



Health Personnel's Knowledge, Attitudes, and Self-Efficacy Related to Providing Palliative Care in Persons with Chronic Diseases

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Purpose: The purpose of this study was to examine the relationships of knowledge, attitudes, and self-efficacy related to palliative care among health care providers (doctors and nurses) in order to provide a basis to develop a training program for health care providers.

Methods: A correlational and descriptive study design was used. Participants were recruited from a university-affiliated hospital located in Daejeon and an e-nurse community. After IRB approval, data were collected from July 12, 2018, to September 30, 2018. A total of 169 responses were finally analyzed using version SPSS 24. The data were analyzed in terms of descriptive statistics (frequency and percentage or mean and standard deviation, as appropriate), the t-test, analysis of variance (with the Duncan *post hoc* test), and Pearson correlation coefficients. **Results:** Knowledge, attitudes, and self-efficacy were significantly higher in those who had received palliative care training or had been exposed to awareness-raising initiatives. There were positive relationships among knowledge, attitudes, and self-efficacy, with small to moderate effect sizes. **Conclusion:** Palliative care training for health care professionals is necessary to meet patients' needs. Such programs should take into account not only knowledge about palliative care, but also ways to improve empathy and resolve ethical dilemmas. Interprofessional training would be an excellent option to share therapeutic goals and develop communication skills among multidisciplinary team members.

Key Words: Chronic disease, Palliative care, Health personnel

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INTRODUCTION

1. Background

State-of-the-art science and advanced medical technology have enabled life extension to a degree that was not possible in the past. However, failing to consider the patient's choice and quality of life when making decisions about life-sustaining

treatment is tantamount to depriving the patient of his or her right to death with dignity as a human being, and also places a financial burden on the family due to the high medical costs and psychological stress associated with long-term, unending caregiving and exposes the medical staff to legal, psychological, and ethical dilemmas [1].

Palliative care is a professional health care service aimed at relieving the physical, psychological, social, and spiritual dis-

tress of patients with intractable diseases and their families by providing medical interventions for symptom and pain relief, information on treatment options, support, and welfare services [2,3]. Palliative care helps to reduce anxiety regarding disease-related pain and death and may allow patients to make the most of the rest of their life [2,3]. In Korea, the term “palliative care” has been used interchangeably with “hospice care” or “end-of-life care”, and has been provided mainly to patients at the end of life in the dying process or with terminal cancers, whereas in many advanced countries, including the US, palliative care is subdivided into three levels and is also offered to patients with advanced chronic diseases and their family members [2-4].

Primary palliative care refers to providing information on the status and progression of a disease to patients with intractable diseases and their families, guidance on community resources or services available in the event of exacerbation, and education on the need to carry out advance care planning so that patients and their families can proactively prepare for the painful family event that they will experience in the future [2]. That is, primary palliative care includes the provision of education and services to help patients make medical treatment decisions in advance (including life-sustaining treatment), improve their spiritual well-being, and “prepare for the end of life on [their] own terms” [2]. Secondary palliative care is a team-based service provided by a team of health care providers in various environments, including residential facilities, nursing homes, and outpatient clinics, to improve the physical, mental, social, and spiritual health of patients and their families [3]. This health care service may be included as part of community care, which the Korean government is keen on establishing. Secondary palliative care encompasses exploring local resources to improve the quality of life of patients and their families and establishing targeted care coordination to deliver organized health care, nursing, and welfare services, as well as providing medical service, treatment, and nursing to relieve patients' pain and symptoms [3]. Tertiary palliative care consists of nursing for pain relief (i.e., management of pain and symptoms in extremely stressful situations that threaten physical, mental, social, and spiritual health), reducing fear of death, and supporting bereaved families [3,5]. Hospice care and end-of-life palliative care, which are currently provided

in Korea for terminally ill, dying, and cancer patients, are forms of tertiary palliative care.

Despite the recognition of the need to provide palliative care to patients with advanced chronic diseases, health professionals may be hesitant to do so due to the absence of palliative care protocols for chronic disease patients [6], limited experience of receiving palliative care education [7], and the difficulty of determining when to discuss preparation for death, as the prognosis (direction, speed, etc.) of chronic diseases is relatively unpredictable, unlike that of terminal cancers [6]. Furthermore, medical professionals tend to consider death solely as the result of diagnostic misclassification or failure of the prescribed treatment [8]. In particular, young health personnel often regard death as a challenge to overcome as a human being, which may be another major reason behind their hesitation [9].

According to the Annual Report on the Life-Sustaining Decision-Making System of the Korea National Institute for Bioethics Policy [10], since the passage of the Act on Decisions on Life-Sustaining Treatment, the number of adults (age 19 years or over) with an advance directive increased 10-fold from 7,637 in 2017 to 93,395 in 2018. More women (67.5%) than men (32.5%) had advance directives, and their age ranged from 20 years to nearly 100 years. The largest number of people were in their 70s (43.4%), followed by other older age groups, including those in their 60s (23.4%), 80s (17.2%), and 90s (0.8%). Although the senior age groups accounted for the largest proportion of adults with advance directives, some adults in younger age groups, including those in their 20s~50s, were also found to have advance directives (10.4%, 3.6%, 0.8%, and 0.4% of those in their 50s, 40s, 30s, and 20s, respectively). The largest proportion of people with advance directives was found to reside in Seoul (26.3%). The registration rates were much higher at community institutions such as public institutions (50.8%), non-profit corporations or organizations (30.0%), and local health care clinics (8.3%) than at medical institutions (10.8%). This underscores the need for medical professionals to understand the needs of community-dwelling chronic disease patients near the end of life, who wish to maintain their dignity and quality of life until the moment of death while reducing burdens on their families, as well as providing hospice palliative care for hospitalized terminally ill

patients [11] and building capacity to provide and support appropriate palliative care (e.g., primary palliative care).

