Yonago Acta Medica 2023;66(3):334–344 doi: 10.33160/yam.2023.08.002

Perceived Difficulties and Learning Needs Among Acute Care Ward Nurses Providing End-of-Life Care During the COVID-19 Pandemic: Comparison by Years of Clinical Experience

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ABSTRACT

Background In the daily routine of acute care wards, where priority is given to patients with severe illnesses and those who require urgent care, working with and supporting the decision making of terminally ill patients can be challenging.

Methods This study aimed to clarify the perceived difficulties of and learning needs among acute care ward nurses providing end-of-life care during the COVID-19 pandemic. In order to perform analyses by years of clinical experience, we conducted semi-structured interviews with both novice and experienced nurses. Participants were nurses working in the acute care ward of hospitals in the Kansai area.

Results We interviewed 31 nurses who agreed to co-operate, including 18 novice/advanced beginner nurses and 13 proficient/expert nurses. Perceived difficulties were categorized into four main groups for novice/advanced beginner nurses: <explanation>, <coronavirus>, <family>, and <doctor>. Perceived difficulties were categorized into four main groups for proficient/expert nurses: <nurses>, <care>, <think>, and <family>. Perceived learning needs were categorized into three main groups for novice/advanced beginner nurses: <patient>, <family>, and <experience>. Perceived learning needs were categorized into three main groups for proficient/expert nurses: <hospital>, <angel>, and <pain>.

Conclusion Novice/advanced beginner nurses felt anxiety and confusion, and were overwhelmed with how to care for terminal patients. Proficient/expert nurses were able to think about how to make patients and their families feel better, and were able to think specifically about post-mortem care. Many proficient/expert nurses were thinking not only about patient care but also about patients' room environment and how to spend time with their families. They sought learning opportunities regarding angel care, including methods of teaching it and basic techniques for performing it, and realized that information sharing within wards, chain of command within the hospital, information exchange with other hospitals, and inter-hospital collaboration were all important during COVID-19 pandemic.

Key words acute care ward; COVID-19; end-of-life care; learning needs; nurse; perceived difficulties

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. 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).[1] In addition, an overwhelmingly large number of patients die in facilities such as hospitals. In terms of hospitalized patients, there is an increasing trend of patients aged ≥ 65 years undergoing surgery. Many of these patients are readmitted due to a reduction in physical strength after surgery and die in an acute care ward. Of the 8,236 hospitals in Japan, only 463 (5.6%) have palliative care units. Thus, many patients inevitably end up in general wards.[2, 3]

In acute care wards, patients undergo acute critical care or are in the perioperative phase. These patients are examined and treated and receive assistance in medical treatment. According to Erel et al., surgical ward staff were less likely than medical ward staff to incorporate end-of life care into their practice.[4] It is important to provide support to patients, as well as their families, who face the last days of their lives in the hospital so that they can live out their final days with no regrets.

In the daily routine of acute care wards, where priority is given to patients with severe illnesses and those who require urgent care, working with and supporting the decision making of terminally ill patients can be challenging. Acute care ward nurses often find themselves in the position of providing end-of-life care

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Received 2023 February 3
Accepted 2023 June 29
Online published 2023 August 3
Abbreviations: COVID-19, Coronavirus Disease 2019; DNAR, Do Not Attempt Resuscitation

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to elderly patients as part of their clinical practice. In other words, nurses are given increasingly more opportunities to think about death, despite many having never attended someone's deathbed until they became a nurse, given the limited opportunities to experience a person's death firsthand due to the now prevalent nuclear family structure. Nishio et al. reported a significant correlation between satisfaction gained from providing end-of-life care in a terminal care setting and satisfaction with responsibilities and tasks.[5] Investigating what nurses need in order to provide satisfactory end-of-life care and gain an understanding of the problems they face is crucial.

The 2019 pandemic of the novel coronavirus disease (COVID-19), which was designated as an infectious disease in 2020,[6] led to the enforcement of medical restrictions and visitation restrictions in hospitals. In addition to carrying out their typical duties and responsibilities in the acute care ward, nurses had to deal with the extra complications of implementing measures against COVID-19 in their daily work. Nurses working on-site perceived difficulties related to fewer and weaker interactions with patients' families due to visitation restrictions, in making decisions with patients or on their behalf or confirming the intentions of patients' families, and in handling various restrictions in end-of-life care including those imposed on visitation and time spent in the hospital. The stress on nurses in acute care wards during the COVID-19 pandemic had reached a tipping point.

