



Original Article

Primary care nurses' knowledge of palliative care, attitude towards caring for dying patients, and their relationship with evidence-based practice

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ABSTRACT

Background & Aim: Palliative care is an approach designed for critically ill patients, improving their quality of life and alleviating suffering through early detection, proper assessment, and treatment of pain and other problems, whether physical, psychosocial, or spiritual. The purpose of this study was to assess nurses' knowledge of palliative care and attitudes toward caring for dying patients and their relationship with evidence-based practice. **Methods & Materials:** A cross-sectional study design was employed to collect data from 565 nurses working in primary healthcare organizations from January 2022 to March 2023. An online questionnaire included four parts: demographic and professional characteristics, PCQN, FATCOD, and EBQP questionnaires. An independent T-test, One-Way ANOVA, and Kendall tau rank correlation coefficient, hierarchical multiple regression were performed.

Results: Nurses' palliative care knowledge level was low (mean score: 9.06 ± 2.93). The majority of nurses (93%) have a neutral or negative attitude toward caring for dying patients (94.50 ± 12.41). The obtained score (4.39 ± 1.05) on the EBQP scale indicates an average level of competence in evidence-based practice. Work experience ($\beta=0.534$; <0.001) and competencies in evidence-based practice ($\beta=0.136$; $p=0.001$) are statistically significant factors that affect knowledge of palliative care. The aspect of Knowledge/skills in EBQP is the most significant ($\beta=0.122$; $p=0.005$).

Conclusion: An insufficient level of nurses' knowledge about palliative care and a neutral or negative attitude towards caring for dying patients were revealed. The results also indicate that much attention and resources should be directed toward improving the level of knowledge of nurses in the field of evidence-based practice.

Introduction

Palliative care includes patient-centered physical, psychosocial, and spiritual care aimed at improving the quality of life of both patients facing life-threatening illnesses and their families (1). The need for palliative care is increasing worldwide due to aging populations, the increasing prevalence of chronic diseases, and increased interest in quality of life (2). Moreover, the global burden of serious health-related suffering will increase rapidly in low-income countries and among older people.

When healthcare providers do not have a high level of knowledge about palliative care and do not provide clear and adequate explanations of care to patients and their families, the lack of

information may influence their decisions in difficult situations (3). Providing effective and high-quality palliative care requires the integration of knowledge, skills, and positive attitudes towards palliative care (4). Nurses with the knowledge and skills, to provide end-of-life care can improve the quality of life and satisfaction of patients and their families in the hospital setting (5). Healthcare providers' lack of confidence in providing palliative care reduces the quality of care provided to hospitalized patients (6). Research has confirmed that education is fundamental to increasing health workers' confidence in palliative care (7).

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Previous studies have reported that nurses lack knowledge about palliative care and have negative attitudes toward palliative care (8,9). For example, in Saudi Arabia, a quantitative study was conducted to identify the attitudes, knowledge, and experiences of nurses regarding the prioritization of palliative care in hospitals in Taif. The results revealed that more than half of the nurses (62%) had poor knowledge of palliative care (10). In Palestine, a survey of 424 registered nurses identified low/insufficient knowledge of palliative care among nurses (11). In Ethiopia, the authors identified negative attitudes toward palliative care among nurses who worked in public hospitals. However, work experience did not influence their attitude. The authors suggested that training could lead to changes in the attitudes of nurses who read articles about palliative care and understand research (12).

Despite the growing emphasis on evidence-based practices in palliative care, there remains a significant gap in knowledge and implementation. While the importance of evidence-based practices is recognized, research indicates that palliative care nurses often rely on traditional practices and personal experiences (13). Furthermore, their understanding of evidence-based concepts is limited, hindering effective integration into patient care (14). Although healthcare organizations recognize the need for training strategies in palliative care, scant attention has been given to understanding how nurses' competence in evidence-based medicine impacts their knowledge and skills specific to palliative care. This study aims to explore the relationships between nurses' knowledge of palliative care, attitudes toward caring for dying patients, and evidence-based practice within primary healthcare organizations in Astana, Kazakhstan.