This study was conducted under the hypothesis that accurate and up-to-date knowledge of palliative care among health personnel would help them cultivate a positive attitude and enhance self-efficacy in the provision of palliative care to patients with chronic diseases other than cancer nearing the end of life. The results of this study will be used as basic data for developing health professional education on the provision of primary palliative care to patients with advanced chronic diseases.

2. Purpose

The purpose of this study was to obtain basic data for developing programs to train health personnel to provide primary palliative care to community-dwelling patients with advanced chronic diseases other than cancer. In this study, we investigated health personnel's knowledge, attitude, and self-efficacy related to plans that help patients determine treatment decisions (referred to "advance care planning" in this study to distinguish it from "advance directives", which are implemented under the Act on Decisions on Life-Sustaining Treatment). The specific objectives were as follows:

- 1) To determine health personnel's knowledge, attitude, and self-efficacy related to palliative care according to sociodemographic characteristics.
- 2) To compare health personnel's knowledge, attitude, and self-efficacy related to palliative care according to their responses to specific questions.
- 3) To compare health personnel's knowledge, attitude, and self-efficacy according to their experience in palliative care.
- 4) To identify correlations between health personnel's knowledge of palliative care, attitude, and self-efficacy.

METHODS

1. Study design

This descriptive study was designed to identify the levels of and correlations between health personnel's knowledge, attitudes, and self-efficacy related to advance care planning (primary palliative care), which helps patients with chronic

diseases make treatment decisions in advance.

2. Study participants

The study participants were health personnel (physicians and nurses) who were engaged in or expected to provide palliative care to patients with chronic diseases. An appropriate sample size was calculated using G*Power version 3.0.10. The power analysis was set at 80% with Cohen's $r=0.23$ (a small to medium effect), an alpha of 0.05 (two-tailed), and a population correction (ρ) of 0. The calculated sample size was 146, but we recruited 186 participants, considering a possible dropout rate of approximately 25%.

3. Research tool

Due to the absence of prior research on advance care planning for patients with advanced chronic disease and a standardized questionnaire, the first author developed a preliminary draft questionnaire based on prior studies on hospice care for the elderly or terminally ill patients and discussions with professionals who provide life-sustaining treatment in clinical settings (physicians, nurses, and social workers). The research team sought feedback from a group of three experts (one physician and two nurses) in two separate sessions to confirm the construct validity of the research tool [12]. Furthermore, face validity was verified by undergraduates and graduate nursing students. The survey questionnaires consisted of: 1) sociodemographic characteristics and palliative care experience and 2) knowledge related to advance care planning, attitudes toward advance care planning, and self-efficacy related to the discussion of advance care planning.

1) Sociodemographic characteristics and palliative care experience

In this section, there were nine questions on sociodemographic characteristics and nine questions on palliative care experience. The questions included whether participants had experienced situations in which family members or close acquaintances had experienced or died from cancer or non-cancerous diseases, whether they had received education or been exposed to awareness-raising initiatives regarding life-sustaining treatment, and whether they had heard of advance directives or advance care planning. Referring to the question-

naire developed by Jezewski et al. [13] and revised by Kim [14], we devised a questionnaire including additional questions on the study participants' experiences of providing palliative care to patients with cancer or non-cancerous diseases or to their family members, such as explaining policies or procedures related to advance directives or advance care planning, discussing how to carry out advance care planning, and offering care.

2) Knowledge, attitudes, and self-efficacy of health personnel related to providing palliative care

Health personnel's knowledge, attitudes, and self-efficacy regarding the provision of palliative care were assessed in terms of their knowledge of advance care planning, their attitudes toward advance care planning, and their self-efficacy related to discussions about advance care planning.

(1) Knowledge of advance care planning

Health personnel's knowledge of the provision of palliative care was assessed with a 15-item questionnaire developed by the first author, referring to a questionnaire devised by Hong and Kim [15] to evaluate the level of knowledge of treatment in the dying process, life-sustaining treatment, and advance directives for elderly living in a community. The preliminary draft consisted of 15 knowledge assessment questions, including nine of 10 questions from Hong and Kim's questionnaire and six questions added by the author. Based on the first round of feedback from three experts, two questions were integrated into one and one question was added to the questionnaire. Subsequently, upon receiving the second round of feedback, the research team revised seven questions and finalized the 15-item questionnaire. Considering the purpose of the study, we focused on providing the medical information required for life-sustaining treatment and advance care planning for patients with advanced chronic diseases and added questions on knowledge related to the Act on Decisions on Life-Sustaining Treatment. The highest score of the questionnaire was 15 points, with 1 point awarded for the correct answer and 0 points for an incorrect answer. The Kuder-Richardson 20 coefficient for the reliability of the research tool was 0.612.

