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Perceived Difficulties and Motivation for Further Learning Among Acute Ward Nurses Providing End-of-life Care During the COVID-19 Pandemic: Perspectives on Life and Death Among Nurses

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Abstract

Background: In Japan, deaths of elderly people aged ≥75 years account for more than half (73.0%) of the total number of deaths in the country, reflecting the state of Japan's aging population. Increasingly more inpatients undergoing surgery are aged ≥65 years. For nurses working in acute wards, providing end-of-life care to elderly patients is often part of their clinical experience. However, as a result of the growing nuclear family structure, fewer and fewer nurses have experienced the death of close relatives. As restrictions on medical care and limited visitation policies implemented during the COVID-19 pandemic in 2019 continue to be enforced in hospitals, the various measures and regulations to prevent infection have become ever more complicated, and nurses working to provide care under these restrictions undoubtedly feel challenged in their daily caregiving. This study aimed to clarify perceived difficulties and motivation for learning among acute ward nurses providing end-of-life care under the COVID-19 pandemic, specifically from their perspectives on life and death.

Methods: We conducted semi-structured interviews using an interview guide with a total of 35 female acute ward nurses in the Kansai area who had experience (including past experience) with caring for end-of-life patients (either death confirmation or postmortem procedures). Data were analyzed by text data mining using "Trend Search" software (Fujitsu), in which a stronger association was indicated by a closer distance between the words.

Results: All 35 female nurses who provided consent to participate in this study were registered nurses.

Mean age was 28.7 years, and mean number of years of clinical experience was 6.5 years. The number of years of clinical experience was 1-5 years in 17 (48.5%) nurses and ≥6 years in 18 (51.5%); three (8.5%) graduated from nursing schools and 32 (91.5%) graduated from junior colleges or universities. Twenty-six (74.3%) had experienced bereavement and nine (25.7%) had not.

Nurses' views of life and death before obtaining their nursing credentials were classified into the following three groups centered around <to feel>: <death>, <distant>, and <disease>. Their views on life and death after obtaining their nursing credentials were classified into the following four groups centered around < consider>: <family>, < personality>, <opportunity>, and < time of death>.

Perceived difficulties in end-of-life care provided in clinical practice were classified into the following three groups centered around <family>: <private room>, <say>, and <COVID-19>.

Motivation for further learning and questions regarding end-of-life care were classified into two groups centered around <family>: <hospital> and <take care>.

Conclusions: Our results highlighted the importance of nurses cultivating their own views on life and death. Our study also revealed that the outbreak of COVID-19 not only brought about changes in job contents and rules, but the measures implemented also keep changing on a daily basis. Under such circumstances, nurses in acute wards are having to perform their duties under extreme stress while harboring conflicted feelings. Mental care support for nurses is a critical necessity, as are further studies that consider how measures against COVID-19 should be adopted in the future.

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Nurse; View of life and death; perceived difficulty; Motivation for learning; End-of-life

Introduction

According to the Ministry of Health, Labour and Welfare Vital Statistics of Japan, 68.3% of people die in hospitals and clinics, with deaths at home accounting for 15.7% [1]. As these numbers suggest, not many elderly people die at home under the current conditions. With the progressive aging of the population in Japan, the number of deaths among people aged ≥65 years is increasing, with a marked increase noted in the number of deaths among those aged ≥75 years (accounting for 73.0% of all deaths); in other words, more than half of all deaths occur among elderly people aged ≥75 years [1]. In addition, an overwhelmingly high number of patients die in facilities such as

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hospitals; in terms of hospitalized patients, an increasing trend in the number of ≥65-year-olds who undergo surgery has been observed. Many of those patients die after readmission to an acute ward due to decreases in physical strength following surgery. Nurses working in acute wards often find themselves in a position of providing end-of-life care to elderly patients as part of their clinical practice and experience. In other words, nurses are given increasingly more opportunities to think about death, but many have never attended someone's deathbed until they become a nurse, as opportunities to experience a person's death firsthand are becoming fewer and fewer due to the effect of the growing nuclear family structure.

The 2019 pandemic of the novel coronavirus disease (COVID-19), which was designated as an infectious disease in 2020 [2], led to the enforcement of medical restrictions and visitation restrictions that are still in place in hospitals today. For this reason, in addition to their typical duties and responsibilities in the acute ward, nurses now cannot avoid having to deal with the extra complication of implementing measures against COVID-19 in their daily work. For nurses working on-site, they may perceive some difficulties related to fewer and weaker interactions with patient families due to visitation restrictions, difficulties in making decisions with patients or on their behalf or confirming the intentions of patient families, and in handling the various restrictions in end-of-life care including those imposed on visitation and time spent in the hospital.