Methods

A descriptive, cross-sectional study was conducted, which was held from 2022 to 2023. A convenience sampling method was used. The State Program of Healthcare Development for 2020-2025 provides, within the framework of increasing the geographical and financial accessibility of palliative care services, the introduction of mobile teams in 100% of primary

healthcare organizations by 2025. Therefore, we have selected 10 primary healthcare organizations out of 15 existing in the city of Astana randomly. A total of 650 nurses working in these primary health care (PHC) organizations and providing palliative care for seriously ill patients at home as part of primary health care were chosen.

A translated version of the Palliative Care Quiz for Nursing (PCQN), the Frommelt Attitudes Towards Care of the Dying (FATCOD), and the Evidence-Based Practice Questionnaire (EBPQ) were utilized to assess nurses' knowledge about palliative care, attitude towards end-of-life care, and knowledge, practice, and attitudes towards EBP, respectively. These are specialized questionnaires that are widely used by authors all over the world. A self-administered questionnaire used for data collection contained three different parts.

The first part was about the demographic and professional characteristics of nurses, such as age, gender, work experience, level of education, and attendance at training.

The second part of the study involved the use of the Palliative Care Quiz for Nurses (PCQN) questionnaire, which was developed by Ross et al. in 1996 (15). This instrument measures the basic palliative care knowledge of nurses. According to Ross et al., the scale indicated high content validity and reasonable reliability (test retest= 0.56 and Kuder-Richardson 20= 0.78). This questionnaire contains 20 questions, which are grouped on three subscales, including: 1) philosophy and principles of palliative care (1, 9, 12, 17 items); 2) management and control of pain and other symptoms (2, 3, 4, 6, 7, 8, 10, 13, 14, 15, 16, 18, 20 items); and 3) psychosocial aspects of care (5, 11, 19, items). These categories can be summarized to get a total knowledge score for each participant. Total scores range from 0 to 20, with higher scores indicating higher knowledge levels. The answers are formulated as "true", "false" and "I do not know". The final answers are coded as follows: 1= correct, 0= incorrect, and I do not know.

In the third part of the study, the Frommelt Attitudes Towards Care of the Dying (FATCOD) questionnaire was used to measure both the respondent's attitude towards a dying patient and toward a dying patient's family. The validity and

reliability of the FATCOD scale have been extensively tested. The FATCOD scale has been found to have a reliability coefficient ranging from 0.85 to 0.94 and a content validity of 1.00. This questionnaire consists of 30 items. Each question is rated on a five-point Likert scale ranging from “strongly disagree” to “strongly agree”. Namely: 1= strongly disagree, 2= disagree, 3= not sure, 4= agree, and 5= strongly agree. The school contains an equal number of positively and negatively formulated statements (15 each), with reversed scores assigned to negative statements (1= strongly agree, 2= agree, 3= not sure, 4= disagree, and 5= strongly disagree). Possible scores ranged from 30 to 150, with higher scores reflecting a more positive attitude and a low score indicating a negative attitude of participants towards caring for dying patients. Twenty statements on the FATCOD scale reflect the attitude of nurses directly toward the patient (a possible range of 20–100); the remaining ten statements indicate the attitude of nurses toward the patient's family (a possible range of 10–50). An overall score is transposed to a percentage scale of 0 to 100. Scores greater than 65% of the total possible score (>108) were considered positive attitudes; between 50% and 65% of the total score (91–108) as neutral; and less than 50% of the total score (<91) as negative attitudes.

In the fourth stage of the study, an assessment of knowledge, skills, attitudes, and practices of EBP was carried out using knowledge-related questions from the Evidence-Based Practice Questionnaire (EBPQ), developed by Upton and Upton. EBPQ is a self-assessment by a medical professional of his own evidence-based practice that describes nurses' day-to-day use of EBP. This questionnaire contains three subscales that represent knowledge and skills (14 statements), attitudes (4 pairs of statements), and practice of EBP (6 statements). These 24 items were rated on a Likert-type scale from 1 to 7. Possible total scores range from 24 to 168 points, with greater scores indicating higher levels of knowledge regarding EBP, more positive attitudes, and more frequent use of EBP. Responses to each EBPQ item were considered negative if scores were between one and four. In our pilot twenty-sample survey,

Cronbach's alpha values were 0.88, and subscales' values were 0.80 to 0.91.