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 accomplishment, when providing end-of-life care can lead to problems such as early retirement and a sense of shock about reality, including burnout. A study by Komatsu et al. revealed that young nurses feel the mental burden and stress of performing end-of-life care.[7] 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 and how to act toward elderly patients and their families.[8] Some nurses provide care while feeling that they have insufficient knowledge about palliative care, or perceive difficulties in providing nursing care given the difference between care needed at the end-of-life and acute stages.[9] Differences between acute phase treatment/nursing and end-of-life nursing may be a source of stress. Nurses with less clinical experience may experience even more difficulties than their experienced counterparts in dealing with issues related to death and dying.[10]

While some studies have examined the feelings and anxiety of nurses during the COVID-19 pandemic in emergency wards[11, 12] and ICUs,[13–15] few studies have targeted acute care wards.[16] In addition to nurses directly involved in the care of COVID-19 patients being exhausted, those in acute care wards who were not directly involved experienced difficulties owing to staffing shortages and various restrictions. Against this backdrop, we sought to clarify the perceived difficulties of and learning needs among acute care ward nurses providing end-of-life care during the COVID-19 pandemic.

MATERIALS AND METHODS

Definitions of terms

Acute care wards here refer to acute care wards of large-scale hospitals that can provide treatment and tertiary care for COVID-19 patients. End-of-life, according to the End-of-Life Medical Care Guidelines,[17] 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 practice, "end-of-life" was defined as the time when their medical condition progressively deteriorated such that death was considered imminent.

Do Not Attempt Resuscitation (DNAR),[18] which is described in "Advice on Do Not Attempt Resuscitation (DNAR) order", is defined in the present study as not performing cardiopulmonary resuscitation, in accordance with the patient's decision or surrogate's decision based on the patient's interests.

In Japan, angel care refers to all post-mortem care, such as post-mortem procedures, maintenance, and angel make-up. In hospitals, this refers to the period from the time the patient dies until the patient is seen off. In the present study, angel care refers to all post-mortem care, including support for family members.

Study design

This study aimed to clarify the perceived difficulties of and learning needs among acute care ward nurses providing end-of-life care during the COVID-19 pandemic. In order to perform analyses by years of clinical experience, we conducted interviews with both novice

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and experienced nurses.

Participants were nurses working in the acute care ward of hospitals in the Kansai area. Semi-structured interviews based on an interview guide were conducted with a total of 31 nurses who had experience (including past experience) providing care to end-of-life patients in acute care wards (either death confirmation or postmortem treatment). To avoid infection, participants were instructed to avoid contact with others as much as possible. Due to restrictions on visits and leisure activities, 30 of 31 participants were interviewed online.

The survey was conducted from April 2020 to December 2020. 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. Interviews were then conducted after setting the date and time, which were adjusted to accommodate each participant. Interview durations ranged from 30 to 60 minutes. Survey contents included basic attributes (e.g., age, sex, years of clinical experience), and interviews focused on "perceived difficulties when providing end-of-life care in clinical practice" and "learning needs and interests about end-of-life care."

Participants were asked the following questions during the interview: (i) What issues do you encounter during end-of-life care in clinical practice? For example, what are the human factors, environmental factors, and patients' physical and mental factors? (ii) What do you want to know about end-of-life care in the future, and what would you be interested in learning? Conversations were recorded using a digital voice recorder and verbatim records were created.

Analysis methods

Co-occurrence analysis was conducted using Trend Search 2015 (Fujitsu, Tokyo, Japan), a text mining tool. Co-occurrence analysis identifies related words in a text and displays their connections with each other. By combining the Keyword Associator and Concept Mapper functions of this software, extracted highly-related keywords are grouped and visually mapped on a flat surface, allowing related keywords to be placed near each other and unrelated keywords to be placed far apart, making it possible to intuitively grasp all relationships. The concept maps indicated that the thicker the ruled lines and the darker the color of the ruled lines between keywords are, the stronger the association tends to be (Figs. 1–4). The analysis included not only the keywords positioned centrally in a cluster, but also the association between these keywords and the participants' own statements. We also considered the content and relevance of the core keywords and connected keywords surrounding it. The concept maps of co-occurrence analysis allowed us to accurately identify and visualize problems nurses encountered during end-of-life care and their learning needs at the time of providing the care. The importance of the keywords was interpreted according to the above explanation.

