Original Article

Knowledge and Attitudes of Nurses Towards Palliative Care in Greece: A Cross-Sectional Study

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Abstract
Background: Palliative care constitutes a predicated, multidisciplinary team approach that is designed to improve the quality of life of patients and their families who are confronted with problems associated with a life-threatening illness.
Aim: The aim of this study was to investigate nurses' knowledge and attitudes regarding palliative care, as well as the factors that influence them.
Methodology: The sample comprised 120 nurses who had received a university and technical education and who had accumulated a minimum of one year of professional experience. The survey was administered via an online questionnaire.
Results: Approximately 60% of the sample, expressed a preference for caring for patients approaching the end of their lives. A notable finding was that 60% of the nurses said that they would like to care for a dying patient. The investigation revealed no statistically significant effects based on the nurses' marital status, work unit and years of experience. The findings of the study indicated that nurses who reported having received training in palliative care demonstrated higher levels of achievement on the "principles of philosophy" scale and higher overall perceptions.
Conclusions: Nurse education is paramount importance to ensure that nurses possess the knowledge and skills necessary to provide optimal patient care.

Keywords: Nurses, palliative care, knowledge, attitudes, education.

Introduction

Palliative care is defined by the World Health Organization (WHO) as an approach that seeks to improve the quality of life of patients (both adults and children) and their families, as they face the challenges associated with serious or life-threatening illnesses. This is achieved through early detection, appropriate assessment and relief of pain and other physical, psychosocial and spiritual problems. Palliative care is needed by patients with chronic conditions including cancer, cardiovascular diseases, respiratory illnesses, AIDS, and diabetes, as well as those with other serious conditions, such as organ failure, neurological, autoimmune and rheumatic diseases, congenital conditions and infectious diseases such as drug-resistant tuberculosis. Worldwide, 56.8 million people, including 25.7 million in the last year of life, are estimated to need palliative care each year (WHO, 2020). In the WHO European Region, according to the European Association for Palliative Care (EAPC), about 4.4 million people need palliative care each year, including 140 000 children, and the timely provision of palliative care can reduce unnecessary hospital admissions and overuse of health services (WHO 2023).

Palliative care is provided by a multidisciplinary team of health professionals from different specialties , such as nurses, doctors, pharmacists, psychologists and others This team works to provide comprehensive care for patients, meeting their physical, emotional and spiritual needs in the last stages of life (Bowen, 2014; Teoli et al., 2023). Within palliative care, nurses are primarily responsible for managing patients' symptoms, ensuring effective communication between patients, their families and other healthcare professionals, and advocating for their rights (Hagan et al., 2018; Moran et al., 2024).

Although nurses play a key role in the team providing this care, their knowledge has been found to be inadequate in many studies (Etafa et al., 2020; Hao et al,. 2021; Kim et al., 2020).

A systematic review by Parajuli & Hupcey (2021), including twenty studies from different countries, highlighted the limited knowledge of oncology nurses in various aspects of palliative care, including physical, psychological, sociocultural and spiritual aspects. Factors influencing this knowledge included socio-demographic factors, educational status, years of experience and specific training in palliative care.

Another systematic review by Alshammari et al. (2022), which included nineteen studies, identified significant knowledge gaps in psychosocial and spiritual aspects of end-of-life care. Nurses reported negative attitudes towards death, and the authors concluded that there is a need for improved palliative care education in clinical practice and undergraduate curricula. Factors found to influence nurses' knowledge and attitudes, apart from years of experience, are their cultural and religious background and the level of integration of palliative care into the healthcare systems where they were trained or worked.

In Greece, a study conducted by Kalogeropoulou et al. (2016) in a large public hospital found that nurses' knowledge was low and correlated with gender, age, work experience and level of education.

Inclusion of palliative care in the nursing curriculum is necessary to improve the quality of palliative care provided. Structured courses in palliative care should be an integral part of undergraduate nursing education. Education should be comprehensive and cover the basics of palliative care and symptom management by integrating relevant discussions in different courses on palliative care in different contexts, such as with the elderly, children and adults (Al Qadire, 2014; Dimoula et al., 2019).