Sakurai et al. [3] found that nurses' views of life and death are constructed from elements that are integrated in a comprehensive manner from various different views of life and death. Therefore, nurses' experiences in clinical practice and in providing end-of-life care are considered to affect greatly their attitudes (views on life and death) related to death [4]. Number of nurses learn from and aspire to be like their senior nurses and certified nurses of palliative care with regard to how they provide end-of-life care or offer comforting words to patients and bereaved families when confirming a patient's death. One previous study reported a significant correlation between satisfaction gained from providing end-of-life care in a terminal care setting and satisfaction with the job itself [5].

Care practices may differ depending on the caregiver. It is also possible that anxiety about assistance and a sense of powerlessness, rather than a rewarding feeling or a sense of accomplished, when providing end-of-life care may lead to problems such as early retirement and a sense of shock about reality, including burnout, among nurses. A study by Komatsu et al. revealed that young nurses feel the mental burden and stress of performing end-of-life care [6]. Indeed, many nurses agonize about how assistance should be provided to elderly patients at the end of their lives, and some are confused about end-of-life care itself or attitudes toward elderly patients and their families [7]. Moreover, some nurses provide care while feeling that their knowledge of palliative care is insufficient, or perceiving difficulties in providing nursing care that differ between end-of-life and acute stages [8]. As pointed out, differences between acute-phase treatment and nursing and end-of-life nursing may create some stress. However, while some previous studies have examined the feelings and anxiety of nurses under the COVID-19 pandemic, [9-13] no study has investigated what perceived difficulties and anxiety exist among nurses in acute wards regarding end-of-life care. Therefore, we considered it important to clarify perceived difficulties and motivation for learning among acute ward nurses providing end-of-life care under the COVID-19 pandemic, with a consideration of nurses' views on life and death.

Subjects and Methods

Objectives

This study aimed to clarify perceived difficulties and motivation for further learning among acute ward nurses providing end-of-life care under the COVID-19 pandemic, with a consideration of their life and death views.

Study period and methods

The survey was conducted from April through December 2020. Participants were nurses working in the acute ward of hospitals in the Kansai area. Semi-structured interviews based on an interview guide were conducted with a total of 35 female nurses who had experience (including past experience) providing care to end-of-life patients in acute wards (either death confirmation or postmortem treatment).

The following procedure was used: after obtaining permission from the administrators of acute care medical institutions in the Kansai area to conduct this study, consent was obtained from each participant. Then, interviews were conducted after setting the date and time, which were adjusted to accommodate each participant. Interview duration ranged from 30 minutes to no more than 1 hour. As a measure of infection control, on-line interviews (using a PC, etc.) were also offered as a feasible option if requested by participants.

Survey contents included basic attributes (age, sex, years of clinical experience, experience (or not) with bereavement of someone close, and highest level of education), whereas interviews focused on "thoughts about life and death in clinical practice and an event or situation that left the strongest impression," "views of life and death before and after becoming qualified as a nurse," "perceived difficulties when providing end-of-life care in clinical practice," and "motivation for learning and questions about end-of-life care." Conversations were recorded using an IC recorder, and verbatim records were created using a PC. Data were analyzed by text data mining.

Definitions of abbreviations and terms

Views on life and death: A way of thinking and understanding of how one should live and die. Close relatives: In this study, this term is used to refer to anyone who is close to the individual, including their spouse and family members. End of life: According to the End-of-Life Medical Care Guidelines [14], this stage is determined by multiple doctors and nurses including the attending doctor, as well as several other essential medical practitioners; the "end-of-life stage" is considered to begin when the patient, or their family or others conveying the patient's intentions if the patient cannot make decisions on their own (including not only relatives in the legal sense but also individuals who have the patient's trust), understands and agrees that death is imminent as it is no longer possible to stop the progressive deterioration of the patient's medical condition. Accordingly, with respect to patients for whom the participants of this study (nurses) provided support as part of their clinical experience, "end of life" was defined as the time when their medical condition progressively deteriorated such that death was considered imminent.

Ethical considerations

Participants received explanations about the purpose of and methods used to conduct the study, that their participation is voluntary, that they would not be subject to disadvantages even if they

if they chose not to participate in the study, that they could withdraw their participation at any time even after consenting to participation, and if they did, they would not face any repercussion. Interview contents were also described, and it was clarified that personal information would not be linked to a specific participant and that strict protection of personal information is guaranteed. Participants who signed a consent form were considered to have provided consent.

Ethical Approval

This study was approved by the Ethics Review Committee of Tottori University School of Medicine (19A173). There are no conflicts of interest to disclose regarding this study.

Analysis methods

Text data mining is the process of 'mining' information from written resources, such as electronic letters (e.g., e-mails) and unstructured text (e.g., free descriptions). By mining text data, trends in the appearance of words hidden in vast natural language data, co-occurrence relationships between words, and the dependency between words can be analyzed from a diversified perspective. Using this approach, trends, models, and information that are buried in text data can be extracted. This study used Fujitsu "Trend Search" software, wherein a closer distance between words indicates a stronger association. Given that the predicate is placed at the end of a sentence in Japanese grammar, we analyzed nouns, predicates derived from nouns, and adnominal adjectives (e.g., "*aru*" and "*iru*," translated "to have" or "to be," respectively, derived from nouns) by considering the context of text data. In addition, synonyms such as "*kanja,*" "*kanja-san,*" and "*kanja-sama*" (all translated "patient(s)"); "nurse station" and "*tsumesho*"; "NS" (all translated "nurse station") and "*kango-sha/kango-shi/kango-shoku* (all translated "nurse(s)")"; "Dr." and "*ishi/isha/shujii* (all translated "doctor(s)"); and "*korona*" and "*korona infection/shingata korona*"(all translated "COVID-19") were unified. After performing concept mapping, we deleted any words and terms without association lines and those that are far away and thus difficult to interpret.