Analysis by years of experience

New nurses and proficient to expert nurses may have different problems and learning needs due to their different years of clinical experience. In order to compare differences by experience, we collected and analyzed data for two separate groups. Based on Benner's theory, nursing experience can be divided into: "Novice," "Advanced Beginner," "Competent Proficient," "Proficient," and "Expert."[19] Previously, Hopkinson et al.[20] collected data from newly qualified registered nurses with two months to three years of experience. Zheng et al.[21] defined a new graduate nurse as having worked for no more than 36 months since graduation. Based on these studies, we categorized nurses with ≤ 3 years of experience as "novice/advanced beginner nurses" and those with ≥ 8 years of experience as "proficient/expert nurses."

Ethical considerations

Participants received explanations about the purpose of and methods used to conduct the study, that their participation was voluntary, that they would not be subject to disadvantages even 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 would be guaranteed. Participants who signed a consent form were considered to have provided consent. 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.

RESULTS

Basic characteristics

We interviewed 31 nurses who agreed to cooperate, including 18 novice/advanced beginner nurses and 13 proficient/expert nurses. Novice/advanced beginner nurses had an average age of 23.7 years and an average of 2.0 years of clinical experience. Proficient/expert nurses had an average age of 35.2 years and 12.7 years of clinical experience (Table 1).

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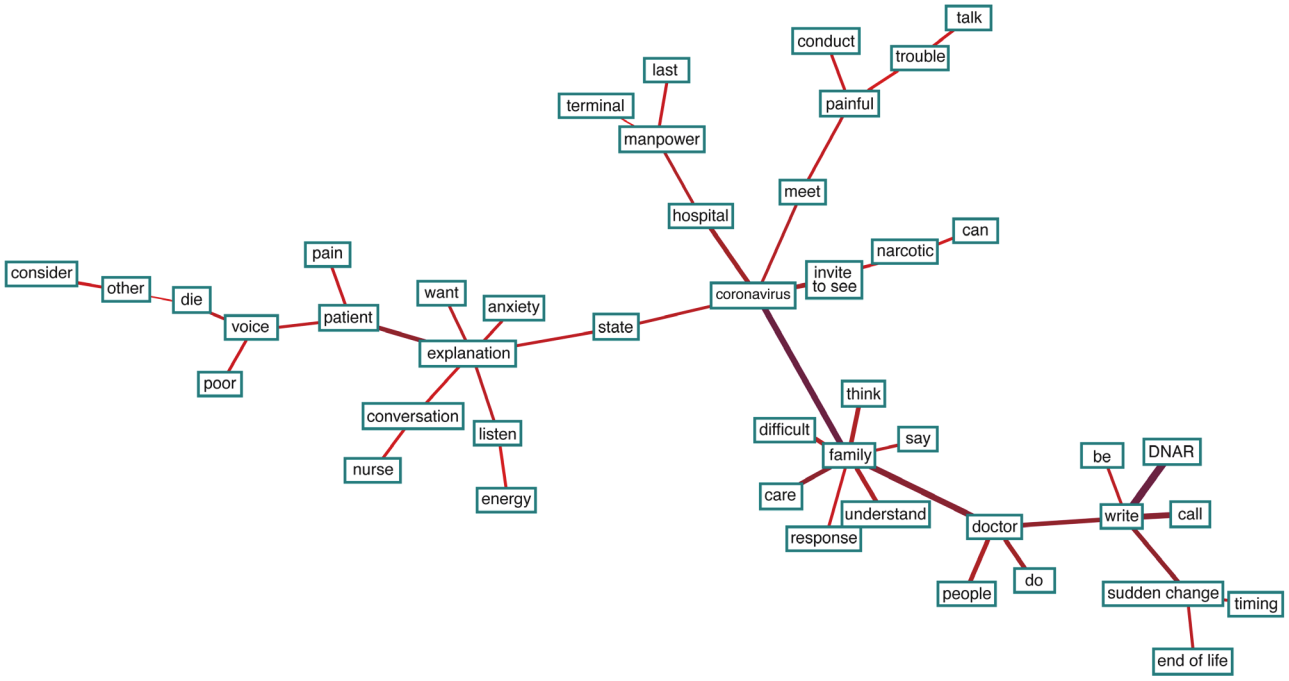

