RESEARCH ARTICLES

The level of nurses' knowledge about and attitude towards caring for dying patients and relationship with evidence-based practice among nurses of primary health care organisations in Kazakhstan: A cross-sectional study

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ABSTRACT

Background: To provide quality care at the end of life or for chronically sick patients, nurses must have good knowledge, attitude, and practice about palliative care. Lack of knowledge about palliative care, negative attitudes towards it, as well as gaps in evidence-based practice among nurses, are some of the most common obstacles to quality palliative care.

Methods: To collect data, a cross-sectional questionnaire was administered to 565 nurses working in primary health care organisations in Astana, Kazakhstan. Data collection was completed from January 2022 to March 2023. The questionnaire contained demographic and professional characteristic questions, the Palliative Care Quiz for Nurses (PCQN), the Frommelt Attitudes Towards Care of the Dying (FATCOD), and the Evidence-based Practice Questionnaire (EBPQ). Descriptive statistics, independent *t*-tests, and one-way ANOVAs were used for analysis.

Results: The sample size was 565 nurses. Nurses' palliative care knowledge level was low (mean score: 9.06 ± 2.93). The largest number of the correct answers on the PCQN questionnaire was received in the category "Management and control of pain and other symptoms" (49.95%). The majority of nurses (93%) have a neutral or negative attitude towards caring for dying patients (mean score: 94.50 ± 12.41). Only 6.7% of respondents had a positive attitude. The obtained score (4.39 ± 1.05) on the EBPQ scale indicates an average level of competence in evidence-based practice. Age, work experience, educational level, attendance at palliative care training, and good competencies in evidence-based practice are statistically significant factors that affect knowledge of palliative care. The aspect of knowledge/skills in EBP is the most significant ($\beta = 0.122$; $p = 0.005$).

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Conclusions: An insufficient level of nurses' knowledge about palliative care and a neutral or negative attitude towards caring for dying patients was revealed. Health care providers are encouraged to expand palliative care-related training programs, which together can improve the quality of palliative care nursing services for patients. The results also indicate that much attention, and resources should be directed to improving the level of knowledge of nurses in the field of evidence-based practice, because this aspect significantly affects the level of knowledge on palliative care.

Implications for research, policy, and practice: Further research is needed to identify the factors contributing to nurses' inadequate knowledge of palliative care, including gaps in training and cultural or systemic barriers. Policymakers should develop national frameworks for palliative care training and certification, while healthcare institutions should regularly assess and enhance nurses' knowledge through continuous professional development.

What is already known about the topic

- Most nurses do not receive training in palliative care.
- The benefits of using evidence-based medicine in palliative care are described.
- The most common barriers to providing quality palliative care have been described many times.

What this paper adds

- Primary care nurses have insufficient knowledge of palliative care.
- Primary care nurses have a negative or neutral attitude towards palliative care.
- The use of evidence-based medicine by nurses contributes to the formation of a high level of knowledge about palliative care and a positive attitude towards it.

Keywords: Attitude, education, evidence-based practice, knowledge, nursing, palliative care.

INTRODUCTION

Palliative care is an approach to improving the quality of life for patients and their families confronting life-threatening illness. The approach focuses on preventing and relieving suffering through early identification, careful assessment and treatment of pain and other physical symptoms This includes the provision of psychosocial and spiritual support.[1] According to the World Health Organization (WHO), palliative care (PC) improves the quality of life of patients and their families who face problems associated with a life-threatening disease, whether physical, psychological, social, or spiritual.[2] A patient with a serious illness should receive palliative care from the time of diagnosis until the end of their life.[3]

Adequate palliative care reduces the suffering and burden of seriously ill patients.[4] Nurses spend a significant amount of time with patients – more than any other health care professional and have numerous responsibilities that,[5] when performed effectively, help ensure patient safety. Palliative nursing is a holistic approach to managing the symptoms of incurable diseases while simultaneously eliminating pain and other symptoms, psychosocial problems, maintaining spirituality, and improving the quality of life of a seriously ill person.[4] Palliative care is successfully implemented due to the combined influence of good knowledge, attitudes, beliefs, and extensive experience of medical professionals. The negative attitude of nurses towards death and the care of dying people can significantly affect the quality of palliative care.[7]

Nurses working in palliative care are often required to independently master a variety of patient care skills and must learn and adapt to situations at the bedside.[8] It is proved that nurses who actively combined patient preferences with evidence-based practice were able to improve the quality of life of patients and improve individual care.[9] However, at the moment, there are no studies devoted to the study of the problem of the introduction of evidence-based medicine in nursing care at the PHC stage. The majority of scientific research on the introduction of evidence-based nursing was conducted in inpatient hospitals.[10]