(2) Attitudes toward advance care planning

Health personnel's attitudes toward the provision of pallia-

tive care were assessed by a 14-item questionnaire, which was developed by the first author by referring to the questionnaire developed by Jezewski et al. [13] and modified by Kim [14] and taking into account the implementation of the Act on Decisions on Life-Sustaining Treatment in 2018. In the original questionnaire, 20 questions were asked about attitudes toward advance directives and end-of-life issues; however, the research team utilized only nine questions that were considered appropriate, as the current study was intended for patients near the end of life, not at the end of life. Subsequently, based on the first round of feedback from three experts, the draft questionnaire was revised to include 10 questions by adding one question and modifying four questions. Based on the second round of expert review, five questions were added and one similar question was deleted, leading to a 14-item questionnaire. The answers were rated using a 4-point Likert scale, ranging from "not at all desirable" (1 point) to "very desirable" (4 points). Higher scores indicated more desirable attitudes. The reliability of the questionnaire as a research tool assessed using the Cronbach's α coefficient was 0.867.

(3) Self-efficacy related to discussions about advance care planning

The self-efficacy of health personnel for the provision of palliative care was assessed using a questionnaire developed by the first author by referring to the self-efficacy questionnaire devised by Jezewski et al. [13] and modified by Kim and Kim [14]. The draft questionnaire consisted of 30 questions, and was formulated based on the results of interviews conducted by the researcher on perceptions of advance care planning among patients with chronic diseases other than cancer [16] and 11 items consisting of a 5-point scale included in the original tool. Referring to the first round of review by three experts, we modified the content and adopted a 4-point scale. Upon receiving the second round of feedback, we deleted 10 questions related to advance directives. Thus, the final version of the questionnaire included 20 questions, which were scored from 1 point for "not at all confident" to 4 points for "very confident". Higher scores indicated higher self-efficacy. The Cronbach's α coefficient for the reliability of the research tool was 0.977.

4. Data collection and data analysis

The data collection period was approximately 3 months, from July 12, 2018 to September 30, 2018. The study was approved by the Institutional Ethics Committee of Chungnam National University, the College of Nursing (201804-SB-047-01), and the participants were recruited with the permission of a University Hospital and the cooperation of the relevant department head. For data collection, questionnaires with a consent form and a study purpose description form attached were distributed and completed questionnaires were collected from a collection box by the researchers, or the researchers explained the purpose of the study in person during a medical training session and requested cooperation in data collection.

The collected data were analyzed using SPSS version 24 (IBM Corp., Armonk, NY, USA). Of the total of 186 questionnaires that were collected, uncompleted ones were excluded from the analysis, including six responses with 80% of the questions on the knowledge, attitudes, and self-efficacy not answered and 11 questionnaires with many incomplete answers on sociodemographic characteristics. Using listwise deletion, we included data with one or two variables missing in the analysis; thus, the total number of questionnaires included in the final analysis was 169.

The general characteristics of the study participants are presented as frequency and percentage, and the levels of health personnel's knowledge, attitudes, and self-efficacy related to providing palliative care are presented using descriptive statistics. Differences in health personnel's knowledge, attitudes, and self-efficacy according to general characteristics were analyzed using the *t*-test and analysis of variance (with the Duncan test for *post hoc* analysis). Correlations between variables were analyzed using Pearson correlation coefficients.

RESULTS

1. Sociodemographic characteristics of participants

The sociodemographic characteristics of the participants are shown in Table 1. There were 117 (69.2%) nurses and 52 (30.8%) physicians, 136 (80.5%) participants were women, 87 (51.5%) had a 4-year college bachelor's degree, and 63 (37.3

Table 1. Participants' Socio-Demographic Characteristics (N=169).

Category	Item	n (%)
Gender	Male	32 (18.9)
	Female	136 (80.5)
	Missing data	1 (0.6)
Profession	Nurse	117 (69.2)
	Doctor	52 (30.8)
Age (yr)	Less than 30	63 (37.3)
	30~35	48 (28.4)
	35~40	25 (14.8)
	More than 40	27 (16.0)
	Missing data	6 (3.6)
Career (yr)	Less than 1	32 (18.9)
	1~5	90 (53.3)
	5~10	23 (13.6)
	More than 10	16 (9.5)
	Missing data	8 (4.7)
Department	Internal medicine	61 (36.1)
	Neurology	10 (5.9)
	Hospice	6 (3.6)
	Rehabilitation	27 (16.0)
	Surgery	20 (11.8)
	ICU, ED, anesthesiology	7 (4.1)
	Others	38 (22.4)
Education	2- or 3-year college	15 (8.9)
	4-year college	87 (51.4)
	≥Master's degree	63 (37.3)
	Missing data	4 (2.4)
Religion	Protestantism	51 (30.2)
	Buddhism	15 (8.9)
	Catholicism	19 (11.2)
	None or others	84 (49.7)
Marital status	Single	110 (65.1)
	Married	59 (34.9)
Having children	No	130 (76.9)
	Yes	39 (23.1)

ICU: intensive care unit, ED: emergency department.