Results and Discussion

Basic characteristics

All 35 female nurses who provided consent to participate in this study were registered nurses. Mean age was 28.7 years, and mean number of years of clinical experience was 6.5 years. (Table1) The number of years of clinical experience was 1-5 years in 17 (48.5%) nurses and ≥ 6 years in 18 (51.5%)(Table 2); 3 (8.5%) graduated from nursing schools and 32 (91.5%) graduated from junior colleges or universities. Twenty-six (74.3%) participants had experienced bereavement and nine (25.7%) had not (Table 3).

Since this study aimed to understand the current mentality among nurses, interviews were conducted to elicit participants' views of life and death before and after nursing qualification attainment, their perceived difficulties in end-of-life care in clinical practice, and motivation for learning and questions about end-of-life care.

Nurses' views on life and death before and after obtaining their nursing credentials: Nurses' views on life and death before they obtained their nursing credentials could be classified into the following three groups centered around <to feel>: <death>, <distant>, and <disease>. From the <death> group, images of a sudden change in the condition of patients under nurses' care, and those related to near-death experiences from the time when they were students, were inferred. In the <distant> group, insufficient knowledge about death and limited opportunities to think about death firsthand appeared to constitute the background of some participants. As for the <disease> group, it could be inferred that images of near-death experiences of close relatives, and images of themselves providing end-of-life care, were expressed (Figure 1).

	Age (Years)	Number of years of clinical experience (years)
Mean	28.7	6.5
Maximum	45	21
Minimum	22	1

Table 1: Participant age and years of clinical experiance.

	Bereavement (n)	%
With bereavement experience	26	74.3
Without bereavement experience	9	25.7

Table 2: Bereavement experience.

	Completed nursing educa	%
Nursing school	3	8.5
Junior college/university	32	91.5

Table 3: Completed nursing education.

Nurses' views on life and death after obtaining their nursing credentials could be classified into the following four groups centered around <consider>: <family>, <personality>, <opportunity>, and <time of death>. From the <family> group, the image of a patient dying in the ward was inferred. In the <personality> group, the image of witnessing a change in the person at the end of their life was expressed. In the <opportunity> group, thoughts and feelings about end-of-life care and patients in relation to accumulating end-of-life care experiences through their work as a nurse were expressed. From the <time of death> group, the image of nurses thinking about their own death was inferred (Figure 2). These results suggest that positive attitudes are enhanced through actual experiences of providing care to end-of-life patients, which also contributes to the personal growth of nurses [15,16]. also found that nurses took a passive role in recognizing dying [17]. A previous study reported that some nurses find it difficult to establish close relationships with end-of-life patients and their families because of their fear of death, which can sometimes lead a nurse to neglect the needs of patients at the end of their lives [18-20]. Another study reported that increased clinical experience brings about more accepting attitudes, which can then make the nurses' overall attitudes more positive [21]. Consistently, the present study observed a similar trend in positive opinions as well as negative opinions [22]. As reported by a previous study, nurses first need to recognize their own values and attitudes toward end-of-life patients [23, 24]. The "time of death" group indeed suggested that nurses used their experiences as opportunities to reexamine their own values and attitudes.

Perceived difficulties in end-of-life care provided in clinical practice: Perceived difficulties in end-of-life care provided in clinical practice were classified into the following three groups centered around <family>: <private room>, <say>, and <COVID-19>. In the <private

