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Original Article

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Nurses' Perception and Performance of End-of-Life Care in a Tertiary Hospital

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Purpose: This study aimed to identify levels of perception and performance of end-of-life care among nurses and to investigate correlations between perception and performance. **Methods:** This cross-sectional descriptive survey included 321 nurses from a tertiary hospital in Seoul, Korea. The participants had at least 6 months of work experience and had been involved in end-of-life care at least once, in either ward or intensive care unit settings. A structured questionnaire was utilized to assess their perception and performance of end-of-life care. **Results:** The mean score for perception of end-of-life care was 3.23±0.34, while the score for performance of end-of-life care was 3.08±0.34. There was a significant positive correlation between nurses' perception of end-of-life care and their performance in this area (r=0.78, P<0.001). **Conclusion:** It is necessary to change perceptions regarding end-of-life care and to develop systematic and standardized education programs including content such as assessing the hydration status of dying patients, evaluating mental aspects such as suicidal ideation, and providing spiritual care for nurses working in end-of-life departments.

Key Words: Terminal care, Nurses, Perception, Work performance

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INTRODUCTION

1. Background

In South Korea, the Act on Hospice and Palliative Care and Decisions on Life-Sustaining Treatment for Patients at the End of Life (hereinafter referred to as the Act on Decisions on Life-Sustaining Treatment) has been enacted to uphold the autonomy of patients in hospice palliative care or end-of-life situations, and to honor their dignity and worth as human beings [1]. The concept of a good death is considered a crucial goal for patients nearing the end of life [2]. The growing elderly population and fluctuating medical services have led to an increase in the number of patients dying in acute hospitals [3,4]. In fact, a study found that 74.8% of individuals with records experienced death in medical institutions [5]. Consequently, the importance of end-of-life care for dying patients has come to the forefront, and delivering high-quality terminal care has emerged as a primary concern for healthcare organizations worldwide [6].

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Healthcare providers in acute settings, such as tertiary hospitals, are responsible for caring for critically ill and terminally ill patients. This care spans various stages of treatment, from diagnosis to end-of-life care. During the final stages of treatment, it is crucial for these providers to minimize unnecessary life-sustaining treatments, empathetically communicate poor prognoses to patients, and continue essential treatment and care [7]. However, due to factors such as insufficient support, heavy workloads, and the family-oriented culture of Korea, as well as a clinical culture that tends to avoid discussions about death, healthcare providers often experience stress, guilt, depression, and skepticism while caring for dying patients [4,7]. Nurses, in particular, face challenges in meeting the requests of patients' family members and adequately managing pain for terminal patients. They often question their own abilities to simultaneously follow physicians' orders and accommodate patients' requests, which can lead to burnout [6]. Nurses are tasked with managing symptoms associated with impending death, such as dyspnea, pain, respiratory secretions, and confusion. They devise plans to alleviate these symptoms [8] and spend the most time with patients, providing both physical and emotional support [9]. In addition, nurses assist patients' families in preparing for the changes that may occur during the dying process [8]. They also play a crucial role in advocating for dying patients and their families during decision-making and treatment processes [9].

Several studies have examined the performance of end-of-life care, attitudes toward such care, the stress associated with it, and nurses' perceptions of death [10-12]. These studies suggest that when nurses have a heightened perception of terminal care for end-of-life patients, their nursing practices tend to be more positive [11]. This underscores the importance of nurses' perception in providing care for dying patients. Earlier research has explored the level of nurses' end-of-life care performance across physical, psychological, emotional, social, and spiritual dimensions, often involving patients or their family members [10,12]. However, these studies also identified barriers that could diminish nurses' end-of-life care performance in patient and family-related areas. These barriers include patients and their families' expectations of treatment or a lack of understanding about life-sustaining treatment [10]. This suggests a need to broaden the scope of studies to include end-of-life patients and their families. Moreover, communication skills have been reported as crucial for advocating for patients and assisting patients and their families in making decisions about life-sustaining treatment [13]. Inadequate communication was identified as a barrier to end-of-life care, and a lack of interaction with patients or their families could lead to difficulties in managing the symptoms of dying patients [9]. In other countries, evidence-based practice guidelines have been developed for nurses to provide high-quality end-of-life care. These guidelines encompass clinical practices, training, organizational measures, and policies. Specifically, clinical practices include the assessment of dying patients, support for patients and their families in decision-making, treatment, and management [14]. However, in South Korea, there is a lack of studies on nurses' perceptions and performance of end-of-life care, including communication with dying patients and their families.

