Are you able to provide spiritual care to palliative care patients and their families?	0	2	5	6	14	11	14	9	14	25

Table 3 SEPC results

Variables	Mean	SD
Commination α = 0.95		
1. When discussing the likely effects of a life-limiting illness?	5.65	2.44
2. When discussing the likely effects of a life-limiting illness with the patient's family?	5.23	2.56
3. When discussing issues of death and dying?	5.11	2.65
4. When discussing the patient's own death (with the patient)?	4.28	2.89
5. When discussing the patient's death (to occur) with the family?	4.74	2.75
6. When discussing the patient's death with the family on bereavement?	4.60	2.70
7. When answering the patient's question, 'How long have I got to live?'	4.50	3.03
8. When answering the patient's question, 'Will there be much suffering and pain?'	4.67	2.89
Total	4.84	2.40
Patient Management: α = 0.95		
1. Do you have the Ability to assess the patient's needs?	7.62	2.19
2. Do you have knowledge of the etiology of common symptoms experienced by palliative care patients?	7.72	1.96
3. Are you able to manage common symptoms experienced by palliative care patients?	7.74	2.15
4. Are you able to know appropriate and sufficient medications for symptom control?	7.71	2.02
5. Do you have knowledge of the therapeutic and side-effects of analgesic agents?	7.62	2.24
6. Are you able to provide psychological care for palliative care patients and their families?	7.62	2.24
7. Are you able to provide social care for palliative care patients and their families?	7.30	2.20
8. Are you able to provide spiritual care to palliative care patients and their families?	7.25	2.14
Total	7.57	1.49

*Significance at $p < 0.05$, SD: Standard Deviation

shows higher frequencies in scores 8–10, suggesting stronger confidence in managing symptoms and providing care. Overall, participants feel more confident in clinical care than in emotionally difficult conversations. Table 3 summarizes the SEPC-S results across two main domains: communication and patient management. Nurses showed moderate overall self-efficacy, with a higher mean score in patient management (mean = 7.57, SD = 1.49) compared to communication (mean = 4.84, SD = 2.40). Within the communication domain, the

lowest confidence was reported when discussing the patient's own death (mean = 4.28) and answering emotionally sensitive questions like "How long have I got to live?" (mean = 4.50). Conversely, nurses felt most confident in managing common symptoms (mean = 7.74) and understanding symptom etiology (mean = 7.72), reflecting strong clinical preparedness but limited confidence in emotionally charged communication.

The End-of-Life Care Competency (EOL-Q) outcomes, detailed in Table 4, also showed variability across domains. The knowledge domain had a moderate mean score of 3.06 (SD = 0.66), reflecting a good understanding of physical and emotional symptom management. In contrast, the attitudes domain had the lowest score (mean = 2.42, SD = 0.62), indicating discomfort with issues like withdrawing life support. The behaviors domain was moderate (mean = 2.90, SD = 0.79), showing

Table 4 Results from EOL-Questionnaire – self perceived competency domains

Item #		Strongly disagree*N*(%)	Dis-agree*N* (%)	Nei-ther*N* (%)	agree*N* (%)	Strongly agree*N*(%)	Mean
Knowledge, I am well prepared to….							
1. Treat pain in the dying patient with pharmacological measures (e.g. opioids, anticonvulsants, antidepressants)	1	5	14	37	43	3.16	0.91
2. Treat pain in the dying patient with non- pharmacological measures (e.g. heat, cold massage, relaxation techniques).	4	13	15	33	35	2.82	1.16
3. Treat respiratory/ gastrointestinal symptoms in the dying patient (e.g. dyspnea and cough)	0	4	25	28	43	3.10	0.91
4. Treat neuro/psychiatric symptoms in the dying patient (e.g. delirium, seizures, anxiety, and restlessness).	5	3	21	39	32	2.90	1.04
5. Discuss advance care planning with patients and families.	0	3	14	37	46	3.26	0.81
6. Identify the emotional needs of dying patients and their families.	1	2	17	29	51	3.27	0.88
7. Identify the cultural needs of dying patients and their families.	2	6	29	21	42	2.95	1.06
8. Identify the spiritual needs of dying patients and their families.	7	1	31	22	39	2.85	1.16
9. Provide grief and bereavement support to patients and families at end-of-life.	1	3	16	29	51	3.26	0.90
Total						3.06	0.66
Attitudes, I feel							
10. Comfortable discussing advance care planning with patients and families.	1	9	14	33	43	3.08	1.01
11. Comfortable with drawing life support in the dying patient.	47	22	17	19	4	1.02	1.18
12. It is important for physicians, nurses, and other team members to collaborate in end-of-life making-decision.	2	9	13	23	53	3.16	1.08
Total						2.42	0.62
Behaviors, In areas that I provide care							
13. I initiate advance care planning with patients/families when they are admitted with no documentation of advance care plans.	7	24	26	20	23	2.28	1.25
14. I use the patient's advance health directive when developing goals for end-of-life care	2	4	15	48	31	3.02	0.89
15. Withdrawal of life support is discussed with patients/families in a timely fashion when the patient's clinical status deteriorates.	8	19	21	22	30	2.47	1.31
16. Clear and consistent information is provided by team members to patients/families making decisions regarding end-of-life care.	3	4	20	34	39	3.02	1.01
17. Conflicts among team members are addressed before meeting with the patient and/or family.	0	4	14	26	56	3.34	0.86
18. Team members meet with the patient and/or family on a regular basis to review the patient's status and to answer questions.	0	5	19	29	47	3.18	0.91
19. Palliative care experts are consulted in a timely manner for end-of-life issues.	5	6	11	37	41	3.03	1.10
20. Continuity of care for the patient/family at end-of-life is observed when health professional work allocations are made.	2	7	18	31	42	3.04	1.03
21. There is sufficient support for staff to handle the personal distress that may arise when caring for patients at end-of-life.	5	10	21	28	36	2.80	1.18
Total						2.90	0.79