Today, palliative care is undergoing many reforms in the world because very few initiatives aimed at implementing it exist, and available evidence is weak. To date, no large-scale clinical trials have been conducted in palliative care.[11] However, there are many studies that confirm the widespread lack of proper knowledge and skills of nursing specialists in palliative care. For example, a study in Iran showed that nurses are poorly familiar with palliative care and its components, they cannot correctly assess the level of pain of patients, and do not have a basic level of communication skills, which are significant obstacles in providing quality palliative care.[12] A Columbia study found that palliative care nurses lacked confidence in their formal knowledge gained through institutional training. Nurses expressed confidence only in the knowledge gained from their experiences. They believed that this was not enough to fully fulfil their role.[13] In Spain, nurses also demonstrate a low level of knowledge in the field of palliative care; however, the level of knowledge

was significantly higher among those who received special training (theoretical or practical) in palliative care.[14] This data is also confirmed by a Taiwanese study, where the professional experience of nurses in the field of palliative medicine positively correlated with their position, professional level (rank), and competence in this field.[15]

It is necessary to note the important role of nurses in ensuring universal access to palliative care, especially at the primary health care (PHC) stage. After all, the vast majority of terminally ill patients receiving palliative care prefer to die at home, so from a medical and ethical point of view, palliative care should be provided at home as part of primary care.[16,17]

The evidence-based approach (EBP) plays an important role in order to better navigate a variety of situations at the bedside of patients.[18] It is proved that nurses who actively combined patient preferences with evidence-based practice were able to improve the quality of life of patients and improve individual care.[19] However, at the moment, there are no studies devoted to the study of the problem of the introduction of evidence-based medicine in nursing care at the PHC stage. The majority of scientific research on the introduction of evidence-based nursing was conducted in inpatient hospitals.[20]

For health systems around the world, providing adequate palliative care is an important challenge. There is a serious gap in this area in many countries, including Kazakhstan.[21] The problem of training palliative care specialists should be recognised at the state level. It is necessary to improve a system for training nurses in palliative care.[22,23]

MATERIAL AND METHODS

STUDY DESIGN AND PARTICIPANTS

A descriptive, cross-sectional study was conducted between 2022 and 2023. The study utilised a convenience sampling method to select participants. Nurses working in PHC organisations in Astana who were involved in delivering palliative care to seriously ill patients at home were targeted for inclusion. Exclusion criteria included nurses working in hospitals or those who had not delivered home-based palliative care.

The study was conducted across 10 randomly selected PHC organisations in Astana. Considering that approximately 3,000 nurses are employed in the city's health organisations, the optimal sample size was calculated to be 341 nurses, based on a 95% confidence level and a 5% margin of error.

All nurses provided informed consent and were sent a link to a Google Form containing the study questionnaire.

DATA COLLECTION

Online questionnaires were used to collect research data as one of the key data collection strategies. Data were collected between January 2022 and March 2023. Online questionnaire included demographic and professional characteristics of participants and questions from two questionnaires (Palliative Care Quiz for Nurses (PCQN); Frommelt Attitudes Towards Care of the Dying (FATCOD) and the Evidence-based Practice Questionnaire (EBPQ)).

MEASUREMENTS

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 utilised to assess nurses' knowledge about palliative care and attitude towards end-of-life care, respectively. These are specialised 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 demographic and professional characteristics of nurses such as age, gender, work experience, level of education, attendance of 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.[24] This instrument measures the basic palliative care knowledge of nurses. According to Ross et al., the scale indicated high content validity, and a reasonable reliability (test re test r = 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),
3. psychosocial aspects of care (5,11,19 items).

These categories can be summarised 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 follow: 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. This questionnaire consists of 30 items. Each individual item is rated on a 5-point Likert scale ranging from one "strongly disagree" to five "strongly agree". Namely: 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree and 5 = strongly agree. Each item provides a description of beliefs and feelings regarding end-of-life care, such as allowing patients to make their own decisions, the nurse being emotionally invested in the patient's

experience, caring for the patient's family, and managing pain. The scale contains an equal number of positively (1, 2, 4, 10, 12, 16, 18, 20, 21, 22, 23, 24, 25, 27, and 30) and negatively (3, 5, 6, 7, 8, 9, 11, 13, 14, 15, 17, 19, 26, 28, 29) formulated statements (15 each). For negative items, the scores are reversed (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 of the FATCOD scale reflect the attitude of nurses directly to the patient (a possible range of 20–100), the remaining ten statements indicate the attitude of nurses to the patient's family (a possible range of 10–50). An overall score transposed to a percentage scale of 0 to 100. Scores more than 65% of the total possible score (>108) were considered as 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 attitude.

At the fourth stage of the study, an assessment of knowledge/skills, attitudes and practice 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, which describe nurses' day-to-day use of EBP. This questionnaire contains 3 subscales that represent knowledge/skills (14 statements), attitudes (4 pair 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 items were considered negative if scores were between one and four. [25]

STATISTICAL ANALYSIS

Descriptive statistics were used to summarise participants' demographic and professional characteristics (frequencies, percentages, means, and standard deviations). Independent *t*-test was used to examine correlation between PCQN, FATCOD, EBPQ mean scores and some characteristics including: gender, attending training regarding palliative care. To check the association between PCQN, FATCOD, EBPQ mean scores and age, work experience, level of education, One-Way ANOVA was performed. The Scheffe test was used to make comparisons among group means in an analysis of variance (ANOVA). Correlation of PCQN, FATCOD mean scores and EBPQ scale mean score evaluated by use of Kendall tau rank correlation coefficient. The significance level considered at 0.05. SPSS version 24 was used to analyse the data.