Fig. 1. The concept map of perceived difficulties of novice/advanced beginner nurses. The thicker the ruled lines and the darker the color of the ruled lines between keywords are, the stronger the association tends to be. The key words <explanation>, <coronavirus>, <family>, and <doctor> are extracted as main groups.

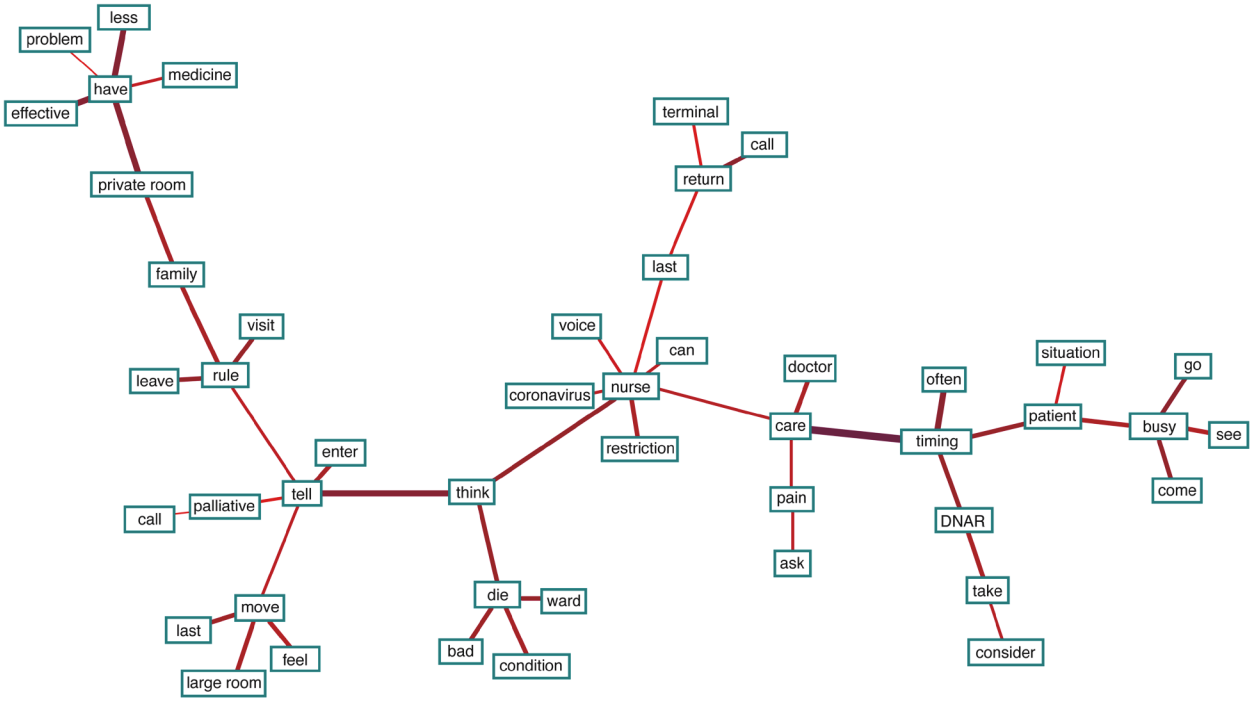

Fig. 2. The concept map of perceived difficulties of proficient/expert nurses. The key words <nurses>, <care>, <think>, and <family> are extracted as main groups.