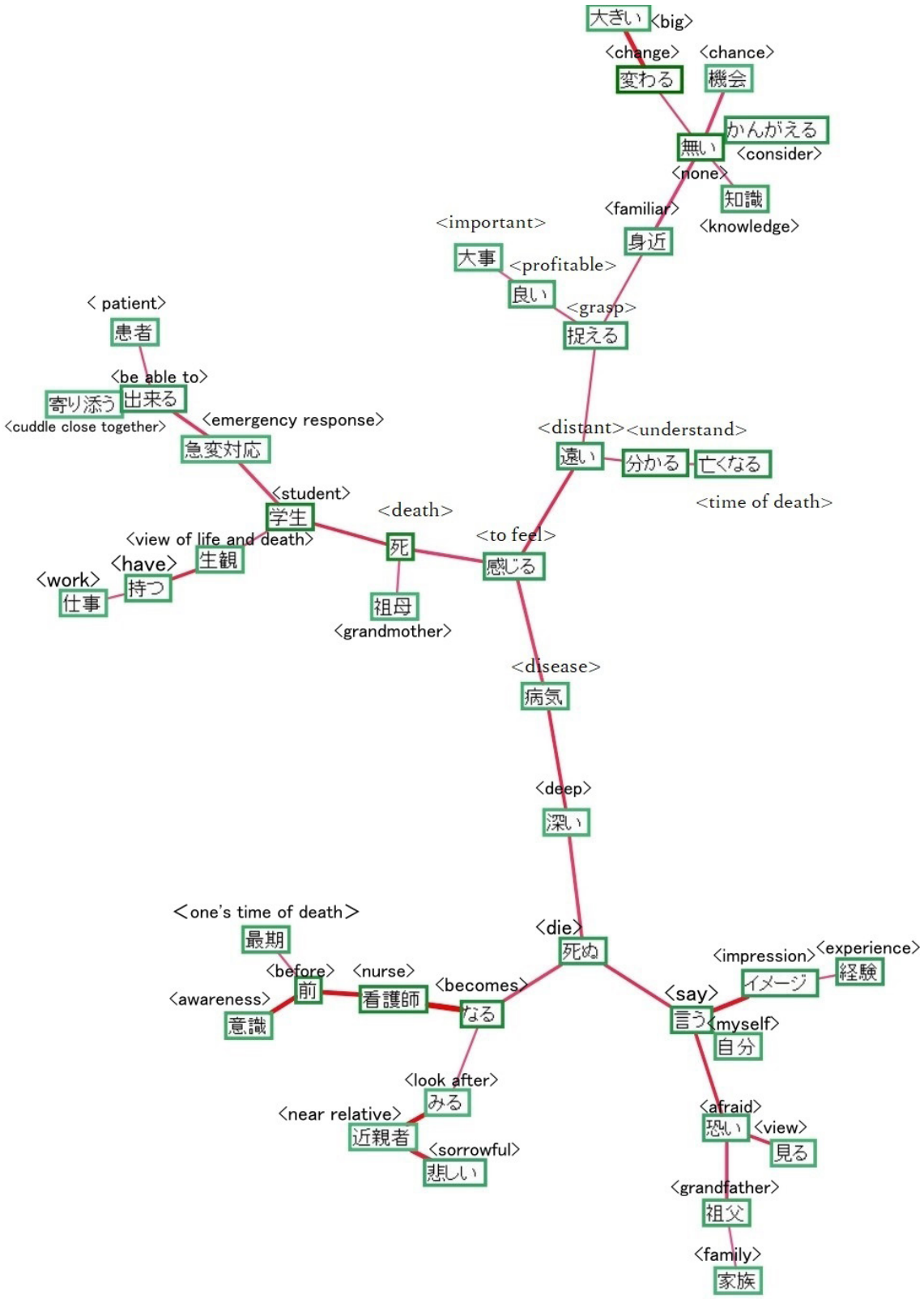

Figure 1: Nurses' views on life and death before.

