Development of a Measuring Tool for the Terminal Care Performance of Hospital Nurses

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Abstract

The purpose of this study was to develop a scale to measure the degree of terminal care performance in hospital nurses. This was a Delphi research study that drew a collective consensus through a review by a panel of experts. The panel was organized by experts and two rounds of questionnaire surveys were administered. All the participants in the panel for the Delphi survey were nurses with more than seven years of experience in terminal care and twelve and sixteen nurses were surveyed in the first and second rounds, respectively. The developed scale for the degree of terminal care performance has a total of 46 items and comprises 15 items for before dying, 17 for during dying, and 14 for after death. The results of this study are expected to be utilized in the development of end-of-life nursing education programs that improve hospital nurses' job satisfaction by alleviating their burden due to terminal care and allowing them to provide terminal care suitable for the patient's situation.

Keywords*: Hospitals, Terminal care, Nursing, Development*

1. Introduction

In Korea, the proportion of the population aged 65 years or older to the total population has continued to increase due to the low birth rate and aging population, and is predicted to reach 30% by 2030 and 40% by 2060, making Korea a super-aged society [1]. An increase in the elderly population is leading to an increase in the use of medical services by them and elderly deaths in hospitals through an increase in demand for medical services for the elderly and patients with geriatric diseases [2]. Care for elderly patients at home is difficult due to the prevalence of nuclear families and increased social and professional activities of family members, forcing the care for and death of the elderly to occur in hospitals [3]. The provision of terminal care by medical personnel in other countries has also been shown to reduce the number of emergency hospitalizations, and alleviate family suffering and the burden on medical providers [4][5][6]. This phenomenon indicates that the center of terminal care is shifting from families to medical personnel [7], and the role of hospital nurses in terminal care is becoming more important [8].

Terminal care performance helps terminally ill patients to die with dignity and comfort [9]. One of the important roles of nurses is to care for patients who are in the last stage of life and

help them face death positively [3]. Nurses caring for terminally ill patients, however, may experience difficulties in terminal care performance due to psychological pain, such as feelings of helplessness, death anxiety, and hopelessness, because there is nothing they can do to save their patients' lives [10]. It is necessary to lower the terminal care stress of nurses to increase efficiency, since terminal care performance may be overloaded. It may be difficult for terminal care nurses, who face patient deaths more closely than anyone else, to perform the terminal care required according to each hospital's policy and each patient, due to a lack of awareness of death and stress [11].

Most studies on terminal care have included intensive care unit nurses [12][13], hospice nurses, and clinical nurses [14][15] as subjects. Studies on hospital nurses have included the relationship between terminal care stress and death perception [16], terminal care-related stress [17], and the degree of terminal care performance [18].

In Korean studies of the degree of terminal care performance, the scale developed by Park and Choi (1996) has been used until now [19]. In foreign countries, studies have ranged from Fish and Shelly's [20] work on nursing activities based on spiritual nursing to Frommelt's (1991) work on hospice nurses' terminal care performance. It has been the basis for this [20]. Recently, nursing research has pursued holistic nursing, in which consideration is given to physiology, body, social culture, and psychological aspects while providing overall nursing care for patients. Although 20 years have passed since the development of the scale for the degree of terminal care performance, there have been no studies on the measurement of the degree of terminal care performance or the development of a terminal care performance measurement scale suitable for use in Korea.

Considering this situation, the development of a terminal care performance measurement scale suitable for the current clinical environment is an urgent task. Therefore, the purpose of this study was to develop a scale to measure the degree of terminal care performance in hospital nurses. This study attempted to develop a measurement scale to confirm the provision of high-quality terminal care by hospital nurses.

For this purpose, the Delphi survey on an expert panel was performed to measure a scale to measure the degree of terminal care performance. For this purpose, the Delphi survey on an expert panel was performed. The purpose of this study was to develop a scale to improve the quality of terminal care performance of clinical nurses.

2. Method

The equation editor was used to show each equation. This was a Delphi research study for the development of a scale to measure the degree of terminal care performance in hospital nurses, which identified the components of the scale and reached a collective agreement through a review by a panel of experts.