SD: Standard Deviation, N: Number of respondents

variability in practices such as advance care planning and interprofessional collaboration.

Reliability analysis confirmed strong internal consistency for both the SEPC-S and EOL-Q scales, as shown in Table 5, with Cronbach's alpha exceeding 0.90. Analyses of relationships between self-efficacy and demographic factors (displayed in Table 6) revealed no statistically significant differences based on age, gender, marital status, education, experience, or ward setting. However, there was a trend toward higher self-efficacy among married nurses and those with advanced degrees or more years of experience.

Correlation analyses, as presented in Table 7, demonstrated strong positive relationships between overall self-efficacy (SEPC total scores) and EOL competencies ($r = 0.88$, $p < 0.01$). Notably, patient management showed stronger correlations with knowledge and behavior domains compared to communication, underscoring the central role of clinical management skills in EOLC competence.

Stepwise regression analyses provided further insights. Table 8 showed that marital status significantly predicted self-efficacy (R^2=0.04, $p = 0.03$), suggesting that personal support systems may enhance confidence in providing EOLC. In Table 9, both patient management and communication were significant predictors of perceived EOLC competence, collectively explaining 85% of the variance (R^2=0.85, $p < 0.001$), with patient management being the stronger factor. These findings emphasize that while nurses feel confident in clinical aspects, addressing communication challenges is crucial for delivering compassionate EOLC.

Discussion

This discussion emphasizes the critical importance of effective End-of-Life Care (EOLC) in acute settings and highlights how the study's findings illuminate key factors influencing healthcare professionals' (HCPs) self-efficacy in Palestine. It aims to comprehensively analyze challenges, competencies, and strategies to improve care quality during terminal stages, ultimately benefiting patients and families.

The study revealed that while nurses demonstrated moderate self-efficacy in EOLC overall, there was a notable disparity between patient management (mean = 7.57) and communication (mean = 4.84) domains. These results align with global studies indicating that while clinical skills such as symptom management are often well-developed among nurses, communication, especially regarding sensitive topics like prognosis and death, remains a significant challenge. This gap highlights the emotional and cultural barriers nurses face in discussing death [12, 20].

Notably, the study identified that marital status was a statistically significant predictor of self-efficacy ($\beta = 0.21$, $p = 0.03$), as shown in the stepwise regression analysis (Table 8). This finding suggests that personal life experiences and emotional support systems may enhance nurses' confidence in delivering EOLC. This aligns with existing literature [21], who reported that emotional support from close relationships plays a protective role in caregiver well-being and self-efficacy in care delivery [21].

In addition to personal factors, prior education and training emerged as key determinants of self-efficacy. Nurses with formal palliative care training reported higher confidence levels in managing both clinical and interpersonal aspects of EOLC. However, the data also exposed a significant gap in recent training, with over 65% of participants not having attended any palliative care education in the past 12 months. This gap is consistent with international findings that continuous professional development is critical to equipping nurses with the evolving competencies needed for high-quality EOLC [22, 23].

Barriers to delivering effective EOLC were also identified, including organizational culture that often prioritizes curative interventions, time constraints, and a lack of institutional support mechanisms such as mentorship and peer support programs. These challenges mirror those reported [14, 15]. Regarding the limited institutional emphasis on EOLC and the resulting emotional burden on nurses.

The study's findings reinforce the necessity of integrating comprehensive and experiential educational interventions. Evidence suggests that simulation-based learning, workshops, and role-playing exercises can significantly enhance nurses' communication skills and self-efficacy in EOLC [24]. Such training should address both technical and emotional aspects of EOLC, promoting confidence in handling sensitive conversations and symptom management.