This study aims to assess nurses' knowledge of palliative care and their attitudes towards caring for dying patients, as well as to investigate the factors that influence these knowledge levels and attitudes.

Methodology

Study design: This is a descriptive synchronic study, which examines nurses' knowledge and attitudes regarding palliative care and the factors that influence them. The data was collected through the electronic distribution of questionnaires to nurses throughout Greece.

Ethical Issues: The study was approved by the Research Ethics Committee of the University of West Attica (approval No. 121596/14-12-2022).

Participants: The study sample comprised of 120 registered nurses with a minimum of one year of professional experience. A link to the questionnaire, created using the SurveyMonkey platform, was sent to nursing organisations to promote it to their members, as well as in online communities of nurses. Participants were recruited using the snowball sampling method. In order to circumvent the occurrence of multiple submissions, the 'submit only once' option was utilized to eliminate duplicate entries. All study participants completed the consent form and questionnaire once. Furhermore, the option that prevented incomplete responses from being submitted was selected.

Research tools: The questionnaire employed in the present study comprised of three sections: demographic data, the Palliative Care Quiz for Nurses (PCQN), and the Frommelt Attitudes Towards Care of the Dying (FATCOD) Scale. The first section of the questionnaire collected socio-demographic data, including age, gender, level of education, family status The researchers developed additional inquiries to ascertain information regarding the participants' hospital setting, department, years of experience, and their current role.

The Palliative Care Quiz for Nurses (PCQN) was utilized to evaluate nurses' comprehension of palliative care. The present questionnaire was developed by Ross et al. (1996). The questionnaire comprises of 20 questions. Each question is designed to elicit a response from the participant that falls into one of three categories: 'true,' 'false,' or 'don't know.' Each correct answer is assigned a value of one point, while incorrect answers and 'don't know' responses are assigned a value of zero points. It is considered that an adequate level of knowledge is demonstrated if the score obtained is equivalent to or exceeds 15/20.

The "Frommelt Attitudes Towards Care of the Dying (FATCOD) Scale" was utilized to assess nurses' attitudes toward end-of-life care. The development of the instrument by Frommelt in 1991 was initiated with the objective of evaluating nurses' attitudes towards palliative care. The test is composed of 30 questions, with 15 positive and 15 negative questions. Participants are instructed to indicate their level of agreement or disagreement with each question using a 5-point Likert scale, ranging from 'strongly agree' to 'strongly disagree'. The potential range of scores is from 30 to 150 points, with higher scores denoting a more positive attitude towards end-of-life care. The questionnaire was translated into Greek and validated by Dimoula et al. (2019).

Data analysis: Data were analysed using IBM SPSS®, version 28 (IBM Corp. in Armonk, NY). Descriptive statistics were applied to the demographic, clinical and psychometric characteristics of the study participants. Relative frequencies (%) and absolute frequencies were calculated for qualitative variables, while means ± standard deviations were calculated for quantitative variables. The Kolmogorov-Smirnov test was used to test for normality and Levene's test was used to test for homogeneity of variances. The effects of demographic characteristics on knowledge and perception questionnaire scores were analysed using independent samples t-tests (for 2 groups) and one-way analysis of variance (for more than 2 groups). Statistically significant main effects were followed by multiple comparisons with Sidak correction. For statistically significant differences, Cohen's effect size d was calculated, defined as small (d = 0.2), medium (d = 0.5) and large (d = 0.8) (Cohen, 1988). For statistically significant main effects, η2p was calculated.

Two forced entry multiple regression models were run, with the outcome being the Palliative Care Perceptions Questionnaire score, where the first model had the PCQN score as the predictor-determinant, and the second model added the demographic and professional characteristics of the study nurses. A series of multiple regression models were also run with the outcome being the knowledge questionnaire score with demographic characteristics as predictor determinants.

Results

Sociodemographic characteristics and participants' knowledge and attitude scores

The majority of participants were female (78.3%) and the mean age was 37.23±9.72 years. Regarding educational level, 39.2% had graduated from technical institutes, 20% had graduated from universities, 25% had a postgraduate degree and 5.8% had a PhD.