%) had a master's or higher degree. The number of participants aged 24 to 34 years was 111 (65.7%), and 122 (72.2%) had 5 years or less of clinical experience. The largest number of participants worked in the department of internal medicine (n=61, 36.4%), followed by rehabilitation (n=27, 16.0%), surgery (n=20, 11.8%), neurology (n=10, 5.9%), intensive care unit/emergency department/anesthesiology (n=7, 4.1%), and hospice care (n=6, 3.6%). Fifty-nine people (34.9%) were married and 39 (23.1%) had children.

Table 2. Comparison of Mean Values of Variables for Socio-Demographic Characteristics (N=169).

Category	Item	Knowledge			Attitudes			Self-efficacy		
		Mean±SD	t or F	P*	Mean±SD	t or F	P*	Mean±SD	t or F	P*
Gender	Male	11.19±1.93	1.18	0.245	3.00±0.40	-1.94	0.054	2.35±0.61	-0.53	0.600
	Female	10.68±2.29			3.14±0.35			2.41±0.60		
	Missing data									
Profession	Nurse	10.56±2.40	-2.32	0.022	3.16±0.34	2.43	0.016	2.40±0.62	-0.21	0.831
	Doctor	11.31±1.70			3.02±0.40			2.42±0.57		
Age (yr)	Less than 30 ^a	10.54±2.25	1.26	0.291	3.06±0.34	5.48	0.001	2.41±0.60	1.97	0.121
	30~35 ^b	10.83±2.01			3.09±0.35	*a, b, c<d		2.32±0.59	*b, c<d	
	35~40 ^c	10.72±2.17			3.05±0.36			2.30±0.53		
	More than 40 ^d	11.52±2.46			3.36±0.36			2.64±0.69		
Career (yr)	Missing data									
	Less than 1 ^a	10.72±1.91	1.95	0.123	3.06±0.34	4.01	0.004	2.41±0.60	1.48	0.210
	1~5 ^b	10.56±2.33			3.09±0.35	*a, b, c<d		2.32±0.59		
	5~10 ^c	11.39±2.21			3.05±0.36			2.30±0.53		
	More than 10 ^d	11.75±1.73			3.36±0.36			2.64±0.69		
Department	Missing data									
	Internal medicine ^a	11.05±2.25	2.97	0.009	3.15±0.37	3.06	0.007	2.56±0.47	7.13	<0.001
	Neurology ^b	10.00±1.94	*a, b, d, e, f, g<c		3.22±0.34	*a, b, d, e, f, g<c		2.56±0.47	*e, f<a, b<c	
	Hospice ^c	14.00±1.10			3.66±0.25			3.40±0.44		
	Rehabilitation ^d	10.52±2.03			3.04±0.30			2.26±0.56		
	Surgery ^e	10.70±1.75			3.15±0.27			2.02±0.63		
	ICU, ED, anesthesiology ^f	10.14±1.95			3.07±0.67			1.93±0.82		
	Others ^g	10.39±2.49			3.03±0.37			2.33±0.61		
	2- or 3-year college ^a	10.87±1.30	2.27	0.106	2.97±0.29	1.36	0.260	2.25±0.44	1.12	0.328
	4-year college ^b	10.51±2.44			3.13±0.32			2.40±0.61		
Religion	≥Master's degree ^c	11.29±2.04			3.13±0.43			2.49±0.62		
	Missing data									
	Protestantism ^a	10.82±2.28	0.38	0.767	3.18±0.37	1.22	0.304	2.46±0.56	0.73	0.538
	Buddhism ^b	10.20±1.78			3.03±0.35			2.51±0.50		
	Catholicism ^c	10.89±1.91			3.17±0.37			2.47±0.71		
None or others ^d	10.85±2.36			3.08±0.37			2.34±0.62			

Table 2. Continued.

Category	Item	Knowledge			Attitudes			Self-efficacy		
		Mean±SD	torF	P*	Mean±SD	torF	P*	Mean±SD	torF	P*
Marital status	Single	10.67±2.14	-0.78	0.439	3.07±0.35	-2.49	0.014	2.40±0.61	-0.27	0.789
	Married	10.95±2.39			3.21±0.39			2.42±0.59		
Having children	No	10.61±2.20	-1.60	0.112	3.06±0.33	-3.85	<0.001	2.39±0.58	-0.72	0.474
	Yes	11.26±2.30			3.31±0.41			2.47±0.67		
Total		10.79±2.23			3.12±0.37			2.41±0.60		

*Duncan test.
ICU: intensive care unit, ED: emergency department.

2. Comparison of health personnel’s knowledge, attitudes, and self-efficacy related to providing palliative care according to sociodemographic characteristics

Table 2 shows differences in health personnel’s knowledge, attitudes, and self-efficacy related to providing palliative care according to their sociodemographic characteristics.

The average score for knowledge related to advance care planning was 10.79 ± 2.23 points among all participants. The average score was significantly higher among physicians than among nurses ($t = -2.32, P = 0.022$) and for those working in the hospice department than for those working in other departments ($F = 2.97$ and $P = 0.009$).

The average score for attitudes toward advance care planning was 3.12 ± 0.37 points. The average score was significantly higher among nurses than among physicians ($t = 2.43, P = 0.016$). In the Duncan *post hoc* analysis, the scores were significantly higher among those who were more than 40 years of age than among those who were less than 40 years old ($F = 5.48, P = 0.001$), among those who had more than 10 years of work experience than among those with less than 10 years of experience ($F = 4.01, P = 0.004$), and among those who worked in the hospice department than among those who worked in other departments ($F = 3.06, P = 0.007$). In addition, participants who were married ($t = -2.49, P = 0.014$) or had children ($t = -3.85$ and $P < 0.001$) had significantly higher scores.