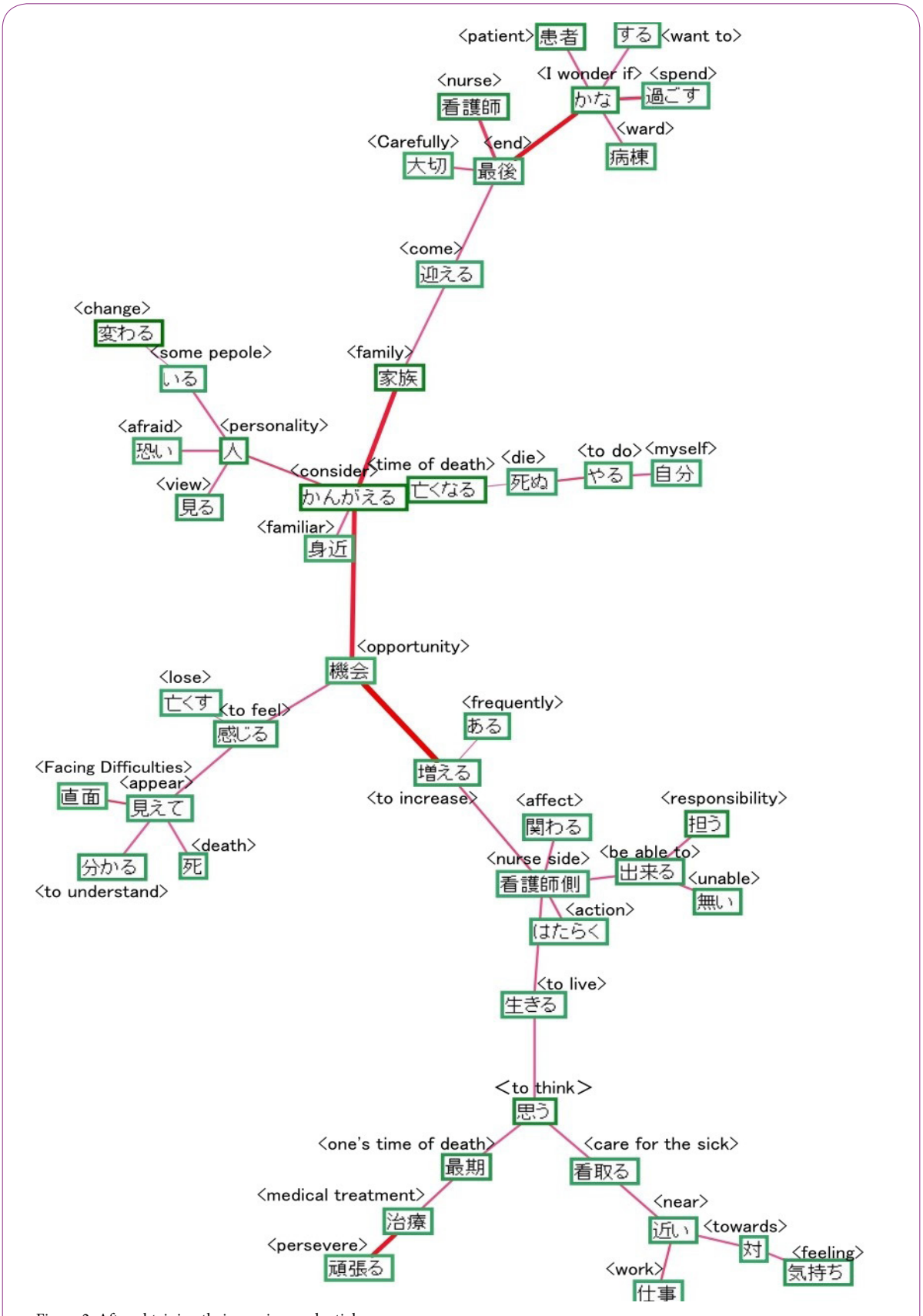

Figure 2: After obtaining their nursing credentials.