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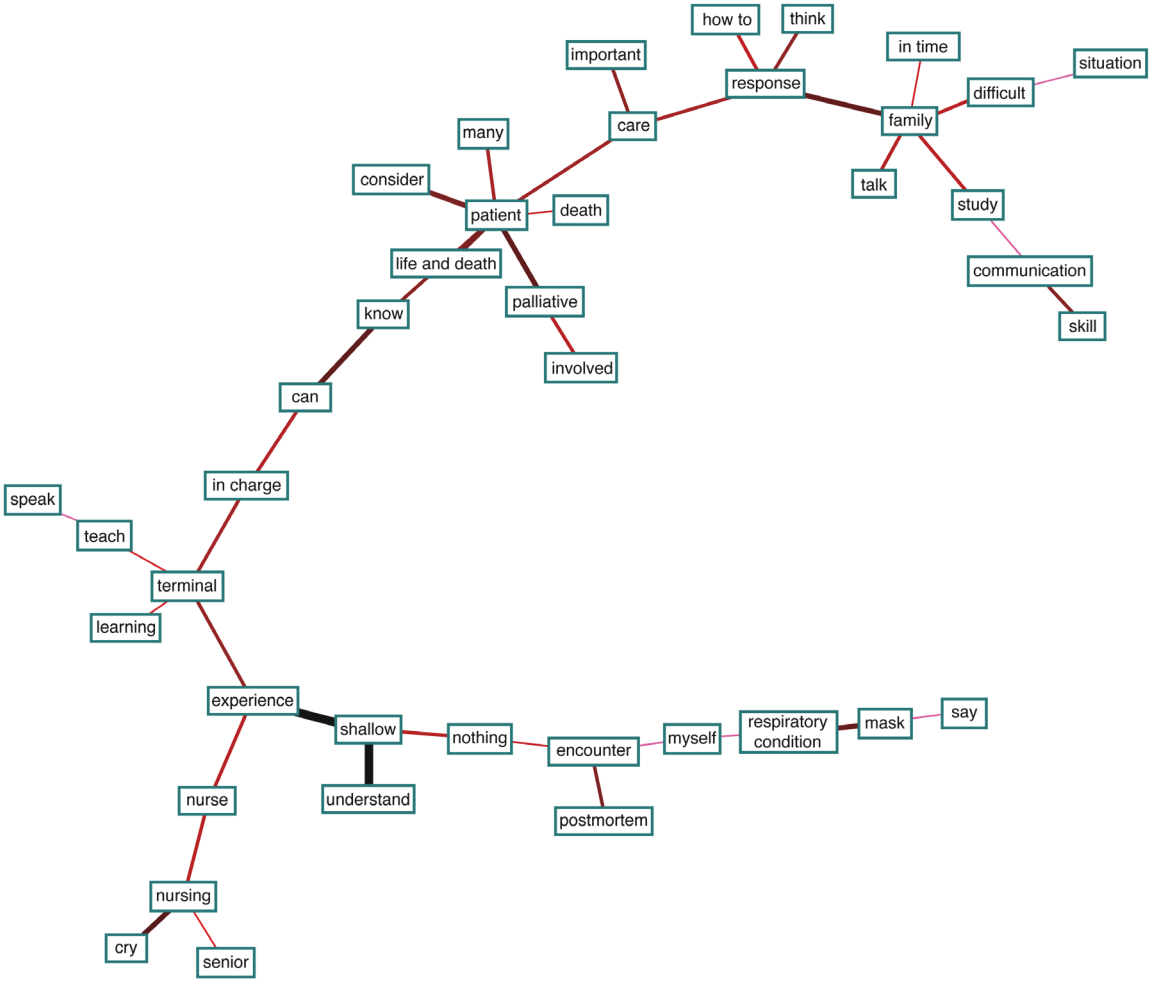

Fig. 3. The concept map of learning needs of novice/advanced beginner nurses. The key words <patient>, <family>, and <experience> are extracted as main groups.

Novice/advanced beginner nurses: Perceived difficulties in end-of-life care during COVID-19 pandemic

Perceived difficulties were categorized into four main groups for novice/advanced beginner nurses: <explanation>, <coronavirus>, <family>, and <doctor>. The keywords <explanation> and <patient> were tightly connected. There were also strong connections between the keywords <hospital>, <coronavirus>, <family>, <doctor>, <write>, <DNAR>, and <call>, as reflected by the thicker lines in Fig. 1.

The <explanation> group had branches for the keywords <want>, <anxiety>, <conversation>, <listen>, and <patient>. In particular, the connection with <patient> was strong, revealing anxiety about providing explanations to patients and supporting them.