Health personnel’s self-efficacy averaged 2.41 ± 0.60 points, with no significant difference between professions; the only significant differences were found between departments ($F = 7.13, P < 0.001$). The average score was significantly higher among those who worked in the hospice department than among those who worked in internal medicine and neurology, and personnel working in the latter two departments had significantly higher scores than those working in rehabilitation, surgery, intensive care unit, the emergency department, and anesthesiology.

3. Comparison of health personnel’s knowledge, attitudes, and self-efficacy regarding palliative care by item

Health personnel’s knowledge, attitudes, and self-efficacy for the provision of palliative care by item were compared, as shown in Tables 3, 4, and 5.

The average rate of correct answers for questions related to health personnel’s knowledge of palliative care was 71.9%, with the highest proportion of participants (99.4%) correctly stating that “A patient has the right to accept or refuse life-sustaining treatment”. Meanwhile, the rates of correct answers were below 50% for the following items: “A patient can ask a primary care provider to make an advance directive” (16.0%)

Table 3. Scores on Knowledge Related to Advance Care Planning by Profession (N=169).

Item	Rate of correct answers		Mean ± SD			t	P
	n	%	Total	Nurse	Doctor		
1. A patient has the right to accept or refuse life-sustaining treatment	168	99.4	0.99±0.08	0.99±0.09	1.00±0.00	-0.67	0.507
2. According to the Act on Decisions on Life-Sustaining Treatment, CPR is within the scope of life-sustaining treatment	153	90.5	0.91±0.29	0.87±0.34	0.98±0.14	-2.98	0.003
3. According to the Act on Decisions on Life-Sustaining Treatment, an artificial respirator is within the scope of life-sustaining treatment	150	88.8	0.89±0.32	0.85±0.36	0.98±0.14	-3.49	0.001
4. According to the Act on Decisions on Life-Sustaining Treatment, anti-cancer treatment is within the scope of life-sustaining treatment	100	59.2	0.59±0.49	0.61±0.49	0.56±0.50	0.60	0.551
5. According to the Act on Decisions on Life-Sustaining Treatment, hemodialysis is within the scope of life-sustaining treatment	111	65.7	0.66±0.48	0.68±0.47	0.62±0.49	0.75	0.453
6. Advance medical directives completed by an adult aged 19 or older are legally valid	30	17.8	0.18±0.38	0.19±0.39	0.15±0.36	0.53	0.594
7. Advance medical directives never change once written	146	86.4	0.86±0.34	0.86±0.35	0.87±0.34	-0.04	0.970
8. A patient can ask a primary health care provider to complete an advance medical directive	27	16.0	0.16±0.37	0.15±0.35	0.19±0.40	-0.77	0.444
9. Only advance medical directive completed by a lawyer are legally valid	107	63.3	0.63±0.48	0.58±0.50	0.75±0.44	-2.22	0.028
10. A patient in terminal care or death can complete a life-sustaining treatment form	155	91.7	0.92±0.27	0.92±0.27	0.92±0.27	-0.01	0.988
11. A chronically ill patient in a local community can complete advance medical directive	144	85.2	0.85±0.36	0.84±0.37	0.88±0.32	-0.79	0.430
12. Family members’ agreement regarding the patient’s core values for life-sustaining treatment can be used to determine a patient’s intent for life-sustaining decision making if an advance medical directive has not been completed	116	68.6	0.69±0.46	0.65±0.48	0.79±0.41	-1.96	0.053
13. An advance care plan is a document describing essential medical actions for an ill patient incapable of making decisions	113	66.9	0.67±0.47	0.62±0.49	0.79±0.41	-2.30	0.023
14. A medical, or legal representative can make a health care decision on behalf of a patient unable to speak on a temporary or long term basis	156	92.3	0.93±0.26	0.92±0.27	0.94±0.24	-0.46	0.646
15. A patient can change his or her medical, or legal representative at any time	147	87.0	0.88±0.33	0.87±0.34	0.88±0.32	-0.25	0.802
Sum of knowledge		71.9	10.79±2.23	10.56±2.40	11.31±1.70	-2.32	0.022

Table 4. Mean Scores for Attitudes towards Advance Care Planning by Profession (N=169).