ETHICAL CONSIDERATIONS

Ethical approval was obtained from the Local Bioethical Committee of the Astana Medical University (Protocol No. 15 of October 21, 2021). All procedures in the study were conducted in accordance with the 1964 Helsinki Declaration on Ethical Standards. All participants of 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 will not entail negative consequences for them, the answers will be used in a generalised form and only in this study, confidentiality is guaranteed.

RESULTS

The questionnaire was distributed among 650 nurses, 23 participants did not meet the inclusion criteria, and 565 responded (response rate of 90.5%). 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% academic bachelor's degree, and 7.8% 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 CHARACTERISTICS OF RESPONDENTS.

Variables	*n* (%)
Age (years)	
Between 18–25 years	62 (10.97)
Between 26–35 years	249 (44.07)
Between 36–50 years	167 (29.56)
50 years old and over	87 (15.40)
Gender	
Women	534 (94.5)
Men	31 (5.5)
Work experience (years)	
Between 1–10 years	312 (55.22)
Between 11–20 years	153 (27.08)
Between 21–30 years	63 (11.15)
31 years and over	37 (6.55)
Level of education	
Secondary education	296 (52.4)
Applied bachelor's degree	128 (22.7)
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)

NURSES' LEVEL OF KNOWLEDGE IN PALLIATIVE CARE

The total average score of the nurses' level of knowledge in palliative care at home was 45.3% (9.06/20, SD: 2.93). The minimum and maximum scores were 0% (0/20) and 95% (19/20), respectively. None of the participants scored the highest possible score. The investigation results indicated that almost two thirds of respondents (63%) scored between 30–50%, 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 (Figure 1).

The largest number of the correct answers on the PCQN questionnaire was received 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%) (Table 2).

Table 3 shows nurses' level of knowledge in palliative care as well as the number of correct and incorrect answers for each item. The percentage of correct answers for each item

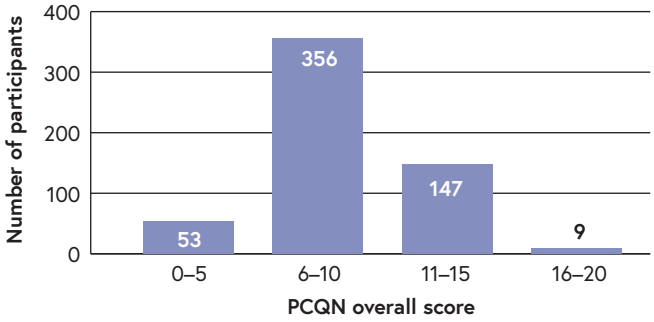

FIGURE 1. NUMBER OF PARTICIPANTS BY RANGE OF POINTS

TABLE 2. CORRECT AND INCORRECT ANSWERS ON THREE SUBSCALES OF THE PCQN QUESTIONNAIRE

Subscales	Correct answers (%)	Incorrect answers (%)
Philosophy and principles of palliative care	35.18	64.82
Psychosocial aspects of care	38.58	61.42
Management and control of pain and other symptoms	49.95	50.05
Total	**45.29**	**54.71**

TABLE 3. CORRECT AND INCORRECT ANSWERS TO EACH QUESTION ON THE PCQN QUESTIONNAIRE

Subscales	Item no.	Questions	Correct answers		Incorrect answers	
			n	%	*n*	%
Philosophy and principles of palliative care	1	Palliative care is appropriate only in situations where there is evidence of a downhill trajectory or deterioration (F)	153	27.08	412	72.92
	9	The provision of palliative care requires emotional detachment (F)	208	36.81	357	63.19
	12	The philosophy of palliative care is compatible with that of aggressive treatment (T)	308	54.51	257	45.49
	17	The accumulation of losses renders burnout inevitable for those who seek work in palliative care (F)	126	22.30	439	77.70
Psychosocial aspects of care	5	It is crucial for family members to remain at the bedside until death occurs (T)	198	35.04	367	64.96
	11	Men generally reconcile their grief more quickly than women (F)	330	58.41	235	41.59
	19	The loss of a distant or contentious relationship is easier to resolve than the loss of one who is close or intimate (F)	126	22.30	439	77.70
Management and control of pain and other symptoms	2	Morphine is the standard used to compare the analgesic effect of other opioids (T)	398	70.44	167	29.56
	3	The extent of the disease determines the method of pain treatment (F)	193	34.16	372	65.84
	4	Adjuvant therapies are important in managing pain (T)	289	51.15	276	48.85
	6	During the last days of life, the drowsiness associated with electrolyte imbalance may decrease the need for sedation (T)	304	53.81	261	46.19
	7	Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain (F)	90	15.91	475	84.09
	8	Individuals who are taking opioids should also follow a bowel regimen (T)	329	58.23	236	41.77
	10	During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment of severe dyspnoea (T)	240	42.48	325	57.52
	13	The use of placebos is appropriate in the treatment of some types of pain (F)	145	25.66	420	74.34
	14	In high doses, codeine causes more nausea and vomiting than morphine (T)	343	60.71	222	39.29
	15	Suffering and physical pain are synonymous (F)	325	57.52	240	42.48
	16	Demerol is not an effective analgesic in the control of chronic pain (T)	298	52.74	267	47.26
	18	Manifestations of chronic pain are different from those of acute pain (T)	444	78.58	121	21.42
	20	The pain threshold is lowered by anxiety or fatigue (T)	271	47.96	294	52.04