Data were collected between January 2022 and March 2023 using an online questionnaire developed with Google Form, which included demographic and professional data of participants and three questionnaires: PCQN, FATCOD, and EBPQ.

The demographic and professional characteristics of participants were summarized using descriptive statistics (frequencies, percentages, means, and standard deviations). An independent T-test was used to examine the correlation between PCQN, FATCOD, and EBPQ mean scores and some characteristics, including gender and attending training regarding palliative care. To check the association between PCQN, FATCOD, and EBPQ mean scores and age, work experience, and level of education, a one-way ANOVA was performed. The Scheffe test was used to make comparisons among group means in an analysis of variance (ANOVA). The correlation of PCQN, FATCOD mean scores, and EBPQ scale mean scores were evaluated using the Kendall tau rank correlation coefficient. The significance level is considered to be 0.05. Hierarchical multiple regression was performed to determine the factors affecting the level of competence of nurses in the field of palliative care. SPSS version 24 was used to analyze the data.

Prior to the start of the study, ethical approval was obtained from the Local Bioethical Committee of the University (Protocol No. 15 of October 21, 2021). All aspects of this study were carried out in accordance with the 1964 Helsinki Declaration on Ethical Standards. All participants in the study were informed about the objectives of the study before conducting the survey and signed an informed consent to participate. The survey was anonymous. Before starting the survey, the study participants were warned that the results obtained during the survey would not entail negative consequences for them; the answers would be used in a generalized form, and only in this study is confidentiality guaranteed.

Results

A total of 650 questionnaires were distributed; 588 were returned (90.5% response

rate). Then, 23 questionnaires were excluded from the analysis. Finally, 565 nurses who fully understood the purpose of this study and voluntarily consented to participate were included. Participants included nurses who work in primary health care organizations and provide home care for seriously ill patients. The majority of participants were female (94.5%). The age of respondents ranges from 19 to 65 years, with a mean age of 36.90±11.08. The average duration of clinical experience was 12.11±9.83 years.

More than half (52.4%) of the participants held a diploma of secondary vocational education in nursing, while the remaining respondents held higher academic degrees (22.7% held an applied bachelor's degree, 17.2% held an academic bachelor's degree, and 7.8% held a master's degree) in nursing. Most of the nurses (60.2%) have been trained or advanced training in palliative nursing care at least once in their lives. Table 1 presents the respondents' demographic characteristics.

Table 1. Demographic characteristics of study participants

Variables	n	%	Mean ± SD (Range)
Gender			
Women	534	94.5	
Men	31	5.5	
Age (years)			
18-25	62	10.9	36.9± 11,08 (19-65)
26-35	249	44.1	
36-50	167	29.6	
≥50	87	15.4	
Work experience (years)			
1-10	312	55.3	12.1± 9.8 (1-45)
11-20	153	27.0	
21-30	63	11.2	
≥31	37	6.5	
Level of education			
Secondary education	296	52.4	
Applied bachelor's degree	128	22.6	
Academic bachelor's degree	97	17.2	
Master's degree	44	7.8	
Attending training regarding palliative care			
Yes	340	60.2	
No	225	39.8	

The total average PCQN score of the nurses' level of knowledge in palliative care at home was 9.06 (SD: 2.93) out of 20. The minimum and maximum scores were 0 and 19, respectively. None of the participants scored the highest possible score. The investigation results indicated that almost two-thirds of respondents

(63%) scored between 6 and 10 points, which can be interpreted as their limited knowledge. Furthermore, only 9 nurses (1.59%) showed a high level of knowledge, scoring above 15, representing adequate knowledge about palliative care (Table 2).

Table 2. The Palliative Care Quiz for Nursing (PCQN) overall score and percentages of correct and incorrect answers on three subscales

PCQN overall score	n (%)	
0-5 (low)	53 (9.4)	
6-10 (limited)	356 (63)	
11-15 (medium)	147 (26.1)	
16-20 (high)	9 (1.5)	
Subscales	Correct answers (%)	Incorrect answers (%)
Philosophy and principles of palliative care	35.2	64.8
Psychosocial aspects of care	38.6	61.4
Management and control of pain and other symptoms	49.9	50.1
Total	45.3	54.8

As Table 2 shows, most of the correct answers were scored in the category "Management and control of pain and other symptoms" (49.95%). The smallest number of correct answers belonged to the category of

"Philosophy and principles of palliative care" (35.18%). The mean score for all respondents on FATCOD was 94.50 (SD=12.41) (approximately two-thirds of the possible score), with a range from 38 to 142 (Table 3).