Therefore, this study aimed to investigate the perception and performance of end-of-life care of nurses in tertiary hospitals and to analyze the correlation between them to provide a basis for developing educational programs for high-quality end-of-life care performance.

2. Purpose

The objective of this study was to investigate the perception and performance of end-of-life care of nurses and to analyze the correlation between them. The specific objectives were as follows.

First, to identify nurses' perception and performance of end-of-life care

Second, to assess differences between nurses' perception and performance of end-of-life care according to their general characteristics

Third, to analyze the correlation between nurses' perception and performance of end-of-life care

METHODS

1. Study design

This cross-sectional descriptive study was conducted to assess the perception and performance of end-of-life care

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among nurses in a tertiary hospital, and to analyze the correlation between these variables.

2. Participants

The participants of this study were nurses employed in departments with a high frequency of deaths, including wards and intensive care units (ICUs), at a tertiary hospital in Seoul. Eligible participants had a minimum of 6 months' work experience, had at least one instance of providing end-of-life care, understood the study's objectives, and voluntarily agreed to participate. The sample size was determined using the G*Power program version 3.1.9.2. Based on a multiple regression analysis with an effect size of 0.2, a significance level (α) of 0.05, and a power ($1-\beta$) of 0.95, the required sample size was calculated to be 319. To account for a potential 10% dropout rate, the questionnaire was distributed to 360 individuals. After excluding 39 questionnaires due to insufficient responses, the final data analysis was conducted using 321 responses.

3. Study tools

The study was conducted to investigate nurses' perception and performance of end-of-life care. We developed a scale to measure their perception and performance of this care, including communication with dying patients and their families. The expert group that developed the scale included a nursing professor, an oncology advanced practice nurse, a hospice nurse, a nurse with at least 10 years of experience in oncology wards, and a nurse with over 10 years of experience in ICUs. We selected the "End of Life Care During the Last Days and Hours: Clinical Best Practice Guidelines" [14] as our primary reference. From this, we constructed 29 preliminary survey items, taking into account relevant guidelines [15-17]. An expert group of eight members then assessed these preliminary items to validate their content validity index (CVI). This group included a hospice palliative care doctor, a hospice nurse, a nursing professor, a head nurse in an oncology ward, a head nurse in an ICU, a nurse with at least 10 years of clinical experience in an oncology ward, a nurse in a surgical ward, and a nurse in an ICU. The experts rated the items on a 4-point Likert scale, ranging from "not valid at all" (1 point) to "very valid" (4 points). They were also asked to provide feedback if any item was unclear or needed corrections. In the first assessment, the total CVI for all items was 0.89. Four out of five items with a CVI below 0.8 were revised. For example, the term "hydration" was replaced with "dehydration" for clarity, and "determining" an effective administration route was changed to "confirming" to reflect the need for consultation with an attending physician. After these corrections, the total number of items was reduced to 28. A second validity assessment yielded a CVI value of 1.0. As a result, the study tool was finalized with 28 items across three subscales: assessment (11 items), communication (4 items), and plan and implementation (13 items). This tool was used to evaluate the perception and performance of end-of-life care, with responses measured on a 4-point Likert scale. The scores ranged from 28 to 112.

1) Perception of end-of-life care

The perception of end-of-life care was evaluated using a 28-item questionnaire divided into three subscales. Responses were recorded on a 4-point Likert scale, with "strongly disagree" scoring 1 point, "disagree" scoring 2 points, "agree" scoring 3 points, and "strongly agree" scoring 4 points. A higher total score signifies a more positive perception of end-of-life care. The Cronbach's α for this measurement was 0.92, indicating high reliability.