T – True; F – False

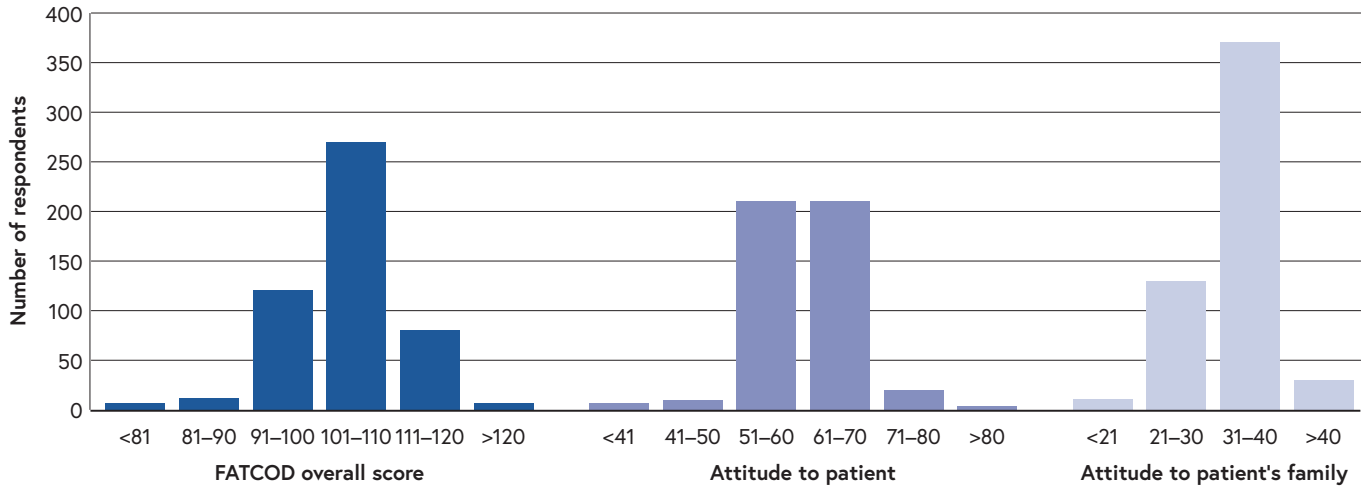

FIGURE 2. NURSES' SCORES ON FATCOD SCALE

ranged from 78.58% to 15.91%. Thus, item 18, which stated that the manifestations of chronic pain are different from the manifestations of acute pain, had the highest number of correct answers (78.58%). However, almost all participants (84.09%) answered incorrectly to item 7, which stated that drug addiction is a serious problem with long-term use of morphine for pain treatment.

NURSES' ATTITUDE TOWARDS CARING FOR DYING PATIENTS

The mean score for all respondents on FATCOD was 94.50 (SD = 12.41) (approximately two third of possible score), with a range from 38 to 142. One third of nurses (34%) had a negative attitude to 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 (Table 4).

TABLE 4. ASSESSMENT OF THE NURSES' ATTITUDE OF PALLIATIVE CARE

Attitude level	Frequency (n)	Percent (%)
Negative attitude	192	34
Neutral attitude	335	59.3
Positive attitude	38	6.7
Total	**565**	**100**

As the analysis of the attitude towards care of the dying showed, almost all respondents' (90%) scored in the range of 81-110 (possible score 30-150), indicating that nurses possess neutral or negative attitudes towards caring for dying patients. The mean score for attitudes towards the patients was 60.37 (SD = 8.59), with scores ranging from 23-88 and most nurses (85%) scored ranging from 51–70 (expected range of scores 20–100). The average score on the subscale about attitude to patient's family was 32.92 (SD = 5.48), varying from 12 to 49 (possible score 10-50), where 68% of nurses scored 31-40 (Figure 2).

Table 5 shows that the average overall score ranged from 2.34/5 (SD: 1.15) "When a patient asks, "Am I dying?" I think it is best to change the subject to something cheerful" to 3.77/5 (SD: 1.05) "Families should be concerned about helping their dying member make the best of his or her remaining life" with a mean of 3.15 (SD: 0.41). Nurses expressed negative attitudes on several items. Thus, the lowest scores were determined for the following statements: "I would be uncomfortable talking about impending death with the dying person", "I would be upset when the dying person I was caring for gave up hope of getting better", "It is possible for nurses to help patients prepare for death " and "When a patient asks, "Am I dying?" I think it is best to change the subject to something cheerful", 2.62/5 (SD: 1.17), 2.57/5 (SD: 1.16), 2,58/5 (SD: 1.18) and 2.34/5 (SD: 1.15), respectively. These statements refer to the subscale "Attitude to patient".