Table 3. Total scores on the Frommelt Attitudes Towards Care of the Dying (FATCOD) questionnaire subscales and gradation by type of attitude

Subscales	Possible range	Mean \pm SD	Min - Max
Attitude to patient	20-100	60.37 \pm 8.59	23 - 88
Attitude to the patient's family	10-50	32.92 \pm 5.48	12 - 49
FATCOD overall score	30-150	94.50 \pm 12.41	38 - 142
Attitude level	n	%	
Negative attitude (<91)	192	34	
Neutral attitude (91–108)	335	59.3	
Positive attitude (>108)	38	6.7	
Total	565	100	

Table 3 showed that one-third of nurses (34%) had a negative attitude toward palliative care, and only 6.7% of respondents had a positive attitude. The majority of nurses (59.3%) had a neutral attitude towards caring for dying patients.

The mean total score was 109.7 \pm 25.4 points out of 168 (4.57 out of 7 points; (95% CI, 4.31-4.48). The Attitude subscale obtained the

highest mean score (4.55 \pm 1.41) followed by the knowledge/skills (4.45 \pm 1.28) and practice (3.90 \pm 1.31) subscales (Table 4). Responses were considered negative if scores were between one and four. So, 32.6% of nurses scored below 4 points, which indicates a low level of professional competence in the field of evidence-based practice. Only one respondent scored the highest possible score.

Table 4. Mean scores and standard deviations of, and the Evidence-Based Practice Questionnaire (EBPQ) subscales

Subscales	Possible range	Score (mean \pm SD)	Max - Min
Knowledge/skills associated with evidence-based practice	14-98	69.07 (4.45 \pm 1.28)	15-98
Practice of evidence-based practice	6-42	22.91 (3.90 \pm 1.31)	8-42
Attitude towards evidence-based practice	4-28	17.82 (4.55 \pm 1.41)	8-28
Total	24-168	109.78 (4.57 \pm 1.05)	28-168

As the analysis demonstrates, the level of knowledge/skills in the field of EBP was 69.07 \pm 17.5 points out of 98. The participants highly evaluated their knowledge and skills in reviewing their own practice (5.17 \pm 1.5) and sharing ideas and information with colleagues (5.15 \pm 1.6). The level of attitude toward EBP was 17.82 \pm 5.6 points out of 28. Nurses had the most positive attitude toward the fact that EBP is fundamental to professional practice (4.63 \pm 1.8), and their practice has changed because of the evidence they have found (4.59 \pm 1.7). The «Practice» subscale showed the lowest mean score among the three subscales, with a total score of 22.91 \pm 7.7 points out of 42.

The participants demonstrated high scores in such aspects as: "Sharing information with colleagues" (4.53 \pm 1.9) and "Formulation of clearly answerable questions as the beginning of the process towards filling this gap" (3.93 \pm 1.8).

The findings showed that only nurses who are older (F=129.957; p<0.01) and have more work experience (F=90.27; p<0.01) had a significant difference in their mean total score on the PCQN scale. Factors such as level of education and attending training regarding palliative care positively affected on total score (F=4.111 (p<0.01); t=4.353 (p<0.01), respectively). Only gender did not show a significant difference.

The analysis demonstrated the statistical significance between the overall score on the FATCOD scale and almost all characteristics, with the exception of gender. Thus, no significant differences were detected between gender and attitude.

Nurses with a higher level of education obtained a significantly higher total score on the EBPQ scale ($F=86.213$; $p<0.01$). Significant differences were also found depending on age ($F=3,519$; $p= 0.015$). However, no statistically significant differences were identified according to gender and work experience.