2) Performance of end-of-life care

The performance of end-of-life care was assessed using identical items to those used for the perception of end-of-life care. These items were rated on a 4-point Likert scale, with "not performing at all" scoring 1 point, "not performing" scoring 2 points, "performing" scoring 3 points, and "always performing" scoring 4 points. A higher score signifies a higher level of performance in end-of-life care. The Cronbach's α for this scale was 0.91.

4. Data collection and ethical considerations

This study was conducted after obtaining approval from the institutional review board of the institution (IRB No. 2021-0362) and from the nursing department for data collection. The researchers personally distributed questionnaires to departments that frequently deal with patient deaths. Participants were informed about the study's purpose and gave their vol-

untary consent to participate. They were also assured that they could withdraw their participation at any time. The survey was self-administered, and participants received small rewards upon completion. To ensure privacy, personally identifiable information was removed and participants were assigned random numbers. The raw data collected were securely stored in a double-locked location, accessible only to the principal researcher.

5. Data analysis

The collected data were analyzed using SPSS for Windows, version 24.0. We examined the general characteristics of the participants, as well as their perception and performance of end-of-life care, using frequency, percentage, mean, and standard deviation. We analyzed the perception and performance of end-of-life care in relation to the participants' general characteristics using the independent sample t-test and one-way analysis of variance (ANOVA), supplemented by the Scheffé post-hoc test. The relationship between the nurses' perception and performance of end-of-life care was analyzed using Pearson correlation coefficients.

RESULTS

1. Participants' general characteristics

Out of the total 321 participants, 96.6% (n=310) were female. The average age was 29.2±5.37, with the majority (n=211, 65.7%) falling between the ages of 23 and 29. The majority were unmarried (n=242, 75.4%) and held a bachelor's degree (n=270, 84.4%). Additionally, 42.4% (n=136) identified as religious. The average length of their total clinical career was 6.13±5.34 years, with the majority (n=178, 55.5%) having less than 5 years of experience. The average length of their clinical career in their current department was 3.84±3.30 years, with the majority (n=240, 74.8%) having less than 5 years of experience. Of the participants, 222 (69.2%) worked in wards and 99 (30.8%) in ICUs. Among these, 23.7% (n=76) had received education for end-of-life care, and 91.6% (n=294) had experienced the death of a patient they were caring for within the last 6 months. The majority of these (n=219, 74.5%) had experienced between 1 and 5 deaths during this period. Seventy-three participants (22.7%) had experienced the death of family members, relatives, or acquaintances within the past year (Table 1).

Table 1. General Characteristics of Participants (N=321).

Characteristics	n (%) or Mean±SD
Sex	
Female	310 (96.6)
Male	11 (3.4)
Age (yr)	29.2±5.37
23~29	211 (65.7)
30~39	87 (27.1)
40~49	23 (7.2)
Marital status	
Married	79 (24.6)
Unmarried or other	242 (75.4)
Religious status	
Yes	136 (42.4)
No	185 (57.6)
Education level	
Diploma	9 (2.8)
Bachelor	270 (84.4)
Master	41 (12.8)
Total clinical career (yr)	6.13±5.34
<5	178 (55.5)
5~<10	80 (24.9)
10~<15	30 (9.3)
≥15	33 (10.3)
Current clinical career (yr)	3.84±3.30
<5	240 (74.8)
5~<10	59 (18.4)
≥10	22 (6.9)
Unit type	
Ward	222 (69.2)
ICU	99 (30.8)
Participation in education for end-of-life care	
Yes	76 (23.7)
No	244 (76.0)
Patient deaths overseen within the last 6 months	
Yes	294 (91.6)
No	27 (23.7)
The number of patient deaths overseen within the last 6 months*	
1~5	219 (74.5)
6~10	55 (18.7)
≥11	20 (6.8)
Experiences of death of family members, relatives, and acquaintances within the past year	
Yes	73 (22.7)
No	248 (77.3)

ICU: Intensive care unit, *n=294.