Regarding marital status, 45.8% of the participants were unmarried, 49.2% were married, and 5% were divorced. Regarding to the department in which they worked, 16.7% were employed in a pathology department, 16.7% in an intensive care unit, 9.2% in an operating theatre, and 52.5% reported working in another department. In terms of job position, only 10% of the nurses reported working in an administrative position. The mean length of work experience was 12.21 ± 10.09 years, with a range of 1-36 years. Finally, only 15.8% of the nurses in the study reported having received any training in palliative care (Table 1).

The total PCQN scores were calculated by adding up the correct answers. The mean score was 8.84±3 correct questions, with the highest score being 19 questions and the lowest being 2. Only 3.3% of the nurses in the study had a score above 15, while 25% had a score above 10. The majority of participants had a score between 6 and 10 out of 20 (63.3%) (Figure 1).

The total FATCOD scores were calculated by adding up the correct answers. The mean score was 109.99±10.36/150, with a minimum of 88/150 and a maximum of 140/150. The distribution was found to be normal, with the majority of participants scoring within the median range. However, a mere 18.3% of respondents achieved a score above 120 (Figure 2).

Effects of demographic characteristics on nurses' knowledge and attitudes towards palliative care

A series of univariate analyses were conducted to examine the effects of demographic characteristics on nurses' knowledge and attitudes towards palliative care. No statistically significant effects of marital status, work unit and experience on nurses' knowledge and attitudes towards palliative care were observed (p = > 0.05).

However, the results of Student's t analysis for independent samples showed that male nurses had higher scores (M=1.96, SD=0.82) than female nurses (M=1.51, SD=0.97) on the knowledge subscale 'principles of philosophy' (p = 0.03) with a small effect size (d = 0.48). A statistically significant effect of educational level was observed on the "Philosophical Principles" subscale, F (2, 119) = 3.10, p = 0.049, η^2 = 0.05. However, multiple comparisons with Sidak correction showed no statistically significant differences between levels of education. There was also a statistically significant effect of educational level on the total FATCOD score of perceptions, F (2, 119) = 5.74, p = 0.004, η^2 = 0.09, with multiple comparisons using Sidak correction showing that nurses with technical training had lower scores, M = 106.15 (TA = 8.80), on the perception of palliative care ratings than nurses with university education (112.46±10.20) and postgraduate or doctoral graduates (112.47±10.87). No other statistically significant effects of educational level were observed (p = ns).

Head nurses a higher total score on the knowledge questionnaire (10.58 ± 2.39) than nurses (8.65 ± 3.01) (p = 0.03) with a medium effect size (d = 0.65). In addition, Head of nurses scored higher on pain management (7.75 ± 2.05) than nurses (6.21 ± 2.14) (p = 0.02) with a medium effect size (d = 0.72). There were no other statistically significant differences between the two groups. Nurses who reported receiving training in palliative care had higher scores on the philosophy scale (2.05 ± 1.08) than those who did not receive training (1.52 ± 0.91) (p = 0.03), with a medium effect size (d = 0.56). Finally, nurses who reported receiving palliative care training had higher total perception scores (115.53 ± 11.34) than those who did not receive training (108.95 ± 9.88) (p = 0.001) with a medium effect size (d = 0.65). Statistically significant effects are shown in Table 2.

Predictors of perceptions of palliative care

Two multiple regression models were applied with the FATCOD total score as the outcome. The first model had the PCQN score as a predictor and the second model added the demographic and professional characteristics of the study nurses. The first model did not explain the variability in palliative care perceptions to a statistically significant degree (R^2 = 0.02, p>0,05). The second model explained 17.4% of the score to a statistically significant degree (R^2 = 0.17, p = 0.003).

Technological nursing education was a negative predictor (b = -0.30, p<0.01), while reporting palliative care training was a positive predictor (b = 0.29, p<0.01) (Table 3).

