



Knowledge of Critical Care Nurses about End-of-Life Care towards Terminal Illnesses: Levels and Correlating Factors

INQUIRY: The Journal of Health Care Organization, Provision, and Financing
Volume 59: 1–9
© The Author(s) 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/00469580221080036
journals.sagepub.com/home/inq


Maha Subih, RN, PhD¹, Rasmieh Al-Amer, RN, PhD², Malakeh Z. Malak, RN, PhD³ , Duncan C Randall, PhD⁴, Rima Darwish, GD⁵, Domam Alomari, RN, PhD⁶, and Sultan Mosleh, RN, PhD⁷

Abstract

Introduction: The preparedness of nurses in relation to providing palliative care is not always adequate, indeed, it is sometimes unsatisfactory; this may be caused by lack of knowledge and limited experience in end-of-life care (EOLC). Thus, this study purposed to assess the levels of registered nurses' knowledge about EOLC, examine the relationships between EOLC knowledge and some demographic variables, and explore predictors of EOLC knowledge.

Methods: A cross-sectional design survey was conducted with Jordanian registered nurses in critical care units (N = 175) in different health sectors in Jordan. The End-of Life Professional Caregiver Survey (EPCS) was used.

Results: Findings showed that nurses had moderate/quite a lot of knowledge ($M (SD) = 2.58 (.48)$) about EOLC. The cultural and ethical values was the highest subscale of knowledge about EOLC ($M (SD) = 2.74 (.52)$), while effective care delivery subscale was the lowest one ($M (SD) = 2.33 (.66)$). Knowledge about EOLC was correlated with age ($r = .145, P < .05$), work experience ($r = .173, P < .05$), and training course in palliative or EOLC ($r = .217, P < .01$). The main predictor of EPCS was training courses in palliative or EOLC ($B = .190, P < .05$).

Conclusion: The nurses need to enhance their knowledge about EOLC and correlating factors should be taken into consideration when developing any intervention program. Nurses need palliative care training courses; also more attention is required in palliative care education particularly in clinical skills in effective care delivery.

Keywords

end-of-life care, Jordan, knowledge, nurses, terminal illnesses

¹Adult Health Nursing, Faculty of Nursing, Al-Zaytoonah University of Jordan, Amman, Jordan

²Mental Health Nursing, Faculty of Nursing, Isra University, Amman-Jordan

³Community Health Nursing, Faculty of Nursing, Al-Zaytoonah University of Jordan, Amman, Jordan

⁴University of Southampton, Southampton, Hampshire, UK

⁵General Dentist, 1st Year Residency Program Endodontic, Ministry of Health, Amman, Jordan

⁶Adult Health Nursing, Al-Zaytoonah University of Jordan, Amman, Jordan

⁷Adult Health Nursing, Faculty of Nursing, Mu'tah University, Al Karak, Jordan

Corresponding Author:

Malakeh. Z. Malak, RN, PhD, Community Health Nursing, Faculty of Nursing, A-Zaytoonah University of Jordan, 130 Airport street, Amman 11733, Jordan.
Email: malakehmalak@yahoo.com; malakeh.m@zuj.edu.jo



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and

Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

- **What we Already Know About this Topic**

- It is important that healthcare providers (HCPs), especially critical care nurses, are well prepared with related information and high therapeutic communication skills that support the principles of palliative care. There was a lack of knowledge among most nurses in providing quality palliative care in diverse clinical practice settings, also palliative care training among nurses was inadequate and inconsistent.

- **This Research's Contribution to the Field**

- This study deals with knowledge of critical care nurses about end-of-life care towards terminal illnesses, which was a lack of implementation of palliative care along with curative therapy plans in the country.

- **This Research's Implications Towards Theory, Practice, or Policy**

- This study can inform health policymakers, on the development of evidence-based policies and procedures related to updated practices, preceded by obtaining resources and offering staff education. Clinically, this should include the need to develop programs to improve the capacity of nurses to deliver effective interventions to terminally ill patients. Also, hospitals must concentrate more on continuous educational programs that include palliative care. Further research is needed in this area, with larger samples of critical care nurses to determine whether findings from this study of nurses' perceptions are generalizable to larger groups of critical care nurses.