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2. Perception and performance of end-of-life care

The mean score for the perception of end-of-life care was 3.23±0.34 out of a possible 4 points. The subscale scores were as follows: 3.19±0.34 for assessment, 3.17±0.47 for communication, and 3.28±0.38 for plan and implementation. The average performance score for end-of-life care was 3.08±0.34. The subscale scores for performance were 3.07±0.36 for assessment, 2.99±0.48 for communication, and 3.13±0.38 for plan and implementation.

Among the items on perception of end-of-life care, "Identify whether or not a dying (or end of life) patient has completed a legal form related to life-sustaining treatment" showed the highest score (3.62±0.50), followed by "Provide physical care

Table 2. Perception and Performance of End-of-Life Care (N=321).

Items	Perception of end-of-life care	Performance of end-of-life care
	Mean±SD	Mean±SD
Subscale 1. Assessment		
1. Identify individuals who are in the last days and hours of life.	3.39±0.49	3.28±0.49
2. Assess the physical, psychological, social, and spiritual needs of dying (or the end of life) patients comprehensively.	3.07±0.52	2.89±0.59
3. Assess the clinical symptoms and signs of dying (or the end of life) patients.	3.49±0.51	3.38±0.54
4. Assess the dehydration status of dying (or the end of life) patients.	2.84±0.61	2.76±0.67
5. Assess suicidal ideation in dying (or end of life) patients.	2.46±0.74	2.31±0.78
6. Regularly reassess the symptoms and nursing needs of dying (or end of life) patients.	3.31±0.55	3.23±0.58
7. Identify the decision-maker among the family members of the dying (or end of life) patients.	3.47±0.55	3.38±0.55
8. Identify the dying (or end of life) patient's usual beliefs related to the advance care planning.	3.12±0.65	2.91±0.71
9. Identify the family's beliefs related to the advance care planning.	3.16±0.61	2.97±0.66
10. Identify whether or not a dying (or end of life) patient has completed a legal form related to life-sustaining treatment.	3.62±0.50	3.59±0.51
11. Reflect on and be aware of one's own attitudes and feelings about death.	3.22±0.62	3.11±0.64
Subtotal	3.19±0.34	3.07±0.36
Subscale 2. Communication		
12. Understand and apply the basic principles of communication in end-of-life care.	3.19±0.54	3.10±0.57
13. Actively communicate with medical staff about hospice treatment for dying (or end of life) patients.	3.13±0.63	2.95±0.66
14. Support dying (or end of life) patients and their families to communicate with medical staff.	3.30±0.55	3.15±0.55
15. Collaborate with experts in various fields such as hospice teams and social welfare teams as part of providing nursing care for dying (or end of life) patients	3.03±0.72	2.76±0.79
Subtotal	3.17±0.47	2.99±0.48
Subscale 3. Plan and implementation		
16. Include family members in treatment plans for dying (or end of life) patients.	3.42±0.54	3.28±0.58
17. Provide information on the risks and benefits of fluid treatment for dying (or end of life) patients so that patients and their families can participate in treatment decisions.	3.11±0.67	2.93±0.74
18. Provide physical care including oral care and position change to dying (or end of life) patients.	3.52±0.52	3.51±0.54
19. Educate dying (or end of life) patients and their families on their symptoms and coping method.	3.20±0.65	3.00±0.75
20. Identify the most effective route of drug administration for dying (or end of life) patients.	3.34±0.54	3.32±0.55
21. Practice pharmacologic interventions for symptoms including pain in dying (or end of life) patients.	3.50±0.52	3.46±0.52
22. Practice non-pharmacological interventions for symptoms including pain for dying (or end of life) patients.	3.12±0.63	2.86±0.67
23. Review the medications currently used by dying (or end of life) patients and identify drug interactions and polypharmacy.	3.09±0.64	2.96±0.71
24. Avoid undertaking tests that are unlikely to affect care in the last few days of life unless there is a clinical need to do	3.45±0.56	3.27±0.65
25. Support the anxiety and fear of dying (or end of life) patients and their families.	3.39±0.54	3.17±0.64
26. Refer to clergy or provide spiritual care according to the spiritual needs of dying (or end of life) patients and their families.	2.76±0.83	2.21±0.79
27. Document assessments and nursing intervention about dying (or end of life) patient care.	3.39±0.59	3.34±0.66
28. Explain and support the post-care process to the family of a dying patient.	3.40±0.57	3.35±0.60
Subtotal	3.28±0.38	3.13±0.38
Total	3.23±0.34	3.08±0.34