Furthermore, more than 70% of nurses agree that families should maintain as normal conditions as possible for their dying family member (n = 398); families should help the dying family member to make the best use of the rest of his life (n = 426); families need emotional support to accept changes in the behaviour of a dying person (n = 408); the family should be involved in the physical care of a dying person (n = 409).

EVIDENCE-BASED PRACTICE, KNOWLEDGE AND ATTITUDES TO

The mean total score was 109.7 ± 25.4 points out of 168 (4.39 out of 7 points (95% CI, 4.31-4.48). The Attitude subscale obtained the highest mean score (4.55 ± 1.41) followed by knowledge/skills (4.45 ± 1.28) and practice (3.90 ± 1.31) subscales (Table 6). 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 1 respondent scored the highest possible score.

TABLE 5. MEAN SCORES FOR INDIVIDUAL ITEMS OF FATCOD SCALE

FATCOD items	Mean ± SD	Strongly disagree *n* (%)	Disagree *n* (%)	Unsure *n* (%)	Agree *n* (%)	Strongly agree *n* (%)
Attitude to patient						
30. It is possible for nurses to help patients prepare for death.	2,58 ± 1,18	114 (20.2)	183 (32.4)	130 (23.0)	101 (17.9)	37 (6.5)
27. Dying persons should be given honest answers about their condition.	2,95 ± 1,26	88 (15.6)	142 (25.1)	106 (18.8)	171 (30.3)	58 (10.3)
3. I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying.	2,74 ± 1,29	77 (13.6)	95 (16.8)	82 (14.5)	225 (39.8)	86 (15.2)
25. Addiction to pain relieving medication should not be a concern when dealing with a dying person.	3,00 ± 1,29	89 (15.8)	136 (24.1)	93 (16.5)	180 (31.9)	67 (11.9)
23. Nurses should permit dying persons to have flexible visiting schedules.	3,12 ± 1,25	69 (12.2)	130 (23.0)	100 (17.7)	195 (34.5)	71 (12.6)
21. It is beneficial for the dying person to verbalise his or her feelings.	3,65 ± 1,10	42 (7.4)	50 (8.8)	69 (12.2)	306 (54.2)	98 (17.3)
19. The dying person should not be allowed to make decisions about his or her physical care.	3,07 ± 1,12	57 (10.1)	161 (28.5)	149 (26.4)	159 (28.1)	39 (6.9)
17. As a patient nears death, the nurse should withdraw from his or her involvement with the patient.	3,62 ± 1,08	106 (18.8)	272 (48.1)	83 (14.7)	77 (13.6)	27 (4.8)
15. I would feel like running away when the person actually died.	3,60 ± 1,06	94 (16.6)	276 (48.8)	97 (17.2)	69 (12.2)	29 (5.1)
14. I am afraid to become friends with a dying person.	3,55 ± 1,10	95 (16.8)	260 (46.0)	102 (18.1)	75 (13.3)	33 (5.8)
13. I would hope the person I'm caring for dies when I am not present.	3,52 ± 1,10	108 (19.1)	212 (37.5)	141 (25.0)	75 (13.3)	29 (5.1)
11. When a patient asks, "Am I dying?" I think it is best to change the subject to something cheerful.	2,34 ± 1,15	49 (8.7)	44 (7.8)	76 (13.5)	278 (49.2)	118 (20.9)
10. There are times when death is welcomed by the dying person.	3,10 ± 1,14	67 (11.9)	109 (19.3)	123 (21.8)	233 (41.2)	33 (5.8)
8. I would be upset when the dying person I was caring for gave up hope of getting better.	2,57 ± 1,16	52 (9.2)	79 (14.0)	87 (15.4)	269 (47.6)	78 (13.8)
7. The length of time required to give care to a dying person would frustrate me.	3,23 ± 1,13	64 (11.3)	208 (36.8)	126 (22.3)	128 (22.7)	39 (6.9)
6. The nurse should not be the one to talk about death with the dying person.	2,66 ± 1,21	53 (9.4)	103 (18.2)	95 (16.8)	228 (40.4)	86 (15.2)
5. I would not want to care for a dying person.	3,17 ± 1,17	75 (13.3)	171 (30.3)	143 (25.3)	128 (22.7)	48 (8.5)
3. I would be uncomfortable talking about impending death with the dying person.	2,62 ± 1,17	54 (9.6)	82 (14.5)	100 (17.7)	254 (45.0)	75 (13.3)
2. Death is not the worst thing that can happen to a person.	3,03 ± 1,25	77 (13.6)	137 (24.4)	106 (18.8)	181 (32.0)	64 (11.3)
1. Giving care to the dying person is a worthwhile experience	3,45 ± 1,15	53 (9.4)	62 (11.0)	107 (18.9)	264 (46.7)	79 (14.0)
Attitude to patient's family						
30. Family members who stay close to a dying person often interfere with the professional's job with the patient.	2,91 ± 1,11	49 (8.7)	135 (23.9)	137 (24.2)	204 (36.1)	40 (7.1)
28. Educating families about death and dying is not a nursing responsibility	2,74 ± 1,17	52 (9.2)	103 (18.2)	130 (23.0)	206 (36.5)	74 (13.1)
24. The dying person and his or her family should be the in charge decision makers.	3,61 ± 1,07	45 (8.0)	37 (6.5)	97 (17.2)	301 (53.3)	85 (15.0)
22. Nursing care should extend to the family of the dying person.	2,93 ± 1,16	62 (11.0)	177 (31.3)	102 (18.1)	188 (33.3)	36 (6.4)
20. Families should maintain as normal an environment as possible for their dying member.	3,68 ± 1,03	37 (6.5)	38 (6.7)	92 (16.3)	306 (54.2)	92 (16.3)
18. Families should be concerned about helping their dying member make the best of his or her remaining life.	3,77 ± 1,05	35 (6.2)	38 (6.7)	66 (11.7)	307 (54.3)	119 (21.1)
16. Families need emotional support to accept the behaviour changes of the dying person.	3,71 ± 1,02	35 (6.2)	34 (6.0)	88 (15.6)	312 (55.2)	96 (17.0)
12. The family should be involved in the physical care (feeding, personal hygiene) of the dying person.	3,69 ± 1,04	38 (6.7)	38 (6.7)	80 (14.2)	316 (55.9)	93 (16.5)
9. It is difficult to form a close relationship with the dying person.	2,92 ± 1,07	41 (7.6)	136 (24.1)	169 (29.9)	177 (31.1)	42 (7.4)
4. Nursing care for the patient's family should continue throughout the period of grief and bereavement.	2,98 ± 1,18	67 (11.9)	149 (26.4)	124 (21.9)	179 (31.7)	46 (8.1)