Introduction

Palliative care refers to the optimization of quality of life for both patients with serious illness and their families, using special measures to anticipate, treat, and prevent suffering. This care encompasses the continuum of illnesses including physical, psychosocial, emotional, and spiritual needs of terminally ill patients.¹

The provision of palliative care services to patients in need is rapidly rising on a global scale. This stems from the fact that chronic diseases are major health threats in this contemporary world.² Chronic health conditions (eg, cancer, chronic respiratory diseases, cardiovascular diseases, and diabetes mellitus) often require palliative care services. For the purpose of this study, a terminal illness is described as an incurable disease that cannot be adequately treated and is reasonably expected to result in the death of the patient.³

It is important that healthcare providers (HCPs), especially critical care nurses, are well prepared with related information and high therapeutic communication skills that support the principles of palliative care. The literature review validated that there was a lack of knowledge among most nurses in providing quality palliative care in diverse clinical practice settings, also palliative care training among nurses was inadequate and inconsistent.⁴ This can lead to challenges, such as a lack of practice in end-of-life care (EOLC) (lack of skills in providing care), a lack of participation in the patient's care plan, and poor knowledge.

The nurses may face dying or death in any hospital setting, therefore, EOLC courses should be included in the nursing curriculum in order to improve the quality of EOLC.⁵ One of the most successful end-of-life (EOL) education projects providing structured information to nurses is the End-of-Life Nursing Education Consortium.⁶

The Canadian Nurses Association, Canadian Hospice Palliative Care Association, & Canadian Hospice Palliative Care Nurses Group⁷ recommended that EOLC should be provided to patients during final stages of dying and extends

to body care after death and bereavement support for the family. Hence, ICU nurses frequently provide EOLC for dying patients and their families. The release in 2016 of the American Association of College of Nursing (AACN) Palliative Competencies and Recommendations for Educating Undergraduate Nursing Students (CARES) drew attention to the need for expanded undergraduate education in this topic (Thrane, 2020).⁸ Teaching professional nurses palliative care/EOLC requires serious efforts that emphasize different methods in teaching, such as role play, and interactive teaching.⁹ However, in Jordan, the curriculum of the Bachelor degree in nursing lacks competencies regarding palliative care skills, and the courses that are offered in this respect are optional.¹⁰

Nurses should know their patients' preferences and wishes in order to be able to provide suitable EOLC and it is crucial that these concerns are discussed with patients and/or their family members.¹¹ Such discussions may avoid both needless hospitalization and useless treatment, and thus assist EOL decision-making processes.¹¹ Nurses who lack knowledge and awareness about palliative care cannot offer proper skills to evaluate patients' needs, and so they cannot be assigned to units that require palliative care.⁴ Moreover, EOL studies have frequently discussed the experiences of nurses working in specialty units, such as critical care, palliative care, and oncology, but have rarely explored EOLC in other ordinary units.¹²⁻¹⁶

All nurses would benefit from ongoing in-service training in palliative care to promote quality of life and reduce suffering among patients and families.⁴ Critical care nurses should be involved in handling the obstacles to palliative care to improve their outcomes.^{14,17} However, a lack of adequate palliative care information is considered as one of the main obstacles in palliative care progress and practice.¹⁸

In Jordan, a developing country, the need for palliative care is increasing, as a consequence of the increasing prevalence of non-communicable diseases, which account for nearly 76% of all deaths.¹⁰ For example, cardiovascular

diseases and cancer are becoming a burden on the Jordanian health system, and they are the main causes of death with 36% and 15%, respectively.¹⁰ Importantly, the healthcare system in Jordan lacks a national care policy in relation to palliative care services; hence, a large number of people with chronic diseases are not able to access such services.¹⁰

Further, Omran and Obeidat¹⁹ claimed that palliative care nursing began in Jordan with the initiation of the Jordan Palliative Care Initiative in 2001. This initiative formed a foundation for establishing the first unit at the King Hussein Cancer Center in 2004, and palliative care services were provided in hospital and home settings. Recognizing the importance of palliative care, the Jordan Palliative Care Society (JPCS), an agency committed to providing palliative care training and education, recommended the incorporation of palliative care early in the course of a chronic disease along with curative therapy plans.¹⁴ Nevertheless, Jordanian nursing schools provide palliative education as elective courses, hence not all students are exposed to this kind of education and training.¹⁹ There are other international recommendations such as World Health Organization (WHO) guidelines that support an early integration of palliative care.