In conclusion, this study highlights the multifaceted influences on nurses' self-efficacy in EOLC within Palestinian acute care settings. Enhancing communication training, strengthening institutional support, and fostering ongoing professional development are essential strategies to bridge the gap between technical competencies

Table 5 Total mean scores and internal consistency values

Scale	Sum of items	Mean	SD	Cronbach alpha
Total SEPC	16	99.35	23.91	0.95
SEPC: Communication	8	38.77	19.27	0.95
SEPC: Patient Management	8	60.58	14.99	0.95
Total EOL	21	61.01	12.70	0.90

Table 6 Relationships between demographic independent variables Self-Efficacy (SEPC) and Self-perceived competence (EOL)

Categorical independent variables demographic	Self-efficacy (SEPC)	Self-perceived competence (EOL)
Age	**M**	**M**
20–30 years	6.18	4.11
31–40 years	6.00	4.14
41–50 years	6.38	4.09
51–60 years	7.39	4.73
ANOVA	$F = 1.53$, $p = 0.212$	$F = 1.37$, $p = 0.25$
Gender	**M (S.D)**	**M (S.D)**
Male	6.42 (1.49)	4.25 (0.67)
Female	5.97 (1.47)	4.05 (0.75)
t-test	$t = 1.49$,$F = 0.01$, $p = 0.89$	$t = 1.39$, F = 1.87, $p = 0.17$
Educational Degree	**M**	**M**
Diploma degree	5.68	4.00
Bachelor's degree	6.23	4.15
Master's degree	6.22	4.16
Doctorate degree	7.72	4.75
ANOVA	F = 2.54, $p = 0.06$	F = 1.44, $p = 0.23$
Marital statusM (S.D)		**M (S.D)**
Single	5.86 (1.56)	4.06 (0.74)
Married	6.51 (1.37)	4.24 (0.69)
t-test	t = -2.19, F = 0.39, $p = 0.53$	$t = -1.24$, $F = 0.46$, $p = 0.49$
Years of experience M		**M**
0 – < 5	6.07	4.02
5 – < 10	6.24	4.21
≥ 10	6.32	4.26
ANOVA	F = 0.27, $p = 0.76$	$F = 1.20$, $p = 0.30$
Ward setting	**M**	**M**
Surgical	6.40	4.25
Medical	6.28	4.19
Critical Care	6.28	4.14
Oncology	6.60	4.24
Others	5.89	4.07
ANOVA	F = 0.54, $p = 0.70$	F = 0.22, $p = 0.92$
Have you had contact with patients and/or families with a life limiting illness in the last months?	**M (S.D)**	**M (S.D)**
No	6.41 (1.64)	4.33 (0.69)
Yes	6.11 (1.42)	4.08 (0.71)
t-test	t = 0.92, F = 0.97, $p = 0.0\ 32$	$t = 1.64$, F = 1.74, $p = 0.18$
On average, how frequently have you had contact with patients and/or families with a life limiting illness in the last 12months?	**M**	**M**
Weekly	6.43	4.18
Monthly	6.38	4.23
Several times a year	6.19	4.11
Infrequently (less than 2)	6.06	4.25
Never	5.45	3.87
ANOVA	F = 0.65, $p = 0.62$	F = 0.46, $p = 0.76$

Table 7 Pearson correlation between means of self-efficacy (and domains) and outcome variables

Self-Efficacy Palliative Care Scale			
Continuous variables	**Total Self - efficacy**	**Communication**	**Patient management**
I am well prepared to (Q1-9)	0.02**	-0.35**	0.49**
I feel (Q10-12)	0.13**	-0.04**	0.26**
In areas that I provide care (Q13-21)	0.08**	-0.29**	0.51**
EOL-Q -Total	0.88**	0.51**	0.74**

Table 8 Step-wise regression analysis results of the Self-efficacy (SEPC) and demographic

Predictor				
	β	**b**	**t**	***p*-value**
Constant	5.86		27.42	0.00*
Marital status	0.64	0.21	2.19	0.03*

β and *b* = unstandardized and standardized coefficients, respectively; *R* = 0.217; R Square = 0.04; Adjusted R Square = 0.03, F = 4.83,

*Significance level $p < 0.05$

Table 9 Step-wise regression analysis results of the end of life with domains of Self- efficacy (SEPC)

Predictor				
	β	**b**	**t**	***p*-value**
Constant	1.154		8.717	0.00*
Patient management	0.29	0.76	19.51	0.00*
Communication	0.16	0.54	13.85	0.00*

β and b = unstandardized and standardized coefficients, respectively; *R* = 0.92; R Square = 0.85; Adjusted R Square = 0.84, F = 275.34, $p < 0.001$

*Significance level $p < 0.05$

and compassionate, patient-centered care. These efforts are vital not only for improving care quality but also for supporting the emotional well-being of healthcare providers, ensuring that EOLC delivery is both competent and compassionate.