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TABLE 6. MEAN SCORES AND STANDARD DEVIATIONS OF EBPQ SUBSCALES

Subscales	Possible range	Score (mean ± SD)
Knowledge/skills associated with evidence-based practice	14–98	69 (4.45 ± 1.28)
Practice of evidence-based practice	6–42	23 (3.90 ± 1.31)
Attitude towards evidence-based practice	4–28	18 (4.55 ± 1.41)
Total	**24–168**	**110 (4.57 ± 1.05)**

As the analysis demonstrates, the level of knowledge/skills in the field of EBP was 69.07 ± 17.5 points out of 98. The participants highly evaluated their knowledge and skills in the reviewing their own practice (5.17 ± 1.5) and sharing of ideas and information with colleagues (5.15 ± 1.6). The level of attitude to EBP was 17.8 ± 5.6 points out of 28. Nurses had the most positive attitude to the fact that EBP is fundamental to professional practice (4.63 ± 1.8) and their practice has changed because of evidence they have found (4.59 ± 1.7). "Practice" subscale showed the lowest mean score among three subscales with a total score of 22.9 ± 7.7 points out of 42. The participants demonstrated high scores in such aspects as: "Share information with colleagues" (4.53 ± 1.9) and "Formulation of clearly answerable question as the beginning of the process towards filling this gap" (3.93 ± 1.8).

ASSOCIATIONS BETWEEN DEMOGRAPHIC/PROFESSIONAL CHARACTERISTICS AND RESEARCH RELATED VARIABLES

Analysis of variance was used to check the relationship in mean scores depending on various characteristics of the respondents. Thus, the findings showed that only nurses who are older ($F = 129.957$; $p = 0.000$) and have more work experience ($F = 90.27$; $p = 0.000$) 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 ($F = 4.111$ ($p = 0.000$); $t = 4.353$ ($p = 0.000$) 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 significantly higher total score on the EBPQ scale ($F = 86.213$; $p = 0.000$). 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 (Table 7).

THE RELATIONSHIP BETWEEN THE LEVEL OF PREPAREDNESS OF NURSES TO PROVIDE PALLIATIVE CARE TO PATIENTS AND EVIDENCE-BASED PRACTICE

Total score of EBPQ scale was significantly correlated with total score of PCQN scale ($t = 0.073$, $p = 0.013$), with his subscale "Management and control of pain and symptoms" ($t = 0.064$, $p = 0.032$), as well as to the total score of FATCOD scale ($t = 0.227$, $p = 0.000$) and its subscales: Attitude to patient ($t = 0.160$, $p = 0.000$), Attitude to family ($t = 0.236$, $p = 0.000$). "Practice" scale of the EBPQ questionnaire was significantly correlated only with total FATCOD scale ($t = 0.204$, $p = 0.000$) and subscale "Attitude to patient" ($t = 0.086$, $p = 0.003$). "Knowledge/skills" scale of the EBPQ questionnaire showed a significant correlation with all variables, specifically with the PCQN scale ($t = 0.100$, $p = 0.001$), its subscales (Philosophy and principles ($t = 0.113$, $p = 0.000$), Psychosocial aspects ($t = 0.064$, $p = 0.036$), Management and control of pain and symptoms ($t = 0.085$, $p = 0.005$)), and FATCOD scale ($t = 0.190$, $p = 0.000$) and subscales (Attitude to patient ($t = 0.161$, $p = 0.000$), Attitude to family ($t = 0.177$, $p = 0.000$)). However, there is no correlation between "Attitude" subscale and all the variables presented (Table 8).