including oral care and position change to dying (or end of life) patients" (3.52±0.52) and "Practice pharmacologic intervention for symptoms including pain in dying (or end of life) patients" (3.50±0.52). "Assess suicidal ideation in dying (or end of life) patients" (2.46±0.74) showed the lowest score, followed by "Refer to clergy or provide spiritual care accord-

Table 3. Differences in Perception and Performance of End-of-Life Care according to General Characteristics of Participants (N=321).

Characteristics	Perception of end-of-life care		Performance of end-of-life care	
	Mean±SD	t or F (P)	Mean±SD	t or F (P)
Sex				
Female	3.23±0.34	0.20 (0.842)	3.08±0.34	-0.50 (0.621)
Male	3.21±0.33		3.13±0.37	
Age (yr)				
23~29	3.24±0.32	0.25 (0.776)	3.09±0.34	0.18 (0.838)
30~39	3.23±0.38		3.07±0.35	
40~49	3.18±0.37		3.07±0.34	
Marital status				
Married	3.23±0.39	-0.10 (0.921)	3.07±0.35	0.29 (0.771)
Unmarried or other	3.23±0.23		3.09±0.34	
Religious status				
Yes	3.25±0.34	0.93 (0.353)	3.11±0.34	0.99 (0.324)
No	3.22±0.34		3.10±0.34	
Education level				
Diploma	3.16±0.24	0.72 (0.489)	3.04±0.36	0.21 (0.815)
Bachelor	3.23±0.34		3.08±0.34	
Master	3.28±0.36		3.11±0.34	
Total clinical career (yr)				
<5	3.24±0.32	0.31 (0.818)	3.10±0.34	0.57 (0.637)
5~<10	3.21±0.35		3.05±0.33	
10~<15	3.29±0.43		3.08±0.41	
≥15	3.20±0.36		3.05±0.31	
Current clinical career (yr)				
<5	3.23±0.33	1.46 (0.235)	3.09±0.34	1.58 (0.207)
5~<10	3.20±0.36		3.02±0.35	
≥10	3.35±0.41		3.17±0.36	
Unit type				
Ward	3.26±0.34	1.91 (0.058)	3.11±0.35	2.18 (0.026)
ICU	3.18±0.34		3.02±0.32	
Participation in education for end-of-life care				
Yes	3.25±0.37	0.61 (0.542)	3.13±0.34	1.41 (0.160)
No	3.22±0.33		3.07±0.34	
Patient deaths overseen within the last 6 months				
Yes	3.24±0.34	2.23 (0.045)	3.09±0.34	1.92 (0.056)
No	3.09±0.36		2.96±0.34	
The number of patient deaths overseen within the last 6 months*				
1~5	3.23±0.33	1.41 (0.245)	3.07±0.33	2.88 (0.058)
6~10	3.27±0.34		3.16±0.34	
≥11	3.35±0.40		3.22±0.42	
Experiences of death of family members, relatives, and acquaintances within the past year				
Yes	3.23±0.33	-0.04 (0.968)	3.09±0.34	-0.21 (0.838)
No	3.23±0.34		3.08±0.34	

ICU: Intensive care unit, *n=294.

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Table 4. Relationships between the Perception and Performance of End-of-Life Care (N=321).