2.1. Subjects

In the Delphi study, the formation of a panel of experts is necessary; in this study, the panel of experts comprised clinical nurses with a career of over seven years and experience as terminal care nurses in a hospital. For the first-round Delphi survey, a total of 12 nurses were recruited, with 7 working in two general hospitals (n = 3 and 4, respectively) in the S area, and 5 working in two general hospitals (n = 2 and 3, respectively) in the D area. Their academic credentials included 10 bachelor's degrees, 1 master's degree, and 1 doctoral degree. The second-round Delphi survey included 16 clinical nurses working in two general hospitals in the D area [Table 1].

Table 1. Second-round Delphi survey results in two general hospitals in the D area

Characteristics		1st round (N=12)	2nd round (N=16)
		n (%) or M±SD	n (%) or M±SD
Age		44±5.88	37.81±6.53
Sex	Female	12 (100.0)	16 (100.0)
Highest education level	Bachelor of Arts	-	1 (6.3)
	Bachelor	8 (66.7)	11 (68.8)
	Master	2 (16.7)	3 (18.8)
	Doctor	2 (16.7)	1 (6.3)
Religion	Christian	2 (16.7)	2 (12.5)
	Buddhist	2 (16.7)	2 (12.5)
	Catholic	3 (25.0)	7 (43.8)
	Other	-	-
	None	5 (41.7)	5 (31.3)
Work department	Cardiology	1 (8.3)	1 (6.3)
	Nephrology	1 (8.3)	1 (6.3)
	Surgery	3 (25.0)	1 (6.3)
	Hema-oncology	-	1 (6.3)
	Hema-oncology medicine	-	1 (6.3)
	Hospice	6 (50.0)	11 (68.8)
Years of service	< 5	1 (8.3)	2 (12.5)
	5–10	-	4 (25.0)
	10–20	-	6 (37.5)
	> 20	8 (66.7)	4 (25.0)
Job satisfaction	High	4 (33.3)	7 (43.8)
	Middle	6 (50.0)	9 (56.3)
	Low	6 (50.0)	-

2.2. Instrument

A general literature review on terminal care was conducted using databases, such as RISS, NDSL, PubMed, and CINAHL to investigate the data of previous studies. Based on this, a questionnaire was developed, and focus group interviews were conducted with hospital nurses specializing in terminal care. The purpose of the focus group interviews was to understand the contents of terminal care by listening to the vivid experiences of terminal care of hospital nurses, who perform terminal care in actual clinical settings. The focus group interviews were conducted with four groups comprising 3 to 5 clinical nurses who belonged to a research group active in four general hospitals across the country. The interviews were continued until the data were saturated. Based on this, 42 terminal care nursing questions were developed. Each item was rated on a five-point scale (five: strongly agree, four: agree, three: moderate, two: disagree, one: strongly disagree). The developed scale was repeatedly revised after being reviewed by a panel of experts, where items to be deleted, corrected, and added were continuously adjusted. Finally, 50 items were developed. The developed items were divided, following an agreement among the experts, into three periods comprising before dying, during dying, and after dying, based on the time when terminal care was provided. The questionnaire was administered to 16 clinical nurses for the second Delphi survey.

2.3. Data collection

The focus group interview to develop the Delphi survey items was conducted from January 15 to April 30, 2020, and repeated reviews on the items were conducted until May 15, 2021, when the panel of experts and components were confirmed for item development. The content validity of each scale item with the completed composition was reviewed during the second Delphi survey from May 15, 2021, to June 30, 2021.

2.4. Data analysis

The first item was developed through expert panel interviews and open-ended questions, and the second Delphi survey was conducted using a completed questionnaire. The IBM SPSS/WIN 23 program was used for the second Delphi data analysis. Frequency and percentage, mean, and standard deviation were analyzed, and content validity was measured by calculating the content validity ratio (CVR) for each item. Kendall's W was calculated to check the degree of agreement of the expert panel on all questions. The CVR indicates the percentage of experts who answered that the question was "appropriate." In this study, it was calculated as the proportion of respondents who responded with four or five points on the five-point scale. The CVR calculation formula was as follows:

$$CVR = \frac{n_e - \dfrac{N}{2}}{\dfrac{N}{2}}$$

refers to the number of respondents who responded with four or five points, and N refers to the total number of respondents.