Predictors of palliative care knowledge

A series of multiple regression models were run with the PCQN total and subscale scores as outcomes and nurses' demographic/professional characteristics as predictors. The models with the outcomes PCQN total score (R^2 = 0.10, p>0.05), pain management score (R^2 = 0.09, p>0.05) and caregiving score (R^2 = 0.04, p>0.05) did not explain the data to a statistically significant degree. However, the model with the philosophical principles score explained 14.1% of the scores to a statistically significant degree (R^2 = 0.14, p = 0.01). Female gender was a negative predictor (b = -0.21, p<0.05), while technological nursing education (b = 0.22, p<0.05) and reporting palliative care training (b = 0.20, p<0.05) were positive predictors. Years of service, head-nurse position, and a university bachelor's degree did not reach statistical significance. (Table 4)

Correlations between knowledge and attitude questionnaires

The investigation revealed that no statistically significant associations were identified between the knowledge questionnaire scales and the attitude questionnaire (r = −.10 to .14; all p > .05) (Table 5).

Table 1. Table of demographic and psychometric characteristics of the sample

Demographic Characteristics	**N**	**%**
Gender		
Female	94	78.3
Male	26	21.7
Age (mean age ± standard deviation)	37.23±9.72 (23 – 57)	
Educational level		
Bachelor's degree (Technological Education)	47	39.2
Bachelor's degree in Nursing (University Education)	24	20.0
Master's degree	42	35.0
Doctorate	7	5.8
Family status		
Unmarried	55	45.8
Married	59	49.2
Divorced	6	5.0
Place of work Hospital		
Capital city (Athens)	70	58.8
Regional Area (outside Athens)	37	31.1
Abroad	2	1.7
Public hospital (did not specify which one)	10	8.4
Department of Labour		
Oncology	6	5.0
Pathology	20	16.7
Surgical	11	9.2

Intensive Care Unit	20	16.7
Other	63	52.5
Position in the hospital		
Head nurse	12	10.0
Registered Nurse	108	90.0
Years of service (average experience ± standard deviation)	12.21 ±10.09 (1 – 36)	
Are you trained in palliative care?		
Yes	19	15.8
No	101	84.2

Table 2. Effects of demographic and professional characteristics on nurses' knowledge and attitudes about palliative care.

Variable		N	Mean value	Standard deviation	t (118) ή F (2. 119)	*p*
PCQN principles of philosophy						
Sex	woman	94	1.51	0.97	-2.16	0.03
	man	26	1.96	0.82		
Educational level	Bachelor's degree (Technological Education)	47	1.85	1.00	3.10	0.049
	Bachelor's degree (University Education)	24	1.29	1.04		
	Master's/doctoral degreeα	49	1.53	0.82		
Training in palliative care	yes	19	2.05	1.08	2.25	0.03
	No	101	1.52	0.91		
PCQN pain management						
Position in the hospital	Head of Nurse	12	7.75	2.05	2.36	0.02
	Nurse	108	6.21	2.14		
PCQN total						
Position in the hospital	Head of Nurse	12	10.58	2.39	2.15	0.03
	Nurse	108	8.65	3.01		
FATCOD total						

Educational level	Bachelor's degree in Nursing (University Education	47	106.15β,γ	8.80	5.74	0.004
	Bachelor's degree (University Education)	24	112.47α	10.20		
	Master's/doctoral degree	49	112.47α	10.87		
Training in palliative care	Yes	19	115.53	11.34	2.60	0.001
	No	101	108.95	9.88		
Notes. PCQN = knowledge of palliative care. FATCOD = perceptions of palliative care						

Table 3. Multiple regression model with outcome scores for perceptions of palliative care.

		B	SE B	β
1	(Constant)	108.66	2.96	
	PCQN total	0.15	0.32	0.04
2	(Constant)	112.45	3.61	
	PCQN total	-0.14	0.31	-0.04
	Years of Service	0.06	0.11	0.06
	Bachelor's Degree (Technological Education)	-6.36	2.21	-0.30**
	Bachelor's Degree (University Education)With a master's/doctoral degree[α]	0.13	2.67	0.01
	Head of Nurse Nurse [α]	1.90	3.60	0.06
	Training in palliative care Have not received training [α]	8.26	2.54	0.29**
	Woman man[α]	-1.23	2.25	-0.05
Notes. Outcome: perceptions of palliative care (FATCOD). Model 1: $R^2 = 0,02$ (p = ns) $^{*}p < 0,05$, $^{**}p < 0,01$, $^{***}p < 0,001$, Model 2: $R^2 = 0,17$ ($p = 0,003$) $^{*}p < 0,05$, $^{**}p < 0,01$, $^{***}p < 0,001$ [α]= reference group				