Item	Mean \pm SD			t	P
	Total	Nurse	Doctor		
1. A patient at the end of life can make a decision and has a right to refuse life-support devices in advance	3.34 \pm 0.47	3.38 \pm 0.49	3.23 \pm 0.43	2.07	0.041
2. A chronically ill patient can demand a life-support device in advance, even if he/she is not at a stage of terminal care or end of life	3.34 \pm 0.51	3.38 \pm 0.51	3.25 \pm 0.52	1.58	0.115
3. Chronically ill patients have the right to make a preliminary decision to refuse life-support devices	3.33 \pm 0.56	3.38 \pm 0.52	3.19 \pm 0.63	2.07	0.040
4. Everyone has a right to make a preliminary decision to refuse life-support devices	3.31 \pm 0.59	3.38 \pm 0.55	3.15 \pm 0.64	2.38	0.018
5. A healthcare provider should respect the wishes of a patient despite disagreement over end of life care decisions	3.14 \pm 0.68	3.24 \pm 0.60	2.90 \pm 0.81	3.02	0.003
6. It may be best not to provide all information to the patient	2.01 \pm 1.40	2.03 \pm 1.40	1.97 \pm 1.40	0.20	0.842
7. If there is a conflict between the patient's and family's wishes for end of life care decision, the nurse should follow the patient's opinion	2.96 \pm 0.64	3.05 \pm 0.54	2.75 \pm 0.79	2.51	0.014
8. All patients capable of making a decision should prepare advance medical directives, and advance care planning	3.14 \pm 0.55	3.16 \pm 0.53	3.10 \pm 0.60	0.74	0.463
9. Nurses should actively assist patients in preparing advance medical directives, advance care planning	3.14 \pm 0.61	3.11 \pm 0.64	3.19 \pm 0.53	-0.79	0.431
10. If the primary doctor does not consider the patient's values regarding 'death with dignity' as a treatment option, any other physicians involved in patient care should provide information on life-sustaining treatment	3.04 \pm 0.57	3.06 \pm 0.59	2.98 \pm 0.50	0.84	0.402
11. If the primary doctor does not consider the patient's values regarding 'death with dignity' as a treatment option, nurses involved patient care should provide information on life-sustaining treatment	3.03 \pm 0.58	3.06 \pm 0.58	2.96 \pm 0.59	1.01	0.312
12. If the primary doctor does not consider the patient's values regarding 'death with dignity' as a treatment option, any person involved in patient care (ex. social workers) should provide information on life-sustaining treatment	3.02 \pm 0.60	3.09 \pm 0.56	2.87 \pm 0.66	2.18	0.032
13. Nurses should assist patients in deciding on life-sustaining treatment, and its refusal or suspension should be presented as one of the options for treatments	3.17 \pm 0.43	3.20 \pm 0.44	3.10 \pm 0.41	1.36	0.176
14. Nurses should have the ability to provide adequate information and counseling to reassure patients and family members regarding life-sustaining treatment	3.27 \pm 0.47	3.31 \pm 0.48	3.18 \pm 0.43	1.74	0.084
Total mean score	3.12 \pm 0.37	3.16 \pm 0.34	3.02 \pm 0.40	2.43	0.016

Table 5. Mean Scores for Self-Efficacy Related to Advance Care Planning by Profession (N=169).

Item	Mean \pm SD			t	P
	Total	Nurse	Doctor		
Advance medical directives	2.46 \pm 0.61	2.44 \pm 0.61	2.51 \pm 0.60	-0.67	0.501
Advance care planning	2.35 \pm 0.68	2.36 \pm 0.69	2.33 \pm 0.67	0.22	0.828
Total mean score	2.41 \pm 0.60	2.40 \pm 0.62	2.42 \pm 0.57	-0.21	0.831

and “An advance directive completed by an adult aged 19 years or older and kept in a drawer is legally valid” (17.8%).

Among the questions on the health personnel's attitudes to-

ward palliative care, the lowest score was found for “It may be best not to provide all information to the patient” (2.01 \pm 1.40 points), followed by “If there is a conflict between the patient's

Table 6. Comparison of Mean Scores among Variables Involving Personal Experiences (N=169).

Item	n (%)	Knowledge			Attitudes			Self-efficacy		
		Mean±SD	torF	P*	Mean±SD	torF	P*	Mean±SD	torF	P*
Death in close network	No	10.66±2.41	-0.54	0.592	3.10±0.36	0.57	0.567	2.43±0.58	0.43	0.666
	Yes	10.85±2.14			3.13±0.37			2.39±0.62		
Illness (cancer or other chronic disease) in close network	No	10.72±2.26	-0.68	0.497	3.12±0.37	-0.61	0.951	2.42±0.63	0.34	0.731
	Yes	10.98±2.16			3.12±0.38			2.38±0.54		
Education related to palliative care	No	10.60±2.14	-1.55	0.123	3.07±0.35	-2.48	0.015	2.33±0.61	-2.40	0.017
	Yes	11.16±2.37			3.22±0.39			2.56±0.58		
Ever exposed to awareness-raising initiative about palliative care	No	10.65±2.25	-0.69	0.488	3.08±0.35	-1.17	0.246	2.29±0.56	-2.31	0.022
	Yes	10.89±2.23			3.15±0.38			2.50±0.62		
Ever heard about advance medical directives	No	10.03±2.19	-2.42	0.017	3.15±0.34	-0.48	0.634	2.32±0.70	-1.02	0.311
	Yes	11.01±2.20			3.11±0.37			2.43±0.58		
Ever heard about advance care planning	No	10.53±2.20	3.13	0.002	3.08±0.36	2.22	0.027	2.31±0.59	3.70	<0.001
	Yes	11.75±2.00			3.23±0.38			2.70±0.55		
Ever explained procedures to patients/relatives	Missing									
	No	10.45±2.23	-3.77	<0.001	3.08±0.35	-2.40	0.018	2.32±0.61	-3.55	<0.001
Consulting about palliative care	Yes	11.92±1.84			3.24±0.41			2.70±0.50		
	No	10.49±2.22	-4.03	<0.001	3.11±0.36	-0.78	0.437	2.33±0.59	-3.61	<0.001
Caring for patients who had agreed to receive palliative care	Yes	12.24±1.64			3.17±0.41			2.76±0.53		
	No	10.44±2.19	-2.84	0.005	3.09±0.36	-1.64	0.103	2.27±0.61	-4.17	<0.001
Yes	11.45±2.19			3.18±0.38			2.66±0.50			

*Duncan test.

s and family's wishes for end-of-life care decisions, the nurse should follow the patient's opinion" 2.96 ± 0.64 points) and "If the primary doctor does not consider the patient's values regarding 'death with dignity' as a treatment option, any person involved in patient care (ex. social workers) should provide information on life-sustaining treatment" (3.02 ± 0.60 points) (Table 4).