The CVR ranges from +1.0 to -1.0, and a positive (+) CVR value implies that more than half of the raters responded with four or five points on a five-point scale, while 0 means that half of the raters responded with four or five points. A negative (-) CVR value implies that more than half of the raters responded with one, two, or three points. In this study, following the suggestion of Lawshe (1975), the minimum CVR value for 16 respondents was set as 0.49, and under this criterion, the correction or deletion of items was considered.

2.5. Research ethics

This study was approved by the bioethics committee of the researcher's institution (IRB approval No. 2019-09-019). During the interview, consent was obtained for the recording, and after sufficiently explaining the research contents to the expert group, voluntary consent was obtained and the research was conducted. It was explained that the information obtained during the research process would be used only for the research and would be permanently deleted at the end of the research. It was explained that all information obtained through the research would be encrypted and properly managed.

3. Results

[Table 2] shows the results of the Delphi survey that confirmed the terminal care performance of clinical nurses. Of the total 50 items, 46 were found to have content validity above the criteria value (CVR>.49) for both performance and importance; therefore, they were judged to be appropriate for the terminal care performance of the clinical nurse's scale.

In particular, the items showing the highest points for clinical care performance were as follows: "After preparing terminal care supplies, I can put on disposable gloves and remove the monitor and intubation device attached to the body," (4.75±0.45), "I can lay the patient on his/her back, put his/her hands on his/her stomach, and close his/her eyes," "If the patient's mouth is not closed, I can roll up a towel or gauze to use as a bib," and "I can cover the patient's body except the face with a clean duvet or sheet" (4.75±0.58). On the contrary, "I can identify the patient's condition according to the determination of terminal status criteria," "I can identify the patient's spiritual condition and needs and provide appropriate spiritual care," and "I can practice spiritual care according to the patient's religion," and "I can guide patients and caregivers about the post-mortem donation process if they want" showed content validity below the criterion value (CVR<.49). Kendall's W test (W=.27, p<.001), which was performed to check the agreement of clinical nurses, showed that the clinical nurses' opinions on the items with statistical significance were consistent with each other.

In the final scale on the degree of terminal care performance, 46 items were included; items 1, 17, 34, and 36 were excluded as their content validity was below the criteria.

Table 2. Delphi survey results confirmed the terminal care performance of clinical nurses

No		Item	Performance	
			M±SD	CVR
1	Before dying	I can identify the patient's condition according to the determination of terminal status criteria.	3.94±0.77	.38
2		I can provide terminal care counseling.	4.25±0.58	.88
3		I can write a pre-death checklist.	4.25±0.68	.75
4		I can identify the extent to which the patient and their caregiver accept death.	4.06±0.68	.63
5		I can conduct appropriate therapeutic communication with the patient's caregivers.	4.00±0.63	.63
6		I can keep the patient and their surroundings clean so that they are comfortable.	4.50±0.52	1.00
7		I can give advance notice that unexpected things can happen at any time before death.	4.44±0.63	.88
8		I can explain the patient's current condition and pre-death symptoms to the caregiver.	4.50±0.63	.88
9		I can recognize the fear of death felt by patients and their families and intervene accordingly.	4.13±0.72	.63
10		I can help patients and their families say what they want to say before death.	4.25±0.68	.75
11		I can explain the death process so that the patient's family can understand the patient's pain.	4.25±0.86	.50
12		I can intervene to manage and prevent bedsores.	4.50±0.63	.88
13		I can assess and manage the pain level.	4.13±0.72	.63
14		I can assess and manage breathing patterns.	4.31±0.79	.63
15		I can practice oral hygiene.	4.50±0.52	1.00
16		I can understand the psychological state of the patient and provide appropriate support.	4.19±0.66	.75