EX: I want to hear patients' concerns about dying. Sometimes I am too busy at work to listen to patients. If doctors do not explain the prognosis to patients, it will be difficult for nurses to deal with patients when their condition worsens. If the doctor does not explain the prognosis to the patient, the patient will feel lonely. (ID 34)

The <coronavirus> group had branches for the keywords <invite to see >, <state>, <hospital>, <meet>, and <family>. In particular, the connections with <hospital> and <family> were strong, revealing confusion about how to support family members in end-of-life care and restrict visits.

EX: Supporting family members is quite difficult. The family may want to see the patient who is prone to sudden changes at any time. However, the hospital cannot allow them to see the patient due to the restrictions in place because of the coronavirus. If I were a family member, I would feel sad or frustrated. (ID 26)

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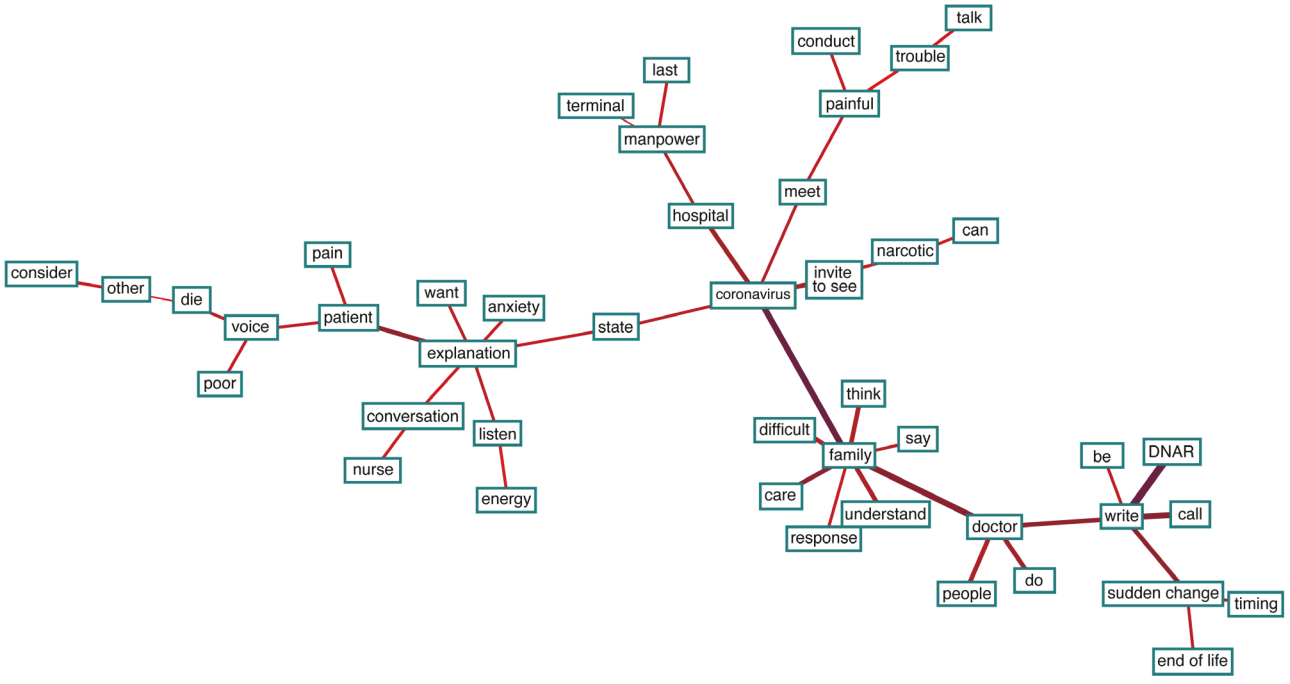

Fig. 4. The concept map of learning needs of proficient/expert nurses. The key words <hospital>, <angel>, and <pain> are extracted as main groups.

Table 1. Participant characteristics

	Novice/ advanced beginner (n =18)	Proficient/ expert (n =13)
Male	0	0
Female	18	13
Age (mean)	23.7	35.2
Clinical experience (years)	2.0	12.7

The <family> group had branches for the keywords <doctor>, <care>, <say>, <think>, <response>, <understand>, <difficult> and <coronavirus>, revealing a struggle with supporting and providing care to families.