Therefore, this study purposed to evaluate the knowledge about EOLC towards terminal illnesses in general among Jordanian critical care nurses. Also, the following research questions were derived to guide the study:

- (1) What is the level of knowledge about EOLC towards terminal illnesses among Jordanian critical care nurses?
- (2) What is the correlation between knowledge about EOLC towards terminal illnesses and selected demographic variables (age, gender, educational level, marital status, years of experience, and attending training course in palliative or EOLC) among Jordanian critical care nurses?
- (3) What are the predictors of knowledge about EOLC towards terminal illnesses among Jordanian critical care nurses?

Methods

Design, Sample, and Setting

Across-sectional, descriptive correlational design was utilized to perform this study. The target population included all registered nurses who were working in critical care units (CCUs) in different health sectors, including one government, one military-affiliated, one educational, and two private hospitals. Also, the total number of the working nurses in CCUs in the selected hospitals was 300 nurses.

The sample size was calculated using G*power (3.0.10) software program with $\alpha = .05$, effect size = .10, and power = .85 with six predictors. According to regression, a total sample of 159 participants was needed and additional

30% was added to overcome the incomplete questionnaires and withdrawn.

The eligibility criteria included being a registered Jordanian nurse working in CCUs at a hospital setting for at least 12 months prior to data collection to ensure that the study subjects will provide relevant data in relation to EOLC, and were in direct contact with the patients. All working registered nurses in the CCUs in the selected hospitals who were eligible were invited to participate.

Measurements

A self-reported questionnaire was used to collect data and consisted of two-parts, which was described as follows:

Demographic Data. This part was developed by the researchers and based on the previous literature²⁰ and includes age, gender, educational level, marital status, work experience, and attending EOLC/palliative training courses.

Nurses' knowledge about EOLC. The End-of Life Professional Caregiver Survey (EPCS) was used.²¹ This is a 5-point Likert scale with a response format from zero (not at all) to 4 (very much), with a total score of 112; the higher the score the better the knowledge and comfort in providing EOLC. This tool consists of 28 items with three subscales including: (1) patient- and family-centered communication (PFCC) (12 items), (2) cultural and ethical values (CEV) (8 items), and (3) effective care delivery (ECD) (8 items).²¹ In addition, the levels of these subscales were calculated and categorized as follows: 0–1.33 indicates poor/low knowledge, 1.34–2.67 reflects moderate/quite a lot of knowledge, and 2.68–4 indicates high knowledge.

Because Arabic is the native language for the country, the translation was conducted by a panel of four palliative care experts and two laypeople who are proficient in both Arabic and English language using the forward and backward translation technique. Then, the panel discussed any discrepancies that emerged between the original version and the translated version of the survey until consensus was reached and a final version of the Arabic EPCS was produced. Then, content validity index (CVI) of the EPCS in this study was confirmed by three palliative experts and yielded .90. The final Arabic version of the EPCS was piloted on nurses ($N = 30$) to verify the feasibility and the practicality of the survey. Further, internal reliability consistency was measured using Cronbach's alpha on the total study subjects for more accuracy and was .90. For each subscale, a Cronbach's alpha was as follows: PFCC = .80, CEV = .80, and ECD = .84.

Ethical Considerations

Permission was obtained from Institute Review Board at (Al-Zaytoonah University of Jordan) with No# 19/170/2018 and by each participating hospital IRB committee. Also, permission to use the tool (EPCS) was obtained from the original

Table 1. Demographic characteristics of the study sample (N = 175).

Characteristic	n (%)
<i>Gender</i>	
Male	105 (60.0)
Female	70 (40.0)
<i>Marital status</i>	
Single	68 (38.9)
Married	107 (61.1)
<i>Educational level</i>	
Bachelor	158 (90.3)
Master	17 (9.7)
<i>Training course in palliative or EOL care</i>	
Yes	153 (87.4)
No	22 (12.6)
	Mean(SD); [Range]
<i>Age/years</i>	29.25 (5.38); Range = 22–55 years
<i>Work experience/years</i>	6.19 (4.93); Range = 1–30 years

n: number; %: percentage.

authors. Informed consents were obtained from participants, in which each questionnaire was attached with a paper explains the purposes of this study, instructions, and voluntary participation.

Data Collection Procedure

The main researcher approached the head nurses of each unit in the selected hospitals to facilitate data collection and to identify the nurses eligible for the study. Thereafter, two of the researchers approached the potential participants at their clinical premises and explained the purpose of the study. Nurses who agreed to participate were provided with a self-sealed envelope that contained the questionnaires, a written consent form, and a cover sheet that included clear instructions about the study, the participants' rights, and the contact details of the main researcher. The researchers asked the study subjects to put the completed survey into the envelope and seal it to ensure the confidentiality. Participants were informed that they would come back after two weeks to collect the survey. Researchers made a call two days before collecting the survey to make sure that the participants were ready to hand it in. The data were collected in a 3-month period from June to August 2018.