The total score of the EBPQ scale was significantly correlated with the total score of the PCQN scale ($\tau=0.073$, $p=.013$), with his subscale «Management and control of pain and symptoms» ($\tau=0.064$, $p=0.032$), as well as to the total score of the FATCOD scale ($\tau=0.227$, $p<0.01$) and its subscales: Attitude to

patient ($\tau=0.160$, $p<0.01$), Attitude to family ($\tau=0.236$, $p<0.01$). The "Practice" scale of the EBPQ questionnaire was significantly correlated only with the total FATCOD scale ($\tau=0.204$, $p<0.01$) and the subscale «Attitude to the patient» ($\tau=0.086$, $p=0.003$). The «Knowledge/skills» scale of the EBPQ questionnaire showed a significant correlation with all variables, specifically the PCQN scale ($\tau=0.100$, $p<0.01$), its subscales (Philosophy and principles ($\tau=0.113$, $p=0.000$), Psychosocial aspects ($\tau=0.064$, $p= 0.036$), Management and control of pain and symptoms ($\tau=0.085$, $p=0.005$)), and the FATCOD scale ($\tau=0.190$, $p<0.01$) and subscales (Attitude to patient ($\tau=0.161$, $p<0.01$), Attitude to family ($\tau=0.177$, $p<0.01$)). However, there is no correlation between the «Attitude» subscale and all the variables presented.

Table 5. Factors influencing nurses' knowledge of palliative care

Variables	Model 1			Model 2			Model 3			
	b	β	p	b	β	p	b	β	p	
demographic and professional predictors	(Constant)	6.402		0.000	5.190		0.000	5.147		0.000
	Gender	-0.072	-0.006	0.874	-0.071	-0.006	0.874	-0.100	-0.008	0.824
	Work experience	0.159	0.534	0.000	0.159	0.534	0.000	0.158	0.529	0.000
	Level of education	0.103	0.035	0.335	-0.112	-0.038	0.367	-0.213	-0.072	0.116
	Attending training regarding palliative care	0.426	0.071	0.049	0.346	0.058	0.110	0.318	0.053	0.143
evidence-based practice	EBPQ total			0.016	0.136	0.001				
	Knowledge/skills						0.046	0.122	0.005	
	Practice						0.003	0.006	0.900	
	Attitude						0.014	0.083	0.097	
R (R ²)	0.557 (0.311)			0.569 (0.323)			0.573 (0.328)			
F (p)	63.063 (0.000)			53.437 (0.000)			38.822 (0.000)			

Dependent variable: Nurses' knowledge of palliative care

A three-stage Hierarchical Multiple Regression was conducted to examine the impact of a set of parameters (gender, work experience, level of education, attending training regarding palliative care, the EBPQ score, and its three subscales) on the level of competence of nurses in palliative care. Age was highly correlated with work experience and was excluded from independent variables. Before regression analysis, the data were checked for multicollinearity and autocorrelation. The variance inflation factor

(0.009-2.051) indicates the absence of multicollinearity. The Durbin-Watson value was 1.953, which indicates that there is no autocorrelation.

Model 1 includes only demographic and professional factors (gender, work experience, level of education, attending training regarding palliative care) as predictors. The multiple correlation coefficient R-value is 0.557 (moderate correlation on the Chaddock scale). Thus, a positive relationship existed between the predictor variables and the level of competence

of nurses in the field of palliative care. In Model 1, only work experience ($\beta=0.534$; $p<0.01$) and attending training regarding palliative care ($\beta=0.049$; $p<0.01$) were statistically significant, although the effect of the latter was not very high. Given that R^2 is 0.311, these two factors explain 31,1% of the variance in the level of competence of nurses in the field of palliative care.

In Model 2, an overall EBPQ score was added to demographic and professional predictors. This predictor has a statistically significant positive relationship with the level of knowledge about palliative care ($\beta=0.136$; $p<0.01$). The work experience remained statistically significant ($\beta=0.534$; $p<0.01$), compared with the attendance of training regarding palliative care ($\beta=0.058$; $p=0.1$). The remaining predictors remained statistically insignificant. The R-value for Model 2 is 0.569 ($R^2=0.323$), thus 32.3% of the variance had been accounted for.