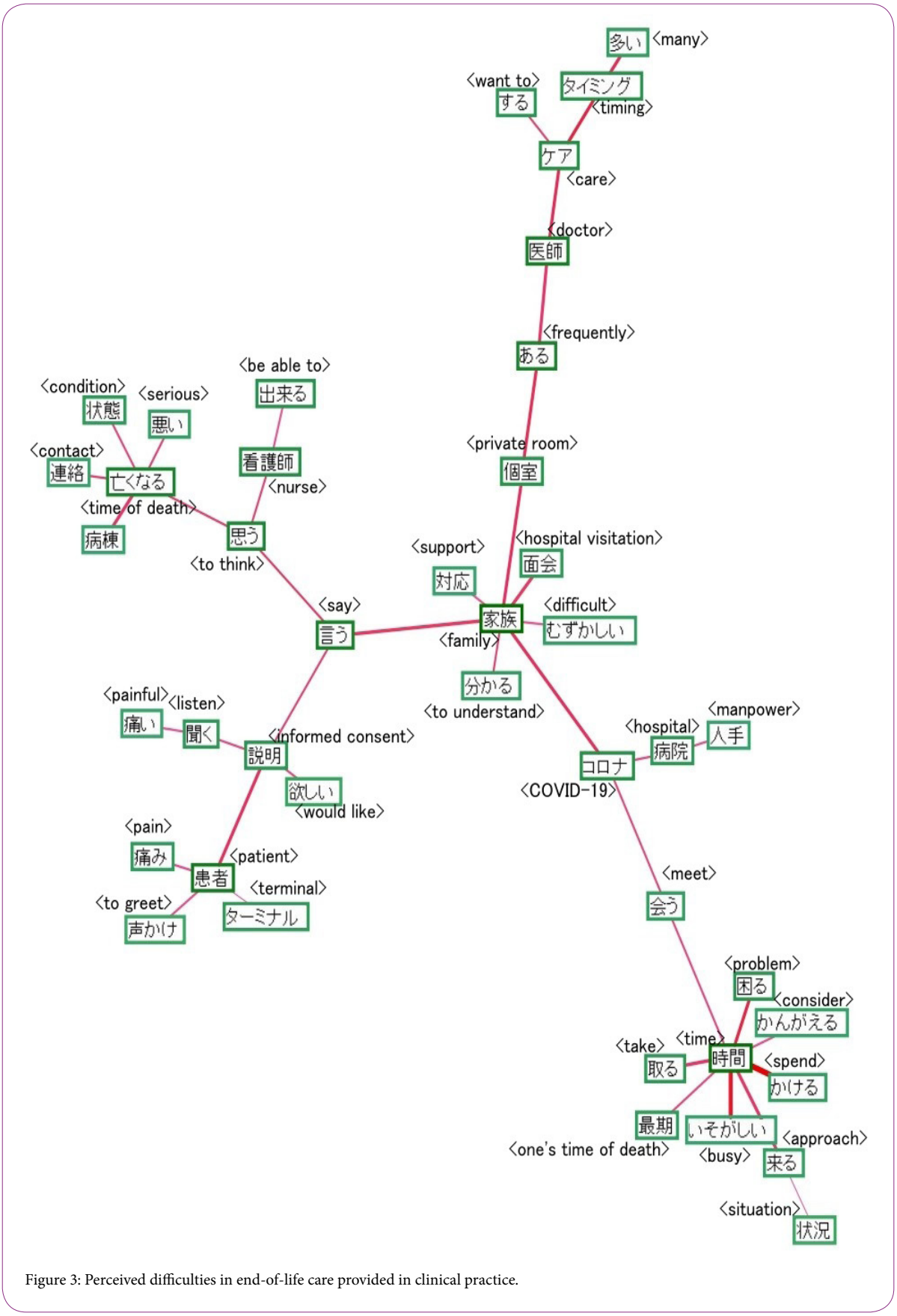

Figure 3: Perceived difficulties in end-of-life care provided in clinical practice.

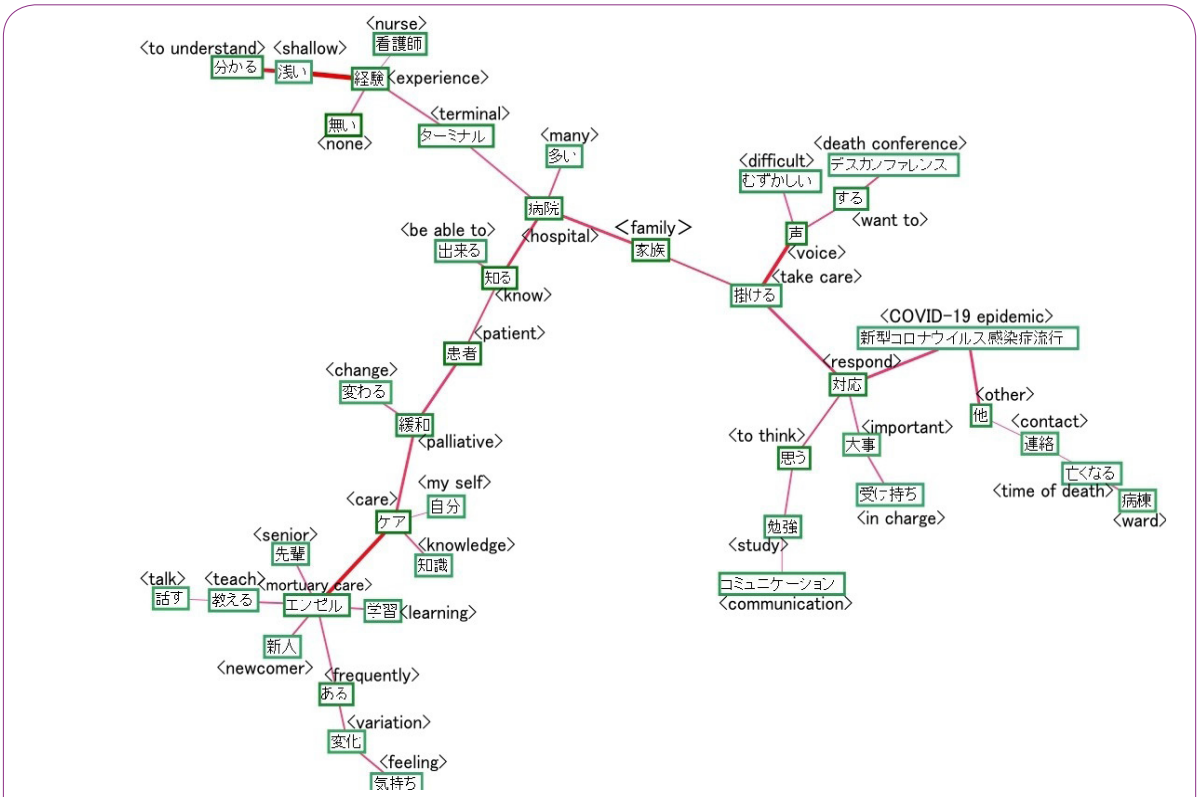

Figure 4: Motivation for further learning and questions about end-of-life care.

room> group, the current difficult situations regarding care and the timing of moving patients to a private room were expressed. In the <say> group, situations where nurses feel confused or uncomfortable about contacting the family, or explaining or offering kind words to the patient, were expressed. As for the <COVID-19> group, situations and conflicted feelings regarding the hospital visitation restrictions and the inability to allocate time for the patient in the last hours of their life due to other job duties were inferred from the obtained results (Figure 3). These findings were in line with a previous study that found that a significantly high percentage of nurses responded that they were not good at or find difficulty with time management and providing end-of-life care [25, 26]. There are no previous studies on the <COVID-19> group, and our results give a glimpse into the difficulties encountered by nurses regarding manpower and job duties. A previous study found that female college-educated nurses had high levels of stress and burnout, feeling that nursing care is inadequate and suffering from the development of depressive symptoms [27]. Our results also suggested that there is an urgent need for mental health support for nurses in acute wards who are preoccupied with responses to COVID-19.