Data Analysis

Data analysis was undertaken using IBM SPSS 21.0 (IBM Corp, Armonk, NY, USA). Data entry was double-checked to prevent errors. After that, the tendency measure, minimum, maximum and frequency measures were obtained to screen data for completeness and any identification of any outliers

Table 2. Levels of nurses' knowledge about EOLC.

Knowledge Subscales	Mean	SD
Patient- and family-centered communication	2.64	.50
Cultural, ethical, and national values	2.74	.52
Effective care delivery	2.33	.66
Total EPCS	2.58	.48

SD: Standard Deviation.

and normality. Descriptive statistics (percentages, frequencies, mean, standard deviation (SD), and range) were used to describe study variables. Correlation coefficient tests (Pearson and point-biserial) were used to examine the relationship between selected demographic variables and EPCS subscales. Then multivariable linear regression was used to find the significant predictors of EPCS subscales.

Results

Out of 200 questionnaires were distributed, 175 nurses completed and returned the questionnaire with a response rate of 87.5%. There was no missing data. The majority of the participants were males (60.0%), married (61.1%), and had completed a bachelor's degree (90.3%). Only 12.6% had attended training courses in palliative or EOLC. The average age of participants was 29.25 (SD = 5.38) years and the average experience years was 6.19 (SD = 4.93) years (Table 1).

The total mean scale for EPCS was (M (SD) = 2.58 (.48)), which indicates that the nurses had a moderate/quite a lot of knowledge. The highest subscales degree for EPCS was in the cultural, ethical, and national values (M (SD) = 2.74 (.52)),

Table 3. Correlation between EOLC and subscales and demographic variables.

Variables	Patient- and Family-Centered Communication		Cultural, Ethical, and National Values		Effective Care Delivery		EOLC Total Scale	
	r	p- value	r	p- value	r	p- value	r	p- value
Age	.156*	.039	.240***	.001	.008	.913	.145*	.042
Work experience/years	.155*	.041	.264***	<.001	.036	.638	.173*	.022
	p.b.r	p- value	p.b.r	p- value	p.b.r	p- value	r	p-value
Gender	-.146	.053	-.121	.110	-.014	.853	-.114	.135
Marital status	.150*	.048	.169*	.025	.000	1.000	.125	.099
Educational level	.002	.980	-.108	.154	.092	.227	.004	.961
Training course in palliative or EOLC	.134	.077	.169*	.025	.236**	.002	.217**	.004

***Correlation is significant at $\leq .001$ level.

**Correlation is significant at the $\leq .01$ level.

*Correlation is significant at the $\leq .05$ level.

Table 4. Predictors of EOLC: Multivariable Linear Regression.

Predictor	b	B	t	p-value	95.0% CI	
					Lower	Upper
<i>Patient- and family-centered communication</i>						
Age	.005	.054	.414	.679	-.020	.029
Work experience	.008	.076	.585	.559	-.018	.034
Marital status	.105	.103	1.261	.209	-.060	.270
R = .189; R² = .036; Adjusted R² = .019						
<i>Cultural, ethical, and national values</i>						
Age	.008	.085	.597	.551	-.020	.036
Work experience	.014	.136	.956	.340	-.015	.044
Marital status	.062	.058	.723	.470	-.107	.232
Training course in palliative or EOL care	.101	.136	1.997	.047	.001	.201
R = .313; R² = .098; Adjusted R² = .076						
<i>Effective care delivery</i>						
Training course in palliative or EOL care	.185	.220	2.936	.004	.061	.309
R = .220; R² = .048; Adjusted R² = .043						
<i>EOLC total scale</i>						
Age	.004	.048	.338	.735	-.020	.029
Training course in palliative or EOLC	.110	.190	2.468	.015	.022	.198
Work experience	.008	.088	.611	.542	-.018	.034
R = .252; R² = .064; Adjusted R² = .047						

b: Unstandardized beta; B: Standardized beta; CI: Confidence Interval.

which reflects the nurses had high knowledge. However, the mean scores for PFCC and ECD were 2.64 ($SD = .50$) and 2.33 ($SD = .66$), which indicates the nurses had a moderate/ quite a lot of knowledge. Additionally, ECD was the lowest subscale (Table 2).