Regarding the health personnel's self-efficacy for providing palliative care, the score for advance directives was 2.46 ± 0.61 points and the score for advance care planning was 2.35 ± 0.68 points (Table 5).

4. Comparison of health personnel's knowledge, attitudes, and self-efficacy according to palliative care experience

Differences in health personnel's knowledge, attitudes, and self-efficacy according to palliative care experience are presented in Table 6.

Fifty-seven participants (33.7%) reported that they had received education related to palliative care, 94 (55.6%) had been exposed to awareness-raising initiatives, 39 (23.1%) had explained palliative care-related regulations or procedures, 29 (17.2%) had provided patient or family counseling on the writing of advance directives or advance care planning, and 58 (34.3%) had provided care for patients who had written advance directives or had advance care plans.

Participants who had received palliative care education had significantly higher scores for attitudes ($t=-2.48$, $P=0.015$) and self-efficacy ($t=-2.40$, $P=0.017$). Those who had been exposed to awareness-raising initiatives on palliative care had significantly higher scores for self-efficacy ($t=-2.31$, $P=0.022$). The level of knowledge about palliative care was significantly higher among those who were aware of advance directives ($t=-2.42$, $P=0.017$).

Participants who had heard about advance care planning had a significantly higher level of knowledge ($t=3.13$; $P=0.002$), attitudes ($t=2.22$, $P=0.027$), and self-efficacy ($t=3.70$; $P<0.001$) than those who had not. Participants with experience in explaining palliative care-related regulations or procedures also had significantly higher levels of knowledge ($t=-3.77$, $P<0.001$), attitudes ($t=-2.40$; $P=0.018$), and self-efficacy ($t=-3.55$, $P<0.001$). Participants who had experience in consulting

regarding making advance directives or advance care planning had significantly higher levels of knowledge ($t=-4.03$, $P<0.001$) and self-efficacy ($t=-3.61$, $P<0.001$). Those who had experience in providing nursing care to patients or families who had advance directives or advance care plans had significantly higher levels of knowledge ($t=-2.84$, $P=0.005$) and self-efficacy ($t=-4.17$, $P<0.001$).

5. Correlations between health personnel's knowledge, attitudes, and self-efficacy related to providing palliative care

Health personnel's knowledge of palliative care was positively correlated with self-efficacy ($r=0.266$, $P<0.001$), and attitudes were positively correlated with self-efficacy ($r=0.192$, $P=0.012$); however, the effect size was either weak or moderate (Table 7).

DISCUSSION

This study was conducted to help develop training programs for improving health personnel's knowledge, attitudes, and self-efficacy to meet the needs of patients with advanced chronic diseases other than cancer, who require palliative care that should be differentiated from hospice care for patients with terminal cancer, in the dying process, or at the end of life, thereby contributing to improving the quality of life for such patients [17].

Due to the absence of previous studies on advance care planning for patients with advanced chronic diseases, it is difficult to directly compare the findings of the current study on knowledge, attitudes, and self-efficacy according to sociodemographic characteristics with those of previous studies. However, when compared to similar studies involving nursing students [18] or intensive care unit nurses [19], it is noteworthy that the current study did not demonstrate significant dif-

Table 7. Correlations between Variables (N=169).

Variables	Knowledge	Attitudes
	r (P)	r (P)
Attitudes	0.113 (0.145)	
Self-efficacy	0.266 (<0.001)	0.192 (0.012)

ferences in health personnel's knowledge of palliative care according to their age or career history. This may be attributable to the fact that the average age of the participants in this study was relatively high (34.2 years); furthermore, 88.8% of them had a 4-year college bachelor's degree or higher, and many of them had been exposed to awareness-raising initiatives at their institutions, which had been designated as pilot centers for palliative care, and this experience naturally contributed to the growth of their interest in palliative care.

In this study, the average score for health personnel's attitude toward palliative care was higher for participants with a longer career history or more personal experience (older age, married, having a child). In a similar vein, Jang et al. reported that more clinical experience as intensive care unit nurses and more personal experience were correlated with favorable attitudes toward palliative care provision [19]. The level of knowledge of advance care planning was higher among physicians than nurses, but their score for attitudes was lower than that of nurses. This may indicate the need to formulate a differentiated teaching-learning strategy for improving attitudes toward palliative care according to profession.

Health personnel were relatively well aware of life-sustaining treatment decisions as set forth by the recent law (77.5%), but had a lower level of knowledge of advance care planning, which includes more comprehensive care decisions than those of advance directives (23.7%). Since perceptions and needs of patients with advanced chronic diseases differ from those of cancer patients [16], health personnel should be prepared to provide proactive and comprehensive counseling for the patients regarding advance care planning. Furthermore, the training program should include legal aspects about advance care planning.