EX: I would like patients to meet with their families, but they cannot because of visiting restrictions. It is difficult and frustrating to deal with this. (ID 30)

The <doctor> group had branches for the keywords <write>, <people>, <do> and <family>. In particular, the connection with <coronavirus>, <doctor>and<family> was strong, revealing difficulties with supporting family members and DNAR patients in the event of sudden changes.

EX: I ask doctors to write down their policy for DNAR patients. Some doctors write down "chest compressions" and others write only "DNAR," and often, in the event of a sudden change, they wonder how far they should go. (ID 20)

Proficient/expert nurses: Perceived difficulties in end-of-life care during COVID-19 pandemic

Perceived difficulties were categorized into four main groups for proficient/expert nurses: <nurse>, <care>, <think>, and <family>. The keywords <private room>, <have>, <less>, and <effective> were strongly connected and related to each other. The keywords <think> and <tell> were tightly connected with each other, as were <return> and <call>, and <go>, <busy> and <come>. There also were strong connections between the key words <care>, <timing>, and <often> (Fig. 2).

The <nurse> group had branches for the keywords <can>, <last>, <coronavirus>, <voice>, <care>, <restriction>, and <think>. In particular, the connections with <think> and <restriction> were strong, revealing difficulties with COVID-19, such as limiting visits to patients' rooms and talking to patients at the end of their lives.

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EX: I think it is necessary for nurse to follow up. I think the initial explanation is important. I think coronavirus is a detrimental factor. Because in principle patients are not allowed to see their family members or accompany them, it is heartbreaking for them not to be able to see them when they die or spend their last hours with them. (ID 27)

The <care> group had branches for the keywords <pain>, <nurse>, <doctor>, and <timing>. In particular, the connection with <timing> was strong, revealing difficulties in end-of-life care and in cooperating and consulting with doctors and other staff.

EX: Slow to take up palliative care. Doctors are not positive about palliative care. When a patient dies, the palliative care doctor tells the group of other doctors. The earlier patients start palliative care, the better, but I think that patients can express their feelings, and pain control can be done by asking a specialist to make the patients' lives more comfortable. Eventually, they were admitted to palliative care with opioids for pain control, and they settle in. (ID 6)

The <think> group had branches for the keywords <die>, <nurse>, and <tell>. In particular, the connection with <tell> was strong, revealing difficulties with monitoring changes in the condition of terminally ill patients and how to engage with them at the end of their lives.

EX: Due to the severity of the situation, some patients are very rude to nurses and are very harsh to young nurses. There are patients who judge nurses by their appearance and do not say anything to nurses with more experience. [.....] Since I am in a superior position, it is difficult to know how to advise the patient and to convince the young nurse to accept what the patient said. Later, I wonder whether young nurses will be able to understand that the patient was having a hard time. I understand that nurses are emotional during end-of-life care, and that they are human beings. So I understand that they get angry with the patients, and that it is difficult to know how interact with the patients. (ID 28)

The <family> group had branches for the keywords <rules> and <private room>, revealing that visiting with family members was difficult due to the rules and regulations of hospitals, and that private rooms were difficult to secure.

EX: Coronavirus is prevalent and so the rules make it difficult to have visits. So I don't think the family would be angry, but I am careful about what I say. If a private room can be prepared, they can be requested to enter a private room. But when there is only a large room, they can be moved if a private room is available. It is difficult to find the right time to move to a private room at the end, or when they are really about to die. (ID 5)

Novice/advanced beginner nurses: Learning needs in end-of-life care during COVID-19 pandemic

Perceived learning needs were categorized into three main groups for novice/advanced beginner nurses: <patient>, <family>, and <experience>. The keywords <think>, <response>, <family> were tightly connected, as were <palliative>, <patient>, <consider>, and <life and death>; <communication> and <skill>; <mask> and <respiratory condition>; <nursing> and <cry>; and <experience> <shallow>, and <understand> (Fig. 3).

The <patient> group had branches for the keywords <care>, <death>, <life and death>, <many>, <consider>, and <palliative>. In particular, the connection with <palliative> was strong, revealing learning needs for patient care and palliative care at the end of life.