Table 3 illustrates that there was a significant positive correlation between PFCC subscale and age ($r = .156$, $P < .05$), experience ($r = .155$, $P < .05$), and marital status ($r = .150$, $P < .05$). Further, a significant positive association was found between cultural, ethical, and national values subscale and age ($r = .240$, $P \leq .001$), experience ($r = .264$, $P < .001$), marital status ($r = .169$, $P < .05$), and training course in palliative or EOLC ($r = .169$, $P < .05$). Additionally, ECD subscale had a significant positive relationship with training course in palliative or EOLC ($r = .236$, $P < .01$). However, the EPCS total scale was correlated with age ($r = .145$, $P < .05$), work experience ($r = .173$, $P < .05$), and training course in palliative or EOLC ($r = .217$, $P < .01$).

As shown in Table 4, the variables that involved the model as predictors of PFCC subscale were age, experience, and marital status. The full model that included all mentioned predictors of PFCC subscale was not statistically significant ($F_{(3, 174)} = 2.106$, $P = .101$; $R = .189$; $R^2 = .036$; *adjusted* $R^2 = .019$). This indicated that 3.6% of variance in PFCC subscale was illustrated by the whole model. The results found that there were no significant factors of PFCC subscale.

Furthermore, the variables that involved the model as predictors of cultural, ethical, and national values subscale were age, experience, marital status, and training course in palliative or EOLC. The full model that included all mentioned predictors of cultural, ethical, and national values subscale was statistically significant ($F_{(4, 171)} = 4.531$, $P < .01$; $R = .313$; $R^2 = .098$; *adjusted* $R^2 = .076$). This indicated that 9.8% of variance in cultural, ethical, and national values subscale was illustrated by the whole model. Findings found that training course in palliative or EOLC was the significant factor of cultural, ethical, and national values subscale ($B = .136$, $P < .05$).

Furthermore, the variables that involved the model as predictors of ECD subscale was training course in palliative or EOLC. The full model that included all mentioned predictors of knowledge about EOLC was statistically significant ($F_{(4, 171)} = 8.620$, $P < .01$; $R = .220$; $R^2 = .048$; *adjusted* $R^2 = .043$). This indicated that 4.8% of variance in ECD subscale was illustrated by the whole model. The results found that training course in palliative or EOLC care was the main significant factor of ECD subscale ($B = .220$, $P < .01$).

Also, the variables that involved the model as predictors of knowledge about EOLC was age, training course in palliative or EOLC, and work experience. The full model that included all mentioned predictors of knowledge about EOLC was statistically significant ($F_{(3, 171)} = 3.803$, $P < .01$; $R = .252$; $R^2 = .064$; *adjusted* $R^2 = .047$). This indicated that 6.4% of variance in knowledge about EOLC was illustrated by the whole model. The results found that training course in palliative or EOLC was the main significant factor of EOLC ($B = .190$, $P < .05$).

Discussion

This study purposed to evaluate the knowledge about EOLC towards terminal illnesses among Jordanian critical care nurses. The findings found that nurses had quite a lot of moderate knowledge of communication with patients/families and effective care delivery. On the contrary, they had high knowledge in CEV associated with EOLC.

Critical care nurses are not experts but at the same time they are not without some measure of capability. These results are similar to previous studies.²²⁻²⁴ Jordan has limitation in nursing curriculum regarding EOLC and palliative care subject. Also, EOLC has started to be infused in the nursing curricula, but only theoretically, without any clinical implementation for this type of care, maybe that's why ECD was the lowest level. Some hospitals in Jordan provide nurses with continuous educational programs that involve materials related to EOLC services. If provided with the opportunity to improve their EOLC abilities, all nurses potentially could benefit. On the contrary, some nurses perceived themselves less confident in treating the terminally ill and lacked the necessary knowledge and skills to provide care for these patients.^{24,25}

Findings indicated that the nurses had high knowledge of cultural, ethical, and national values. Jordan has an Arabic Islamic culture but religious freedom is adopted, which shapes the Jordanian beliefs, with religious and spiritual aspects treated as important issues for patients. Cultural context might account for the participants' higher scores in the CEV subscale. Religiousness was associated strongly with a greater desire to initiate EOL discussions when indicated.²⁶ The right to die with dignity including, deciding where to die, who is present and treatment options is still not recognized in Jordanian society because of religious values. Recognizing and addressing cultural and religious/spiritual values is a critical aspect of providing goal-concordant care for patients facing a serious illness, especially at the end of life.²⁷ The literature found that insufficient understanding of nursing care by the patient's families; lack of time to talk to patients, lack of nursing knowledge to deal with the bereaved patient's family, are barriers negatively affect nurse's knowledge negatively.²⁸