Table 4. Multiple regression model with the outcome of the philosophy principles score (PCQN)

	B	SE B	β
(Constant)	1.61	0.25	
Woman	-0.48	0.21	-0.21*
Years of Service	0.01	0.01	0.12
Bachelor's Degree (Technological Education)	0.44	0.21	0.22*
Bachelor's degree (University Education Master's/Doctoral Degree α[α]	-0.09	0.25	-0.04
Head of Nurse Nurse [α]	0.04	0.33	0.01
Training in palliative care Have not received training [α]	0.52	0.23	0.20*
Notes. Output: principles of philosophy (PCQN). R^2 = 0,14 (p = 0,01) *p < 0,05, **p < 0,01, ***p < 0,001, α= reference group			

Table 5. Pearson's *r* correlation coefficients between the PCQN and FATCOD questionnaires

	FATCOD total
PCQN total	0.04
PCQN principles and philosophy of palliative care	-0.10
PCQN pain management and other symptoms	0.05
PCQN psychosocial and spiritual care	0.14
Notes. PCQN = knowledge of palliative care; FATCOD = perceptions of palliative care **. p < 0.01. *. p < 0.05.	

Figure1. Distribution of PCQN total score

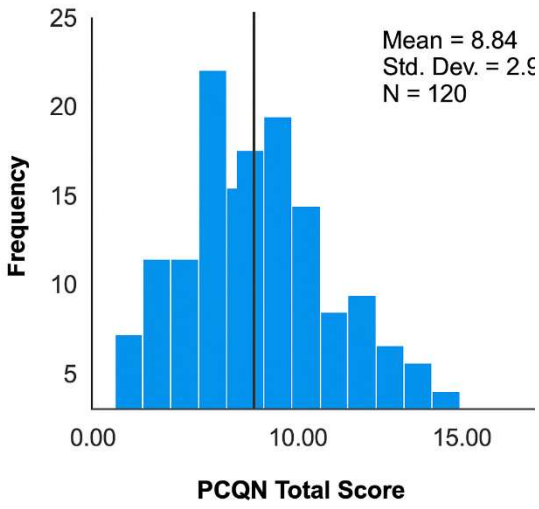
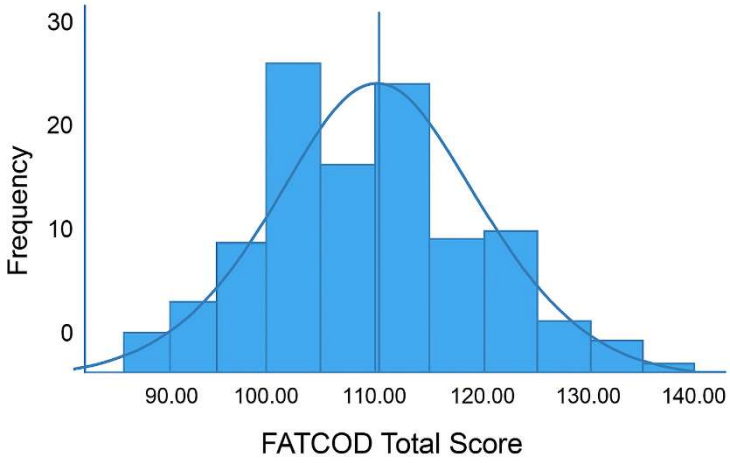


Figure 2. Distribution of FATCOD total scores



Discussion

The results of the study showed that nurses in Greece have insufficient knowledge of palliative care. Only 3.3% scored above 15 points. The average score was 8.84, out of a maximum of 20.