DISCUSSION

Our study assessed the level of nurses' knowledge about palliative care and attitude towards caring for dying patients and relationship with EBP among nurses of PHC organisations.

TABLE 7. ASSOCIATIONS BETWEEN DEMOGRAPHIC/PROFESSIONAL CHARACTERISTICS AND RESEARCH RELATED VARIABLES (ONE-WAY ANOVA)

Variables	The overall score on the PCQN scale		The overall score on the FATCOD scale		The overall score on the EBPQ scale	
	t / F	*p*-value	*t* / F	*p*-value	*t* / F	*p*-value
Gender	*t* = -0.618	0.537	*t* = 1.395	0.164	*t* = 0.516	0.606
Age (years)	F = 129.957	0.000	F = 9.659	0.000	F = 3.519	0.015
Work experience (years)	F = 90.27	0.000	F = 5.079	0.002	F = 0.224	0.879
Level of education	F = 4.111	0.007	F = 15.107	0.000	F = 86.213	0.000
Attending training regarding palliative care	*t* = 4.353	0.000	*t* = 10.279	0.000	–	–

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TABLE 8. CORRELATION OF SCORES ON THE EBPQ QUESTIONNAIRE WITH PCQN AND FATCOD

		Palliative care knowledge (PCQN)				Attitude towards caring for dying patients (FATCOD)		
		Total	Philosophy and principles	Psychosocial aspects	Management and control of pain and symptoms	Total	Attitude to patient	Attitude to family
Knowledge/skills, attitudes and practice of EBP (EBPQ)	Total	t = 0.073* (p = 0.013)	t = 0.034 (p = 0.2702)	t = 0.031 (p = 0.308)	t = 0.064* (p = 0.032)	t = 0.227** (p = 0.000)	t = 0.160** (p = 0.000)	t = 0.236** (p = 0.000)
	Practice	t = 0.039 (p = 0.215)	t = 0.008 (p = 651	t = 0.015 (p = 0.643)	t = 0.027 (p = 0.403)	t = 0.204** (p = 0.000)	t = 0.086** (p = 0.003)	t = 0.025 (p = 0.448)
	Attitude	t = 0.009 (p = 0.791)	t = 0.032 (p = 0.331)	t = –0.048 (p = 0.149)	t = 0.015 (p = 0.645)	t = 0.057 (p = 0.052)	t = 0.010 (p = 0.691)	t = 0.037 (p = 0.241)
	Knowledge/skills	t = 0.100** (p = 0.001)	t = 0.113** (p = 0.000)	t = 0.064* (p = 0.036)	t = 0.085** (p = 0.005)	t = 0.190** (p = 0.000)	t = 0.161** (p = 0.000)	t = 0.177** (p = 0.000)

Notes:
t – Kendall tau rank correlation coefficient
** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

Findings indicated that the nurses' knowledge about palliative care among nurses were low/inadequate (total means core 9.06 out of 20). Similar findings reported by previous studies conducted in Ethiopia,[26] Iran,[27] India.[28] In Australia, nursing assistants within a palliative approach in residential aged care facilities (RACFs) had an overall mean score on the PCQN questionnaire of 13.72.[29] However, when compared to other published literature, the total PCQN score in our study was higher than Southeast Iranian,[30] Indonesian,[31] Palestinian,[32] Mongolian[33] nurses, where the mean scores were 7.59 ± 2.28, 7.78 ± 3.56, 7.75 ± 2.96, 7.15 ± 2.31, respectively. However, studies conducted in countries where palliative care is well developed have shown better results than in our study. In Northern Irish the mean score was 12.89 ± 3.03,[34] and in USA the mean score of nurses was 12.3 ± 2.70 out of 20 possible.[35]

In many studies conducted earlier, the items with the highest number of correct answers related to pain and symptom management scale, as in our study.[36,37] Comprehensive care of physical symptoms including pain is a principle of palliative care.[38] Nurses are essential for palliative care because pain and symptom management are important fundamentals in nursing.[39] The reason for the higher level of knowledge about pain management and other symptoms may be due to the fact that nurse practitioners, and especially those who work in PHC organisations, most often take care of patients with chronic diseases who require daily pain killers and symptom control.[40]

Palliative care is increasingly seen as an essential component of comprehensive care across the lifespan and as a fundamental human right. Despite the existing differences in approaches in different countries, the general philosophy, values and principles of palliative care stand out.[43] However, according to the results of our study, the smallest number of correct answers was in the category "Philosophy and principles of palliative care" (35.18%).