Variables	Perception of end-of-life care			
	Total	Assessment	Communication	Planning and implementation
	r (P)	r (P)	r (P)	r (P)
Performance of end-of-life care				
Total	0.78 (<0.001)	0.70 (<0.001)	0.62 (<0.001)	0.75 (<0.001)
Assessment	0.70 (<0.001)	0.74 (<0.001)	0.53 (<0.001)	0.60 (<0.001)
Communication	0.62 (<0.001)	0.53 (<0.001)	0.69 (<0.001)	0.54 (<0.001)
Planning and implementation	0.75 (<0.001)	0.56 (<0.001)	0.53 (<0.001)	0.77 (<0.001)

ing to the spiritual needs of dying (or end of life) patients and their families" (2.76±0.83) and "Assess the dehydration status of dying (or the end of life) patients" (2.84±0.61).

Among the items on performance of end-of-life care, "Identify whether or not a dying (or end of life) patient has completed a legal form related to life-sustaining treatment" also showed the highest score (3.59±0.51), followed by "Provide physical care including oral care and position change to dying (or end of life) patients" (3.51±0.54) and "Practice pharmacologic intervention for symptoms including pain in dying (or end of life) patients" (3.46±0.52). "Refer to clergy or provide spiritual care according to the spiritual needs of dying (or end of life) patients and their families" (2.21±0.79) showed the lowest score, followed by "Assess suicidal ideation in dying (or end of life) patients" (2.31±0.78), "Assess the dehydration status of dying (or the end of life) patients" (2.76±0.67), and "Collaborate with experts in various fields such as hospice teams and social welfare teams as part of providing nursing care for dying (or end of life) patients" (2.76±0.79) (Table 2).

3. Differences between perception and performance of end-of-life care according to participants' general characteristics

The participants' perception of end-of-life care showed a significant difference according to the number of patient deaths they had overseen in the past six months (t=2.23, P=0.045). There were no significant differences according to other characteristics.

The participants' performance of end-of-life care showed a significant difference according to unit type (t=2.18, P=0.026). There were no significant differences in other characteristics (Table 3).

4. Correlations between perception and performance of end-of-life care

A significant positive correlation (r=0.78, P<0.001) was found between the perception and performance of end-of-life care, indicating that nurses with a higher understanding of end-of-life care demonstrated superior performance in this area. The perception of end-of-life care was significantly positively correlated with three subscales: assessment (r=0.70, P<0.001), communication (r=0.62, P<0.001), and planning and implementation (r=0.75, P<0.001). Similarly, the performance of end-of-life care also had significant positive correlations with the same three subscales: assessment (r=0.70, P<0.001), communication (r=0.62, P<0.001), and planning and implementation (r=0.75, P<0.001) (Table 4).

DISCUSSION

The study investigated nurses' perception and performance of end-of-life care in tertiary hospitals, as well as the correlation between these two variables. A tool was developed as part of the study, which included elements of communication with dying patients and their family members. The aim was to provide a foundation for the development of future educational programs designed to enhance the quality of end-of-life care.

Previous tools used to evaluate nurses' performance in end-of-life care were either patient-centered or incorporated some family members [10,12]. However, given that the obstacles to providing end-of-life care were identified as the patients and their family members [10] and inadequate communication [9], this study developed a scale to measure the perception and performance of end-of-life care, including communication

with terminally ill patients and their families. The scale developed in this study may require validation in the future. In this study, the average score for the perception of end-of-life care was 3.23±0.34 out of 4. This suggests that the perception of end-of-life care among nurses working in departments with a high mortality rate in a tertiary hospital is above average. According to a study that investigated hospital nurses' perception of end-of-life care [18], nurses felt that witnessing patients' deaths allowed them to find a deeper meaning in life, and more exposure to death correlated with improved end-of-life care performance. However, the participants in this study were nurses working in departments with high mortality rates. Furthermore, the hospital involved in this study was a tertiary hospital where patients in wards were critically ill, and nurses were responsible for both acute and dying patients simultaneously. The findings of this study may reflect the conditions of this clinical field where nurses frequently encounter death as an inevitable part of their work.