Low scores for communications with patients/family and the interdisciplinary team, as well as bioethics, indicate the content areas that training for health personnel should focus on in the future. Empathetic communication skills to provide patients and family the right amount of information to make shared decisions are essential to support and protect patients' dignity and rights. Therefore, it is necessary to develop a training program for health personnel to improve communication confidence and skills to deliver bad news and to discuss advance care planning. Furthermore, clearer expectations of roles and

responsibilities based on professional and cultural expectations should be established to prevent conflicts and dilemmas, as Lee et al. pointed out [18]. Narrative education or role playing would be good candidates for training to enhance the capacity of health personnel to make shared decisions with patients and communicate with multidisciplinary team members.

A smaller number of participants had experienced explaining (23.1%) or consulting (17.2%) about life-sustaining treatment policies or procedures than had treated or provided nursing care for patients and their families (34.3%) who had made advance directives or had advance care plans. This may provide evidence that death with dignity and life-sustaining treatment have become relatively familiar concepts, as interest in bioethics has increased, and more patients and their families have accepted palliative care as a treatment option, whereas health personnel have not been properly trained to provide these services. In addition, professional and environmental constraints associated with clinical practice may hinder health personnel from fulfilling their full potential. Prior studies have pointed out that health personnel's competency in providing palliative care can be improved through training [7,17]. The United Kingdom has provided education on palliative care for undergraduates in medicine and nursing for over 20 years [20]. The United States has also recently paid more attention to education on palliative care for health personnel [21]. It is time for Korea to consider expanding education related to palliative care in schools, as well as continuing education for health personnel.

Experience in providing palliative care is directly related to the attitudes of health personnel (especially primary care providers), the knowledge of palliative care and methodological issues (policy, regulations or procedures). According to a prior study by Shin et al. [6], physicians treating patients with chronic diseases agreed that palliative care should be provided to patients with chronic diseases, but as they equated palliative care with hospice care, they did not express consensus regarding when to provide palliative care, how to initiate discussions on life-sustaining treatment, or what to discuss. This suggests the need to provide practical guidance regarding when health personnel should offer which forms of specific palliative care to patients with chronic diseases and offer training on how to practice palliative care in clinical settings.

Regarding the correlations between health personnel's knowledge, attitudes, and self-efficacy related to palliative care, the correlation between knowledge and self-efficacy was stronger than that between attitudes and self-efficacy, but both knowledge and attitudes showed positive correlations with self-efficacy. Carper [22] reported that nursing knowledge (the ways of knowing) is improved via personal, empirical, ethical, and aesthetic knowing; this premise can be applied not only to nurses, but also to all health personnel who need to provide patient-centered care. When empirical knowing is extended through aesthetic and personal knowing and the ethical anguish as human beings is resolved through reflection and training, health personnel will have more empathetic attitudes and improved self-efficacy for providing palliative care.

Based on the above findings, we would like to suggest palliative care directions for patients with advanced chronic diseases. First, prior studies emphasized that advance care planning for patients with chronic diseases should be done in the early stage of the disease, not the end stage [7,23]. In addition, the palliative care services expected from patients with chronic diseases encompass not only the decisions related to life-sustaining treatment required by law (only four life-sustaining treatments were specified as available for patients to decide upon in 2018, at the time of the study), but also more comprehensive medical treatment decisions and even non-medical care services, which can improve the quality of life of both patients and their families [2,11,24]. Thus, palliative care for patients with chronic diseases should be planned and provided with consideration of these needs. Second, according to prior research, health personnel's attitudes toward palliative care depend on their perspectives regarding a desirable life and death, personal values, culture, norms, and laws [17,25]. For successful implementation, it is necessary to go beyond simply introducing services that originated from different cultures and backgrounds; instead, it is necessary to develop palliative care services tailored to the specific cultural setting and target patient characteristics [11,16]. Furthermore, since successful palliative care requires a team-based approach, inter-professional training should be planned and offered.

Notwithstanding the significance of our findings, the current study has the following limitations. First, advance care planning for patients with advanced chronic diseases may need to

include not only medical treatment decisions, but also non-medical services such as care coordination to use community resources to meet the needs of patients and family [11]. Since this study was a pioneering study, it was difficult to find reliable and valid research tools to assess the needs of care coordination. Therefore, it is necessary to conduct follow-up research focusing on tool development after a study with concept analysis or Q-methodology to identify perceptions and needs regarding palliative care and care coordination in patients with chronic diseases [26]. Second, it is necessary to examine whether non-medical health professionals such as social workers are prepared to provide palliative care to meet the needs of patients with advanced chronic diseases. Finally, since this study was conducted at a tertiary hospital, the results need to be carefully interpreted, and replication with a larger sample size is warranted.

CONFLICT OF INTEREST

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

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AUTHOR'S CONTRIBUTIONS

Conceptualization or design of the work: ESC. Data collection: JL. Formal analysis: SL. Data interpretation: ESC, SL, IL. Manuscript writing: ESC, SL. Critical revision of the article: IL, JL.

SUPPLEMENTARY MATERIALS

Supplementary materials can be found via <https://doi.org/10.14475/kjhpc.2020.23.4.198>.

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