Motivation for further learning and questions about end-of-life care: Motivation for further learning and questions about end-of-life care were classified into the two groups of <hospital> and < take care>, centered around <family> (Figure 4). In the <hospital> group, a lack of end-of-life care experiences was noted, and nurses appeared to be motivated and feeling the need to acquire knowledge on palliative care and postmortem procedures. In the < take care > group, with regard to death conference, the need for motivation to learn about COVID-19 responses in other hospitals and communication with patients was suggested. These results revealed the actual condition in which acute ward nurses carry out their duties while having conflicted feelings, as they are required to provide support for end-of-life patients in addition to providing both high urgency nursing care in the general ward and nursing care for postoperative patients. Moreover, the analysis of nurses' motivation to learn revealed that, with regard to items related to nursing care, nurses felt the need to learn methods of communication with patients to elicit their emotions and needs, knowledge of palliative care methods and supportive care to relieve patient pain, and methods of postmortem procedures and funeral makeup. Furthermore, they felt the need to learn about COVID-19 measures in end-of-life, as well as how end-of-life care is implemented at other hospitals. These results suggest that nurses suffer from a feeling of powerlessness in alleviating patient suffering, which can lead to conflicted feelings and difficulties [28, 29]. Meanwhile, they also felt a sense of accomplishment and satisfaction with heightened motivation for end-of-life nursing, which came about as a result of sharing their personal feelings with others or being recognized by others [28, 30]. As reported by previous studies, our results suggest that both negative and positive emotions are present, and together created these needs among nurses [31]. In addition, the need to address COVID-19 (i.e., the struggle with various measures that differ by ward or by hospital, conflicted feelings about not being able to spend time with family members) were also suggested. This study used an interview format, which was suitable for collecting data to understand the actual conditions perceived by acute ward nurses in their daily practice, allowing us to extract these needs.

This study suggested the importance of constructing a support system for nurses with limited experience and practice with end-of-life care, and for nurses to cultivate their own views on life and death by acknowledging their own emotions generated through their interactions with end-of-life patients. The current reality, which is that the outbreak of COVID-19 has changed job contents and rules, and

daily responses are changing on a day-to-day basis, was also revealed. Under such circumstances, nurses in acute wards are required to perform their duties under immense amounts of stress [32, 33], and while harboring conflicted feelings. The results of this study suggested the need for mental care support for nurses, as well as the need to further investigate how measures against COVID-19 should be adopted in the future.

Study Limitations

There may be regional differences in the responses of nurses, as the present study targeted those working in the acute ward of hospitals in the Kansai area. In addition, since the variables were 'perceptions,' it is difficult to generalize the results given possible changes over time. Future studies with a greater number of participants will be needed to examine this topic with regard to the individual backgrounds of nurses, including but not limited to factors such as the years of clinical experience, whether they had education outside of nursing education, whether they ascribe to a particular faith or religion, and the content of their clinical experience thus far.

Competing Interests

The authors declare that they have no competing interests.