We found that nurses had quite a lot of knowledge regarding communication with patients/families, which reflects that the nurses had a lack of relationship with family members and the importance of family participation in decision-making about caring and dying processes for their patients. Patient death in terminally ill patients usually occur within hours in CCUs, leaving a short timeframe for the nurses to prepare the family, as well as short time for providing care of the patient.²⁹ Therefore, it is important that effective communication with the family about the process of dying care occur, this shortened timeframe can impact the nurse's ability to help the family through the dying experience.

In ICU, EOLC focuses on patient comfort and frequent communication with patients (when possible) and families. One of the EOLC quality elements in intensive care units is patient/families participation in decision-making and professional

communication between HCP and patients/families.¹⁷ Nurses' explanations and reassurance help patients and family deal with uncertainty and poor health. Critical care nurses as they are learning to competently give patient care and manage the sophisticated technology and invasive treatments can also focus on providing good care. Nurses should be actively involved with patients, families and the interdisciplinary team in end-of-life decision-making by unifying patient care and facilitating communication about the patient's changing clinical condition.³⁰

Turning to the ECD items, which focus on familiarity and effectiveness of palliative and EOLC, our study found that participants had quite a lot of knowledge of EOLC, but this subscale was the lowest among all subscales. This suggesting that there is a critical need in terms of systematic and comprehensive training, in particular in the clinical/practical domain. This is highly recommended knowing that the majority of the sample was young nurses and still at junior level. This is consistent with many studies^{23,24,31} which is not surprising since the participants had limited experience in EOLC and Jordan is a developing country in palliative care and EOLC.

However, other studies reported that nurses had high level of self-confidence with the physical needs of EOLC, but still need essential skills for more holistic care; it has also been stated that nurses who accomplish educational training on palliative care had higher scores in EOLC knowledge and attitudes.^{24,32}

Importantly, the study revealed a significant relationship between educational training in palliative care/EOLC and the level of knowledge, although only a few of these nurses had training programs in palliative/EOLC. These findings are consistent with the literature, which found that educational workshops significantly increased the nurses' knowledge and attitudes in relation to providing EOLC services.^{9,24} On the contrary, formal educational preparation at universities did not appear to be associated with their perceptions of EOLC knowledge. This lack of association confirmed what has been reported in other studies; nurses receive little formal education about EOLC also across all levels of education including hospital training.²⁴

Years of experience and age had positive correlation on nurses' confidence level with their knowledge and skills regarding EOLC in this study. This is inconsistent with results of some studies.^{31,33} However, a previous study found that the more their experience the more confident nurses feel in discussing palliative care with patients and families.²⁵ The explanation for our results is that most nurses were young and junior. Nurses gradually develop knowledge about EOLC with time, continuing to develop more knowledge and skills if offered continuous educational programs.²³

The type of work unit had significant prediction for EOLC knowledge in which ICU nurses had higher scores of knowledge. Reasons may include following institutional strategies involving specific guidelines and evidence-based resources that contribute to correcting the experience in years and training, also critical care nurses may gain knowledge from each other.⁵ Nurses in ICU are in constant touch with

dying patients compared with other department's nurses, some hospitals and units' have policies towards palliative care that nurses should follow.⁵ This is inconsistent with some studies in the United States.^{4,9} While the same result was found with critical care unit nurses in Spain, whereas nurses had the highest level in EOLC knowledge.²⁵

Practice Implications

This study can inform stakeholders, including health policymakers, on the development of evidence-based policies and procedures related to updated practices, preceded by obtaining resources and offering staff education. Also, the hiring of qualified new personnel could be helpful in providing the whole care for the patients and their families.

For clinician's implications, it shows the importance of consistent communication by all members of the multidisciplinary team and patients and their families. A well-educated workforce will provide individualized, compassionate care satisfying the physical, emotional, social, and spiritual needs of patients and families.

Academic educators need to build palliative care to nursing curricula, with more concentration on the clinical part of how to provide EOLC. Clinically, this should include the need to develop programs to improve the capacity of nurses to deliver effective interventions to terminally ill patients. Also, hospitals must concentrate more on continuous educational programs that include palliative care.