In Model 3, the overall EBPQ score was replaced by its three subscales (Knowledge/Skills, Practice, and Attitude). The values of R and R^2 slightly increased to 0,573 and 0,328, respectively, thus, 32.8% of the variance had been accounted for. Among the three subscales, only the Knowledge/skills scale demonstrated a statistically significant impact on the level of competence of nurses in the field of palliative care ($\beta=0.122$; $p=0.005$). The subscales Practice and Attitude were not statistically insignificant ($\beta=0.006$ ($p=0.900$) and $\beta=0.083$ ($p=0.097$) respectively). Work experience is still statistically significant ($\beta=0.529$; $p<0.01$), as in the previous model.

It could be seen that all three models were significant ($p<0.001$). It was noted in particular that the F value was the largest for Model 1 (63.063) (Table 5).

Discussion

The present study aimed to explore the level of nurses' knowledge about palliative care, attitude towards caring for dying patients, and relationship with EBP among nurses of PHC organizations.

Findings revealed that the nurses' knowledge about palliative care among nurses was low/inadequate (total mean score 9.06 out of

20). This is consistent with studies from Ethiopia (12), Iran (16), and India (17). However, the total PCQN score was lower than those reported in Southeast Iranian (16), Palestinian (11), and Mongolian (18) nurses, where the mean scores were 7.59 ± 2.28 , 7.75 ± 2.96 , and 7.15 ± 2.31 , respectively. Studies conducted in countries where palliative care is well developed have shown better results than in our study (12.89 and 12.3 points) (19,20). In many studies conducted earlier, the items with the highest number of correct answers related to pain and symptom management, which coincides with our study (21,22).

The mean score of the FATCOD scale was 94.50, which is higher than the results found among nurses in Ethiopian public hospitals (12) and Nigerian teaching hospitals (23), but lower than those of nurses in Australia (24) and the USA (25). Differences in the attitude of nurses may indicate differences in beliefs and cultural characteristics of the above regions that need to be investigated. It has been proven that as working hours increase, nurses become desensitized to issues of death (26). Fristedt S. et al identified the influence of work experience, age, level of education, and attendance at palliative care training on the attitudes of Swiss nurses towards palliative care (27). The positive correlation between knowledge about palliative care and attitude towards caring for dying patients that we found in this study is confirmed by the results of several previous studies (12, 22).

Our study showed that 40% of nurses have never been trained in palliative care. This result is consistent with previous studies conducted in Palestine (28) and Jordan (21). Even in South Korea health care professionals reported a high level of palliative care educational needs (29).

The mean EBPQ score in the present study was 4.39 out of 7 points. This score is slightly higher than the result obtained from registered nurses in traditional Chinese medicine hospitals (30) but lower than surveys conducted in Spain and Latin America, Oman, Egypt, and Jordan, where mean scores ranged between 4,96 and 5,5. In our study, nurses had positive attitudes towards evidence-based practice but did not have sufficient knowledge and extent of applicable scientific information in practice. This finding

goes in the same direction as many previous studies. For example, Egyptian studies conducted by Mohsen *et al.* (31) found that nurses had a positive attitude towards EBP, yet they lacked the knowledge and basic skills of EBP for practical application. It can be concluded that despite the lack of competencies in evidence-based practice, nurses generally have a favorable attitude toward it.

This is the first study of this kind to be conducted in Kazakhstan. The literature review conducted does not indicate any comprehensive study of palliative care knowledge focused on nursing practice anywhere in our country.

This study has some important limitations. Two of the three questionnaires used in our study are self-report questionnaires, which can lead to potential bias and overestimation of some results. Also, the design of the study (the description of the cross-section) allows us to determine associations but does not allow us to identify a causal relationship between nurses' knowledge of palliative care and EBP.

Conclusion

In the course of the study, data were obtained indicating insufficient knowledge about palliative care and a neutral or negative attitude towards caring for dying patients among nurses working in PHC organizations in Astana. Demographic and professional factors such as age, work experience, level of education, and attending training regarding palliative care may affect the level of nurses' knowledge about palliative care and attitude toward caring for dying patients.

The lack of knowledge and skills of nurses in the field of evidence-based practice may contribute to insufficient knowledge about palliative care. It may be necessary to strengthen the theoretical part of the curriculum of the discipline "Evidence-based practice", and continuing palliative care education may need to be added to the nursing curriculum to improve the quality of end-of-life care.

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Conflicts of interest

The authors declare no conflict of interest.

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