A similar level of knowledge of palliative care among nurses (8.9) was found in another study conducted in Greece by Kalogeropoulou et al. 2016, while the average level of knowledge among undergraduate nursing students was slightly lower, with an average of 8.2 (Dimoula et al., 2019). In other countries, similar values were recorded in China, Korea, and Ethiopia (Choi et al., 2012; Etafa et al., 2020; Yang et al., 2021), while lower values were reported in Saudi Arabia (Khraisat et al., 2017) with a mean score of 7.3 and Jordan (Al Qadire, 2014) with a mean score of 7 8.0. In another study conducted on Spanish nurses by Chover-Sierra et al. (2017), the average score was moderate for 54% of respondents with 10.8/20, while in a study conducted in Cyprus

by Evripidou et al. (2014) on ICU nurses and in Australia by Proctor et al. (2013), the scores were slightly higher, with average values of 12.75 and 13.2, respectively. Recent data from the United States also report an average knowledge score of 11.69 among hospital nurses (Hebeshy and Copeland, 2025). However, in none of the studies did the average score reach 15, which is considered to represent adequate knowledge of palliative care by nurses. Regarding nurses' attitudes towards palliative care, in the present study, the majority of nurses showed a positive attitude with an average score of 109.99 (out of 150). Similar results were found in the study by Dimoula et al. (2019) conducted earlier in Greece with an average score of 111.9. Studies conducted in other countries recorded similar scores, such as in Mongolia (Kim et al., 2020), where the average score was 103.7, and in Oman, where despite knowledge gaps, nurses' attitudes were positive (Lazarus et al., 2025). Overall, the international literature shows that, despite gaps in knowledge, nurses' attitudes towards palliative care are positive (Agena et al., 2024; Farmani et al., 2018; Kassa et al., 2014**).** However, in some studies, the findings differ, such as in the study by Hao et al. (2021), where attitudes were lower, and in the study by Getie et al. (2021)**,** where the opposite finding was recorded, with better knowledge but non-positive attitudes.

In the present study, men had higher scores than women on the "philosophical principles" knowledge subscale with a medium effect size. This finding is consistent with the findings of Kalogeropoulou et al. (2016), but not with the findings of Dimoula et al. (2019) and Jiang et al. (2019), where the sample consisted of nursing students. The study did not find statistically significant differences based on marital status, work unit, or years of experience. This finding is consistent with previous studies (Dimoula et al., 2019; Etafa et al., 2020; Evripidou et al., 2014; Kassa et al., 2014). However, other studies have reported effects of experience and hospital type on both knowledge and attitudes toward palliative care, with greater experience being associated with more positive attitudes (Hamdan et al., 2023, Kalogeropoulou et al., Wijesinghe et al., 2023). According to the results of the present study, nurses with university education, as well as nurses with a master's or doctoral degree, had better scores on perceptions of palliative care than nurses with technical education. In addition, nurses who reported having received training in palliative care had higher scores on the "philosophical principles" scale and overall perception scores than those who had not received training. These findings are confirmed by other studies that show that training is a decisive factor in strengthening nurses' knowledge and attitudes towards palliative care. (Etafa et al., 2020; Getie et al., 2021; Rafiee et al., 2024). Similarly, in the study by Dimoula et al. (2019), training in palliative care was found to be a factor in positive attitudes, while other studies that examined only nurses' knowledge found that those who had received training in palliative care had more knowledge (Chover-Sierra et al., 2017; Martínez-Sabater et al., 2021; Scheinberg-Andrews & Ganz, 2020). Recent studies also highlight the educational needs and differences in the profile of nursing staff (Cai et al., 2025; Zheng et al., 2025).

Finally, in the present study, no statistically significant correlations were observed between the scales of the knowledge questionnaire and the attitude questionnaire. These results are consistent with the findings of Kassa et al. (2014), but contradict the findings of Getie et al. (2021) and Etafa et al. (2020), where there appeared to be a correlation between knowledge and attitudes, as those with knowledge tended to have more positive attitudes.

Conclusions: In conclusion, there is a lack of knowledge about palliative care. The population in need of this type of care is growing and, as mentioned above, it is necessary to have the appropriate knowledge. To begin with, palliative care education should be included in undergraduate courses for all health professionals, especially nurses. In addition to undergraduate education, postgraduate and continuing education is essential, as well as education provided in hospitals through in-patient courses. Education can help to encourage nurses to care for patients who are close to death.

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