17		I can identify the patient's spiritual condition and needs and provide appropriate spiritual care.	3.75±0.86	.00
18		I can provide a separate place for the patient and their family to be together.	4.25±0.77	.63
19		I can evaluate the level of understanding and awareness of the caregiver about the patient's current condition.	4.19±0.66	.75
20		I can contact and explain the imminent death situation to the patient's family.	4.44±0.63	.88
21		I can explain the patient's impaired consciousness and prolonged sleep.	4.44±0.63	.88
22		I can explain that the patient's condition is unstable and the same movement can be repeated.	4.44±0.51	1.00
23		I can explain that the patient's hands and feet may become cold and sweaty, and their skin color may gradually turn blue.	4.56±0.51	1.00
24		I can explain changes in the patient's pain expression pattern, such as a grimacing face.	4.50±0.52	1.00
25		I can explain that the patient may take deep breaths and their breathing may become irregular.	4.56±0.51	1.00
26	During dying	I can explain that the sputum boils in the patient's throat and that the procedure to draw out the sputum can cause pain in the patient.	4.56±0.51	1.00
27		I can take proper oral care so that the patient's mouth does not dry out.	4.50±0.52	1.00
28		I can help the patient adopt a comfortable position depending on his/her condition.	4.44±0.51	1.00
29		I can explain that the anus is open and the stools can come out and can prepare a diaper or put a blanket on the bed.	4.56±0.51	1.00
30		I can explain to the caregiver the need for a reduction in artificial nutrition and fluid supply.	4.50±0.63	.88
31		I can explain the role of the family at the time of death.	4.31±0.70	.75
32		I can do therapeutic communication with caregivers in terminal care.	4.19±0.75	.63
33		I can give the patient's family time to say their final goodbyes.	4.56±0.51	1.00
34		I can explain changes in the patient's pain expression pattern, such as a grimacing face.	3.88±0.81	.25
35		I can explain the administrative procedures after death to the patient's family.	4.63±0.62	.88
36		I can guide patients and caregivers about the post-mortem donation process if they want.	3.81±0.91	.00
37	After dying	I can explain so that families can prepare funeral arrangements in advance.	4.44±0.73	.75
38		After the doctor's death declaration, I can notify the family and express my condolences.	4.44±0.63	.88

39		I can give the patient's family time to accept the patient's death.	4.44±0.51	1.00
40		I can support the patient's head with a pillow to maintain a comfortable appearance.	4.69±0.48	1.00
41		After preparing terminal care supplies, I can put on disposable gloves and remove the monitor and intubation device attached to the body.	4.75±0.45	1.00
42		I can wipe off blood and body fluids from the patient's face and body, and place absorbent diapers on the patient.	4.69±0.60	.88
43		I can change the patient's clothes to clean ones.	4.69±0.60	.88
44		I can lay the patient on his/her back, put his/her hands on his/her stomach and close his/her eyes.	4.75±0.58	.88
45		If the patient's mouth is not closed, I can roll up a towel or gauze to use as a bib.	4.75±0.58	.88
46		I can cover the patient's body except for the face with a clean duvet or sheet.	4.75±0.58	.88
47		I can explain the discharge-related procedures for a dying patient to the patient's family and can perform discharge procedures and administrative tasks.	4.69±0.60	.88
48		I can make a nursing record related to the patient's condition before and after death.	4.69±0.70	.75
49		I can see them up to the lift when they leave for the funeral home.	4.69±0.60	.88
50		I can arrange the hospital room after death.	4.69±0.70	.75
		Kendall's W	.27 (p<.001)	

4. Conclusions

This study attempted to develop a measurement scale to confirm the provision of high-quality terminal care by hospital nurses. This is a Delphi research study that drew a collective consensus through the review of an expert group. The developed scale for terminal care performance finally included 46 items including 15, 17, and 14 items for the terms before, during, and after, respectively, after excluding four items of #1, 17, 34, and 36 with content validity (CVR<.49) below the standard value among 50 items developed by the focus group. For the difference between the developed and conventional scales for terminal care, the conventional one divided items into four categories such as physical, psychological, social, and spiritual nursing care while the developed one divided them into three categories into those before, during, and after terminal care according to the time the care is provided. In addition, items of conventional instruments are general and abstract while newly proposed items are very concise and composed using performance-oriented practical terms. Dividing items into three categories those before, during, and after terminal care according to the time the care was agreed upon fully by the panel of experts entirely. These results are expected to be used in the development of terminal care education programs that improve nurses' job satisfaction by alleviating the burden of terminal care and improving their skills to provide terminal care suitable for the patient's situation. This study, however, has low generalizability because the participants were limited to nurses working in just four general hospitals located

in two cities. Therefore, a follow-up study, based on the results of this study, with expanded participants is proposed.

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