Disciplines on palliative care have recently been introduced in Kazakhstan medical universities and colleges, advanced training courses have been created. Despite this, our study showed that 40% of nurses currently have never been trained in palliative care. This result is consistent with previous studies conducted in Palestine,[42] Jordan[36] and Egypt.[43]

The mean score of the FATCOD scale was 94.50, the majority of nurses (59.3%) had a neutral attitude towards caring for dying patients. It is higher than the results found among nurses in Ethiopian public hospitals,[26] Nigerian teaching hospital,[44] but lower than that of nurses in Australia,[45] Vietnam,[46] Japan,[47] USA.[48] Differences in the attitude of nurses may indicate differences in beliefs and cultural characteristics of the above regions that need to be investigated. Across Asian countries, nurses' attitudes toward death may also be influenced by social, cultural, and organisational differences in practice.[49]

The family plays an important role in the daily life of a terminally ill patient.[50] Most of the nurses surveyed agreed that the family should be as involved as possible in meeting the physical, psychological and other needs of the patient. This may be due to the fact that in some countries, including Kazakhstan, caring for terminally ill patients is considered the responsibility of the family. For example, in Indonesia, due to certain cultural beliefs, almost all hospitals allow family to be with patients 24 hours a day.[51]

Fristedt S. and co-authors conducted a study in Sweden among registered nurses and undergraduate nursing students', which revealed statistically significant differences between the overall score in accordance with work experience and attendance at the Palliative Care program.[52] In our study, similar results were obtained, according to which, work experience and attendance at palliative care training

statistically significantly influenced the nurses' attitude towards caring for dying patients. Furthermore, our study established that nurses' age and level of education influenced their attitudes towards caring for dying patients. Thus, older nurses and those with a higher level of education showed a more positive attitude. These factors are strongly supported by more recent similar studies undertaken in Jordan and Iran.[53,54,55] An interactive review of 26 studies (published between 2000 and 2017) examining nurses' knowledge and attitudes towards palliative care found a positive effect of educational level and years of experience.[56]

The identified correlation between nurses' knowledge of palliative care as a function of attendance at palliative care training and level of education shows the need for adequate training and the involvement of institutions responsible for providing this training.[57,58] The inclusion of palliative care education in the educational programs of universities and nursing schools will improve the education of nurses and improve their attitudes towards end-of-life care. In addition, there is a need to introduce and improve postgraduate and continuing education with a variety of training hours and content depending on the level of education of palliative care nurses.

However, in order to identify the real educational needs of nurses, a thorough assessment of knowledge in the field of palliative care among medical workers is necessary, not only in primary care and not only in Astana but throughout the country. There is currently a lack of instruments that are designed to test nurses' knowledge of palliative care separately according to the level of palliative care provision. This could be a further direction for research.

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,[55] but higher than surveys conducted in Spain and Latin America, Oman, Egypt and Jordan, where mean scores ranged between 4.96 and 5.5.[25,59,60]

In our study, as in most other similar studies, EBPQ subscale scores were highest for "attitude" followed by "knowledge/skills" and "practice".[25,59,61] According to the results of a study that we conducted, most nurses scored low points on the "practice scale". This finding is consistent with the results of another study, a study conducted among nurses in Nepal, where Karki S. and co-authors described the greatest barriers, such as lack of time and resources, difficulty understanding research articles and translating the findings to practice, and limited autonomy to change practice based on evidence.[62]

A survey of regional Australian nurses and midwives showed that the level of possession of evidence-based practice remains low. Education level and job satisfaction are key correlators of evidence-based practice potential in this regional Australian sample.[63] Australian researchers have proven that a higher level of education, less emotional exhaustion and higher job satisfaction, full-time work are the best predictors of the level of EBP skills.[64]

To the best of our knowledge, this is the first study that examines the level of nurses' knowledge about and attitude towards caring for dying patients, evidence-based practice among nurses of PHC organisations in Kazakhstan.

LIMITATIONS

This study has some important limitations. The FATCOD scale used in our study is self-report questionnaire, which can lead to potential bias and overestimation of some results. The study involved 565 nurses working in PHC organisations. For a more detailed analysis, it may be necessary to include more respondents. The cross-sectional design of the study does not allow us to draw an unambiguous conclusion about the cause-and-effect relationship between phenomena but only describes them.

IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE

Further investigation is needed to explore the factors influencing the inadequate knowledge of nurses in palliative care. This could involve identifying gaps in training programs, examining the cultural or systemic barriers to knowledge dissemination, and investigating how these knowledge deficits affect patient outcomes. Additionally, comparative studies across countries with well-established palliative care systems could provide valuable insights into the effectiveness of various educational strategies and interventions. In Kazakhstan, the issue of adequate nursing care in palliative care requires further study.

Policymakers should prioritise the development of national frameworks for palliative care training and certification for nurses. In countries where palliative care is underdeveloped, initiatives could include the establishment of specialised training centres and collaboration with international organisations to elevate the overall quality of care.

Healthcare institutions should regularly assess the palliative care knowledge of their nursing staff and provide continuous professional development opportunities to address knowledge gaps. Emphasising the core values and principles of palliative care in everyday clinical practice can improve care delivery and ensure that all patients, regardless of their age or stage of illness, receive the compassionate and comprehensive care they deserve.

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 organisations in Astana.

Demographic and professional factors such as age, work experience, level of education, attending training regarding palliative care may affect the level of nurses' knowledge about palliative care and attitude towards 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, possibly due to the lack of knowledge necessary to formulate a clinical question, search and selection of scientific publications. It may be necessary to strengthen the theoretical part of the curriculum of the discipline "Evidence-based practice", and a continuing palliative care education may need to be added to the nursing curriculum in order to improve the quality of end-of-life care.

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