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References

1. Ministry of Health, Labour and Welfare. Director-General for Policy Planning and Evaluation (Statistics and Information Policy, Labor-Management Relations). [Internet]. Tokyo "2020 Vital Statistics." 2020. [cited 2022 Dec 16] japanese.
2. Ministry of Health, Labour and Welfare. Physician and Veterinarian Notification in Accordance with the Infectious Disease Act, "7. Coronavirus Disease 2020." [Internet]. Tokyo 2020. [cited 2022 Dec 16] japanese.
3. Sakurai Y, Yamamoto M (2018) Factor Analysis of Acute Ward Nurses' Concepts of Life and Death. Open Journal of Nursing 8: 629-639.
4. Anderson NE, Kent B, Owens RG (2015) Experiencing patient death in clinical practice: Nurses' recollections of their earliest memorable patient death. Int J Nurs Stud 52: 695-704.
5. Nishio M, Kimiura H (2013) Sense of satisfaction entertained by nurses in terminal care. Journal of the Japanese Association of Rural Medicine 61: 890-903.
6. Komatsu H, Kojima M, Iwai K (1998) A study on the stress of nurses involved in end-of-life care. Kangokanri (Nursing management). 21: 103-105 (Japanese).
7. Oyama Y (2013) A comparative study on the trends in attitudes toward life and death among nursing staff and nursing students]. Proceedings of the 34th Meeting of Japan Society of Nursing, p77.
8. Nakajima S, Kakuta N (2000) Stress of nurses involved in palliative care – in the case of general wards. Japanese Journal of Palliative Medicine 2: 96-101 (Japanese).
9. Karbasi C, Pacheco E, Bull C, Evanson A, Chaboyer W (2018) Registered nurses' provision of end-of-life care to hospitalised adults: A mixed studies review. Nurse Educ 71: 60–74.
10. Sarboozi H T, Kakhki S, Teimori G, Nayyeri S (2020) Burnout and its influencing factors between frontline nurses and nurses from other wards during the outbreak of Coronavirus Disease -COVID-19- in Iran. Invest Educ Enferm 38: e3.
11. Wei H, Aucoin J, Kuntapay GR, Justice A, Jones A, et al. (2022) The prevalence of nurse burnout and its association with telomere length pre and during the COVID-19 pandemic. PLoS One 16: 17.
12. Yasmine K, Arnaud B, Pierre S (2022) Determinants of the risk of burnout among nurses during the first wave of the COVID-19 pandemic in Belgium: A cross-sectional study. J Nurs Manag 30: 1125-1135.
13. Ana SR, María CGE, Vicente PG (2020) Effect of Emotional Intelligence and Psychosocial Risks on Burnout, Job Satisfaction, and Nurses' Health during the COVID-19 Pandemic. Int J Environ Res Public Health 17: 7998.
14. All Japan Hospital Association (2016) [internet] Guidelines for end-of-life care. y [cited 2022 Dec 22] japanese.
15. Ceyhan Ö, Özen B, Zincir H, Şimşek N, Başaran M (2018) How intensive care nurses perceive good death. Death Stud 42: 667–672.
16. Fridh I (2014) Caring for the dying patient in the ICU - the past, the present and the future. Intensive Crit Care Nurs 30: 306–311.
17. O'brien MR, Kinloch K, Groves KE, Jack BA (2019) Meeting patients' spiritual needs during end-of-life care: A qualitative study of nurses' and healthcare professionals' perceptions of spiritual care training. J Clin Nurs 28: 182-189.
18. Ebtesam A, Zeilani RS, Othman EH (2022) Attitude and Associated Factors Toward end of Life Care among Nurses Working in Kuwait Hospitals: A Cross-sectional Study. Indian J Palliat Care 28: 280-286.
19. Hsu C, O'Connor M, Lee S (2009) Understandings of death and dying for people of Chinese origin. Death Stud 33: 153-174.
20. Croxon L, Deravin L, Anderson J (2018) Dealing with end of life-New graduated nurse experiences. J Clin Nurs 27: 337-344.
21. Hyo JP, Yun ML, Won MH, Lim SJ, Son YJ (2020) Hospital Nurses' Perception of Death and Self-Reported Performance of End-of-Life Care: Mediating Role of Attitude towards End-of-Life Care. Healthcare (Basel) 8: 142.
22. Ong KK, Ting KC, Chow YL (2018) The trajectory of experience of critical care nurses in providing end-of-life care: a qualitative descriptive study. J Clin Nurs 27: 257-268.
23. Ato S, Takeo K (2018) A study on the clinical nursing experiences and nursing skill difficulties found by the first and the second year nurses. Saku University Journal of Nursing10: 35-44 (japanese).
24. Huussin EOD, Wong LP , Chong MC, Subramanian P (2018) Factors associated with nurses' perceptions about quality of end-of-life care. Int Nurs Rev 65: 200-208.
25. Merve M, Selmin K, Sevim S (2021) Determination of stress, depression and burnout levels of front-line nurses during the COVID-19 pandemic. Int J Ment Health Nurs 30: 533543.
26. Tanioka S, Hori R (2018) A literature study on the feelings of nurses toward nursing care for patients with terminal cancer. Journal of Japanese Society of Human Caring Research 9: 75-78 (japanese).
27. Okamura T, Shimmei M, Takase A, Toishiba S, Hayashida K, et al. (2018) A positive attitude towards provision of end-of-life care may protect against burnout: Burnout and religion in a super-aging society. PLoS ONE 13: e0202277.
28. Ingela H, Maria B, Christina M J, Ella D, Camilla U, et al. (2014) The Swedish version of the Frommelt Attitude Toward Care of the Dying scale: aspects of validity and factors influencing nurses' and nursing students' attitudes. Comparative Study Cancer Nurs 37: E1-E11.
29. Park KS, Yeom HA (2014) Factors influencing Korean nurses' attitudes towards hospice care. Int Nurs Rev 61: 563-569.
30. Wang L, Li C, Zhang Q , Li Y (2018) Clinical nurses' attitudes towards death and caring for dying patients in China. Int J Palliat Nurs 24: 33-39.
31. Li X, Zhou Y, Xu X (2021) Factors associated with the psychological well-being among front-line nurses exposed to COVID-2019 in China: A predictive study. J Nurs Manag 29: 240-249.
32. Chen R, Sun C, Chen JJ, Jen HJ, Kang XL, et al. (2021) Large-Scale Survey on Trauma, Burnout, and Posttraumatic Growth among Nurses during the COVID-19 Pandemic. Int J Ment Health Nurs 30: 102-116.
33. Bae SY, Yoon HJ, Kim Y, Kim J (2022) Posttraumatic stress disorder and related factors among nurses working during the COVID-19 pandemic. J Nurs Manag 30: 10961104.