Among the items on the perception of end-of-life care, high scores were found for identifying legal forms related to life-sustaining treatment and providing physical care and pharmacologic interventions for symptoms, including pain. This suggests that nurses comprehend patients' wishes by identifying legal documents related to life-sustaining treatment, in line with the Act on Decisions on Life-Sustaining Treatment [19]. They also recognize the significance of pain management and pharmacological intervention for symptom control. Conversely, nurses' understanding of evaluating patients' suicidal ideation, providing spiritual care, and assessing dehydration status was found to be low.

The perception of end-of-life care, according to the general characteristics of participants, was significantly influenced by whether nurses had experienced the death of a patient under their care within the past six months. In clinical environments, patient deaths present emotional challenges, and an inadequate response to these deaths can potentially diminish the quality of end-of-life care [20]. It can be inferred that a patient's death serves as a catalyst for nurses to contemplate the significance of end-of-life care. Contrary to a previous study [11], participation in end-of-life care education did not significantly alter the perception of end-of-life care. This outcome may be attributed to the fact that only 23.7% of the nurses in this study had received education about end-of-life care. Moreover, over half of the nurses (55.5%) in this study had less than five years of clinical experience, suggesting that their education may have focused more on disease and treatment rather than end-of-life care. The lack of knowledge and skills regarding end-of-life care is a major stressor in providing such care [6]. Therefore, it is believed that enhancing the understanding of end-of-life care and fostering positive changes through education can improve the quality of end-of-life care.

In this study, the mean score of performance of end-of-life care was 3.08±0.34 out of 4, indicating a performance level above the mid-point of the scale. The highest scoring items in the end-of-life care performance included identifying legal forms related to life-sustaining treatment, providing physical care such as oral care and position changes, and implementing pharmacological interventions for symptoms including pain. Nurses prioritized the identification of legal forms related to life-sustaining treatment, in line with the Act on Decisions on Life-Sustaining Treatment [19]. Additionally, it was observed that symptom management for dying patients was actively practiced in this study, with the predominant use of opioids, antiulcer drugs, sedatives, and anxiolytics [21].

Meanwhile, low performance scores were found for referring to clergy, providing spiritual care, assessing patients' suicidal ideation, assessing dehydration status, and collaborating with experts in other fields showed low scores, mirroring the findings for perception scores. This result aligns with previous studies [10,22], which reported that end-of-life care focused on physical care such as alleviating symptoms and spiritual care was less frequently performed due to time constraints. Therefore, end-of-life care education programs should emphasize the importance of spiritual care and provide guidance on how to implement it [10,22]. For a holistic approach to patient care at the end of life, it is crucial to assess the spiritual needs of dying patients, enhance spiritual care, which includes visits from religious individuals, and encourage prayer to shift the perception of spiritual care.

Cancer patients are at a high risk of suicide due to depression, anxiety, delirium, despair from recurrence, metastasis, disease progression, and unmanageable pain [23]. As a result, international guidelines recommend evaluating a patient's history of suicide attempts [16]. Patients should be assessed with

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a focus on their spiritual well-being, and consultations with mental health professionals should be arranged when necessary. Although hydration has not been shown to extend the survival of cancer patients or significantly improve dehydration symptoms, it does impact the quality of end-of-life care [24]. The assessment of a patient's dehydration status is considered a crucial aspect of end-of-life care, yet this study found that its importance and implementation were undervalued. Therefore, it is recommended that the assessment of dehydration status be incorporated into physical care to enhance the quality of end-of-life care.