More studies are required that consider the impact of religion and beliefs in EOLC. Further research is needed in this area, with larger samples of oncology and medical-surgical nurses to determine whether findings from this study of nurses' perceptions are generalizable to larger groups of nurses from other units in comparison with nurses in ICU.

Limitations

This study has some limitations that need to be considered; this study adopted a cross-sectional design which precludes causality. Further, the study recruited a convenient sample, hence we believe that only motivated participants took part in this study, so generalization cannot be conducted, and results should be interpreted with caution. Additionally, we used self-reporting scales, which increase the likelihood of social desirability bias as well as recall bias.

Conclusion

This study shows a moderate level of perceived skill, with a need for additional knowledge. The findings provide evidence of the need for effective communication with patients and their families about palliative and EOLC. It is crucial to integrate palliative care education, especially EOLC, into continuing education courses and undergraduates' curriculum in nursing schools. Not having EOLC/palliative care

skills increases the possibility of negative patient outcomes. It also enhances the transition from a curative to a palliative approach, which is a challenge for both the nurses and patients. Nurses developing skills and knowledge in this area will enable them to help patients and their families make smoother transitions.

Authors' Contributions

All of the authors contributed in all steps of the paper.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethics Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Al-Zaytoonah University of Jordan).

Informed Consent

Each participant provided informed consent before beginning the study.

ORCID iD

Malakeh Z. Malak  <https://orcid.org/0000-0002-2412-2999>

References

1. National Hospice and Palliative Care Organization. *Explanation of Palliative Care*; 2019. Available from: <https://www.nhpco.org/palliative-care-overview/explanation-of-palliative-care/>.
2. World Health Organization. Palliative care. 2018. Available from: <https://www.who.int/news-room/fact-sheets/detail/palliative-care> <https://www.who.int/news-room/fact-sheets/detail/palliative-care>.
3. Hui D, Bruera E. Integrating palliative care into the trajectory of cancer care. *Nat Rev Clin Oncol*. 2016;13(3):159-171.
4. Chan B. *An Evaluation of the Influence of the Care (Compassion and Respect at the End-of-Life) Program on Registered Nurses' Knowledge and Comfort about End-of-Life Care and Care Delivery for Patients with Life-Limiting Illnesses*. Azusa Pacific University; 2018.
5. Mani ZA. Intensive care unit nurses experiences of providing end of life care. *Middle East Journal of Nursing*. 2016;10(1):3-9.
6. American Association of Colleges of Nursing (AACN). ELNEC fact sheet. 2016. Available from: www.aacn.nche.edu/elnec/about/fact-sheet www.aacn.nche.edu/elnec/about/fact-sheet.
7. Canadian Nurses Association. Canadian Hospice Palliative Care Association, & Canadian Hospice Palliative Care Nurses Group, Joint position statement. The palliative approach to care and the role of the nurse. 2015. https://www.cnaaicc.ca/~media/cna/page-content/pdf-en/the-palliative-approach-to-careand-the-role-of-the-nurse_e.pdf.
8. Thrane SE. Online palliative and end-of-life care education for undergraduate nurses. *J Prof Nurs*. 2020;36(1):42-46.
9. Critical Care Nurses' Perceptions of Their Knowledge and Self-Efficacy about Providing End-of-Life Care Gaffney MK. Walden Dissertations and Doctoral Studies. 2015. 886. <https://scholarworks.waldenu.edu/dissertations/886> <https://scholarworks.waldenu.edu/dissertations/886>.
10. Qadire M, Omran S, Tayyem M. *Palliative Cancer Care in Middle Eastern Countries: Accomplishments and Challenges*. Nova Science Publishers, Inc.; 2014:111-123. Chapter 9: Palliative care in Jordan: Accomplishments and challenges
11. Gjerberg E, Lillemoen L, Førde R, Pedersen R. End-of-life care communications and shared decision-making in Norwegian nursing homes-experiences and perspectives of patients and relatives. *BMC Geriatr*. 2015;15(1):103.
12. Collins GS, Beaman H, Ho AM, Hermiston ML, Cohen HJ, Dzeng EW. Perceptions of specialty palliative care and its role in pediatric stem cell transplant: A multidisciplinary qualitative study. *Pediatr Blood Cancer*. 2022;69(1):e29424. doi:10.1002/pbc.29424.
13. Lafci D, Yildiz E, Pehlivan S. Nurses' views and applications on palliative care. *Perspect Psychiatr Care*. 2021;57(3):1340-1346. doi:10.1111/ppc.12695.
14. Ong KK, Ting KC, Chow YL. The trajectory of experience of critical care nurses in providing end-of-life care: A qualitative descriptive study. *J Clin Nurs*. 2018;27(1-2):257-268. doi:10.1111/jocn.13882.
15. Sekse RJT, Hunskaar I, Ellingsen S. The nurse's role in palliative care: A qualitative meta-synthesis. *J Clin Nurs*. 2018;27(1-2):e21-e38. doi:10.1111/jocn.13912.
16. Kisorio LC, Langley GC. Intensive care nurses' experiences of end-of-life care. *Intensive Crit Care Nurs*. 2016;33:30-38. doi:10.1016/j.iccn.2015.11.002.
17. Abu Sharour L. Lived experience of Jordanian colorectal cancer patients with recurrence: an interpretative phenomenological analysis. *Psychol Health Med*. 2019;24(7):827-835.
18. Hawley P. Barriers to access to palliative care. *Palliative care*. 2017;10:1178224216688887. doi:10.1177/1178224216688887.
19. Omran S, Obeidat R. Palliative care nursing in Jordan. *J Palliat Care Med*. 2015;S4(005):1-4.
20. Göriş S, Taşçı S, Özkan B, et al. Effect of terminal patient care training on the nurses' attitudes toward death in an oncology hospital in Turkey. *J Cancer Educ*. 2017;32(1):65-71. doi:10.1007/s13187-015-0929-6.
21. Lazenby M, Ercolano E, Schulman-Green D, McCorkle R. Validity of the end-of-life professional caregiver survey to assess for multidisciplinary educational needs. *J Palliat Med*. 2012;15(4):427-431.
22. Corcoran K. Evaluation of an educational workshop to increase comfort level of professional caregivers with end-of-life care. *Medsurg Nurs*. 2016;25(2):103-109.