Policy implications

The findings of this study underscore the urgent need for policy-level interventions to strengthen end-of-life care (EOLC) within the Palestinian healthcare system. Given the demonstrated gaps in communication skills and the limited availability of recent EOLC training, healthcare policymakers should prioritize the integration of structured palliative care modules into national nursing curricula and continuing education programs. Regulatory bodies should establish mandatory in-service training for nurses, with an emphasis on communication, ethical decision-making, and psychological support. Furthermore, institutional policies must support the development of interdisciplinary care teams, mentorship models, and workplace resources that promote emotional resilience among healthcare providers. In the broader context of Palestine's ongoing systemic and resource challenges, implementing such policies will help ensure that nurses are better equipped to deliver compassionate, culturally sensitive, and high-quality EOLC across all acute care settings.

Recommendations

To improve EOLC quality and enhance HCPs' self-efficacy, this study recommends integrating dedicated EOLC modules into nursing curricula, covering communication, symptom management, cultural care, and ethical decision-making. Simulation-based training that mirrors real-life scenarios is also encouraged to build competence and confidence. Interdisciplinary workshops and team activities should be implemented to promote patient-centered care. Periodic assessments of self-efficacy using tools like the SEPC-S can help identify skill gaps and guide professional development.

Moreover, emotional and psychological support for HCPs is crucial, with measures such as counseling and peer support. Expanding future research to other regions in Palestine is advised to uncover context-specific challenges. Finally, the study calls for institutional policies that prioritize EOLC, along with mentorship programs to support the growth and competence of healthcare teams.

Study limitations

This study, conducted in governmental hospitals in Nablus, Salfit, and Ramallah, may not fully represent other regions or healthcare settings in Palestine. The use of convenience sampling limits generalizability and may introduce selection bias. The cross-sectional design restricts causal inference and doesn't capture changes over time. Demographic imbalances, like uneven distribution across wards, gender, and experience levels, may have biased subgroup analyses. Finally, reliance on self-reported data despite using validated tools like the SEPC-S could introduce response bias, emphasizing the need for future studies to include objective measures.

Conclusions

This study highlights key factors influencing healthcare professionals' self-efficacy in providing end-of-life care (EOLC) in acute care settings in Palestine. While clinical competence was generally strong, gaps were noted in communication skills, emotional preparedness, and recent training. Factors such as ward setting, experience, and education were linked to higher self-efficacy. The findings emphasize the need for tailored education

programs focused on communication, symptom management, and emotional support. Simulation-based training and continuous professional development are recommended to enhance confidence and care quality. Applying Mason and Ellershaw's framework proved effective, with future studies encouraged to explore long-term impacts on patient outcomes.

Abbreviations

EOLC	End-of-life care
HCPs	Healthcare Professionals
WHO	World Health Organization
SPSS	Statistical Package for the Social Sciences
ANNU	An-Najah National University
IRB	Institutional Review Board
MCQs	Multiple Choice Questions
N	Frequency
CI	Confidence Interval
SD	Standard Deviation; M:Mean

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Author contributions
BFS was responsible for study design, research coordination, literature review, data analysis, and manuscript drafting. JJY assisted with study design, literature review, data analysis, and manuscript drafting. MH oversaw study design, coordinated and supervised the research, critically revised the manuscript for intellectual content, and assisted in revising the final manuscript. EHO, AAT, ABN, MMN, and RSS were responsible for data collection, data revision, and assistance in data analysis. All authors reviewed and approved the final version of the manuscript.

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Data availability
The data sets supporting the current research results are available from the corresponding authors upon request.

Declarations

Ethics approval and consent to participate
The Institutional Review Board (IRB) of An-Najah National University approved the current study under the reference number (Oct. 2024/31). Ethical measures were strictly observed to uphold participant autonomy, privacy, and confidentiality, with informed written consent obtained from all participants. Information regarding voluntary participation and the right of withdrawal was included on the cover page of the questionnaire. The cover page also explained the study objectives and the method of answering the questions. The information gathered was used solely for research purposes and was kept anonymous and confidential. No incentives were provided to participants to complete the survey. The study was conducted in accordance with the ethical standards outlined in the Declaration of Helsinki. Additionally, permission to use the Self-Efficacy in Palliative Care Scale (SEPC-S) was obtained by contacting the original author, Raquel Herrero, who granted approval for using the questionnaire in this research.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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