The performance of end-of-life care was significantly higher among nurses in general wards compared to those in ICUs. This finding contradicts previous studies that found no significant differences between internal/surgical wards and ICUs [25], and similar levels in oncology departments and ICUs, with a higher level observed in emergency departments [11]. Unlike these earlier studies, the scale used in our research incorporated items related to family assessment and communication. This discrepancy might be due to the challenges faced by patients and their families in participating in care, given the severity of the patients' conditions [26]. The transition in therapies for critically ill patients, from aggressive and invasive interventions to more palliative approaches, can lead to ethical dilemmas. These dilemmas may stem from misunderstandings, conflicts, ethical distress, and decisions about withholding or withdrawing life-sustaining treatment [26]. Therefore, it is crucial to identify cultural and social factors that may cause conflicts between patients and their families. This will allow families to participate in decision-making processes at an early stage and spend time with their dying loved ones [26]. Systematic end-of-life care strategies, such as advance care planning, can alleviate negative feelings associated with death, such as stress, anxiety, and depression, in elderly patients and their families. This approach can also positively impact the patients' remaining life [27]. Moreover, it can help reduce the stress and burden experienced by nurses in emergency rooms, ICUs, and oncology wards, who frequently deal with death [11]. In Korea, clinical practice guidelines for end-of-life care in general wards recommend providing necessary information and evaluating family care [28]. Therefore, appropriate interventions involving both dying patients and their families should be implemented.

In this study, a higher perception of end-of-life care was associated with better performance of end-of-life care, a finding that aligns with previous research [11]. Thus, enhancing nurses' performance in end-of-life care necessitates a shift in their perception of this type of care. Nurses often suppress their emotions and focus on their duties, as becoming emotionally invested in a dying patient can hinder their ability to concentrate on their work. This emotional distancing can lead to a passive approach when establishing relationships with terminally ill patients. However, nurses have expressed a variety of views on end-of-life care, including a desire for further education to improve the quality of care they provide, and finding personal growth and meaning in a patient's death [17]. In intensive care units, nurses' perceptions of life-sustaining treatment at the end of life are varied. Some view it negatively, associating it with patient suffering, death without dignity, isolation from family, regret over life-sustaining treatment, and family burden. Conversely, others view it positively, focusing on the patient and their family's will to survive, and the duty to the family [29]. The most significant factor influencing nurses' performance in end-of-life care is a positive shift in their perception of this care. Despite the critical role nurses play in involving patients and their families in treatment planning and providing necessary advice, there is a lack of systematic education about end-of-life care [13,20]. Departments with high mortality rates should provide comprehensive education about end-of-life care, including for new nurses, to foster positive attitudes towards this type of care.

Nurses in tertiary hospitals increasingly provide care to patients in severe conditions and those who are unable to recover. As their experience grows, they naturally develop strategies to cope with patient death. However, systematic education about death, bereavement care, and grief counseling could offer more effective support for nurses dealing with death. These measures could also promote professional growth, reduce anxiety and stress related to death, and improve mental health and job satisfaction. Ultimately, this could enhance the quality of nursing care provided to dying patients and their family members [20].

This study surveyed nurses in a tertiary hospital and developed a scale to measure nurses' perception and performance of end-of-life care. Preliminary items were constructed based on

recent guidelines and validated by relevant experts. However, the results may not be generalizable due to the lack of a Delphi survey or preliminary survey. Additionally, the study used identical items to assess both the perception and performance of end-of-life care, albeit with different response options. This approach resulted in high correlations between the two areas, but it may have influenced the participants' responses. Despite these limitations, the study was significant in that it confirmed an end-of-life care process that includes assessing the symptoms and needs of dying patients, communicating with family members, providing physical care, and implementing pharmacological and non-pharmacological interventions. These findings can be used to develop educational content about end-of-life care. The study also highlighted the need for end-of-life care education programs that encompass the assessment of dehydration status, mental status (including suicidal ideation), and the provision of spiritual care. Nurses are experiencing significant stress and challenges in providing end-of-life care [13], and are calling for individual and organizational support. However, current support and related education are inadequate. Therefore, ongoing efforts are required to address the challenges nurses face in end-of-life care through further research in the future.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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AUTHOR'S CONTRIBUTIONS

Conception or design of the work: all authors. Data collection: SYJ, HSS, JYK, HJK. Data analysis and interpretation: all authors. Drafting the article: SYJ, JHK. Critical revision of the article: SYJ, JHK. Final approval of the version to be published: all authors.

SUPPLEMENTARY MATERIALS

Supplementary materials can be found via https://doi.org/10.14475/jhpc.2023.26.3.101.

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