23. Kaasalainen S, Sussman T, Bui M, Akhtar-Danesh N, Laporte RD, McCleary L, SPA-LTC, Team, et al. What are the differences among occupational groups related to their palliative care-specific educational needs and intensity of interprofessional collaboration in long-term care homes? *BMC Palliat Care*. 2017;16(1):33.
24. Walia A, Sharma KK, Garg R, Das S. A descriptive study to assess the knowledge, attitude, practices, perceived barriers, and support regarding palliative care and end-of-life care among critical care nurses of tertiary care medical institute. *Indian J Palliat Care*. 2020;26(4):479.
25. Martínez-Sabater A, Chover-Sierra P, Chover-Sierra E. Spanish nurses' knowledge about palliative care: A national online survey. *Int J Environ Res Publ Health*. 2021;18(21):11227.
26. Tripathy S, Routray P, Mishra J. Intensive care nurses' attitude on palliative and end of life care. *Indian J Crit Care Med*. 2017; 21(10):655.
27. Partain D, Cory I, Jacob JS. Providing appropriate end-of-life care to religious and ethnic minorities. *Mayo Clin Proc*. 2017; 92(1):147-152.
28. Alqahtani AJ, Mitchell G. End-of-life care challenges from staff viewpoints in emergency departments: Systematic review. *Healthcare*. 2019;7(3):83. DOI: [10.3390/healthcare7030083](https://doi.org/10.3390/healthcare7030083).
29. Adams J, Anderson R, Docherty S, Tulsy J, Steinhauser K, Bailey D. Nursing strategies to support family members of ICU patients at high risk of dying. *Heart Lung*. 2014;43(5):406-415. doi:[10.1016/j.hrtlng.2014.02.001](https://doi.org/10.1016/j.hrtlng.2014.02.001).
30. Wong S, Vanderspank-Wright B, Bourbonnais FF, Tousignant K, Wright DK. Intensive care nurses providing end-of-life care in a community hospital. *Can J Critical Care Nurs*. 2020;31(3).
31. Powazki R, Walsh D, Cothren B, et al. The care of the actively dying in an academic medical center: a survey of registered nurses' professional capability and comfort. *Am J Hospic Palliat Care*. 2014;31(6):619-627.
32. Hao Y, Zhan L, Huang M, Cui X, Zhou Y, Xu E. Nurses' knowledge and attitudes towards palliative care and death: a learning intervention. *BMC Palliat Care*. 2021;20(1):1-9.
33. Bailey C, Alistair H. The impact of a 'Critical Moments' workshop on undergraduate nursing students' attitudes to caring for patients at the end of life: An evaluation. *J Clin Nurs*. 2017;23(23-24):3555-3563.