EX: Many patients lose consciousness in their final days, and palliative care is important. I have been listening to senior nurses and their perspectives on life and death to find out what kinds of communication and care are effective. We need to provide care for the family to properly overcome the death of the patient, even before the patient dies. I don't know what kind of specific measures I should take. (ID 16)

The <family> group had branches for the keywords <in time>, <talk>, <difficult>, <study>, and <response>. In particular, the connection with <response> was strong, and feelings of "dealing with family" and "difficulty in talking to and caring for family" were extracted, revealing learning needs for communication with family.

EX: If patients lose consciousness, I wonder what we should say to the family. I think it is difficult for patients to completely accept death when they have to face it. I wonder if I can prepare for the patients' final days in a way that they would be satisfied. I would like to learn how nurses can talk to them and intervene to support them. (ID 23)

The <experience> group had branches for the keywords <nurse>, <terminal>, and <shallow>. In

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particular, the connection with <shallow> was strong, revealing the need for knowledge and experience about end-of-life care for those with limited clinical experience.

EX: I want to learn about terminal nursing. Since I am inexperienced, I would like to be involved in terminal and palliative care by gaining more experience in a clinical setting and by being taught by senior nurses. If I change jobs, I would like to move on to a place where I can learn such things. (ID 31)

Proficient/expert nurses: Learning needs in end-of-life care during COVID-19 pandemic

Perceived learning needs were categorized into three main groups for proficient/expert nurses: <hospital>, <angel>, and <pain>. The keywords <case>, <literature>, and <many> were tightly connected, as were <family>, <know>, <hospital>, and <other>; <other>, <coronavirus spread>, and <response>; and <angel>, <care>, and <understand> (Fig. 4).

The <hospital> group had branches for the keywords <terminal>, <spread>, <how to>, <other>, <many>, <family>, and <know>. In particular, connections with <family>, <know>, and <other> were strong, revealing learning needs for how other hospitals support family members and terminal cases.

EX: I want to know how other hospitals do it. I would like to know how nurses of terminal care hospitals provide assistance, care, and angel care for terminal patients. I saw a scene on TV where they wipe the body and apply make-up with the family. (Families) don't do this in hospitals. I wonder if the family would like to do it. (ID 33)

The <angel> group had branches for the keywords <learning>, <senior nurse>, <have>, <opportunity>, <basic>, <lose>, <teaching>, and <care>. In particular, the connection with <care> was strong, revealing that they want opportunities to learn about angel care, both for teaching it and to learn basic and proper skills related to it.

EX: Angel care was taught to me by a senior nurse. I wish I had a chance to learn the basic and proper angel care. (ID 27)

The <pain> group had branches for the keywords <care>, <can>, <knowledge>, <nothing>, and <palliative>. In particular, the connection with <palliative> was strong, revealing learning needs for pain relief methods and skills in care.

EX: A pain palliative care intervention team is being introduced into the ward, which is helpful for me since I can really provide pain palliative care even if I lack knowledge about it. As for other care, if I had knowledge of palliative care, I would be able to make suggestions. I think about it. I haven't been able to go to study workshops lately, and I would like to go to angel care workshops on a regular basis, something that changes every few years. (ID 10)

DISCUSSION

We conducted interviews with novice/advanced beginner nurses and proficient/expert nurses to clarify perceived difficulties and learning needs each group has in providing end-of-life care in acute care wards. Co-occurrence analysis was performed using keyword association analysis and concept mapping, allowing us to identify visually demonstrate issues that acute care ward nurses encounter during, and their learning needs at the time of providing, end-of-life care.

First, we consider the perceived difficulties of the two groups of nurses. Perceived difficulties for novice/advanced beginner nurses were divided into four main groups: <explanation>, <coronavirus>, <family>, and <doctor>. In the <explanation> group, nurses had difficulties with and wanted to learn about communications with family. This is consistent with the keyword <family>. When supporting patients and their families, if the family's intentions are not shared with the medical staff, a credibility gap develops between the medical staff and family members. Also, if the explanation differs from one staff member to another, the family will distrust the medical team. Therefore, relations with the family can be a strong source of anxiety. In particular, novice/advanced beginner nurses have limited clinical experience so were not yet proficient with interacting with the family and had difficulties communicating with patients, but showed a strong desire to improve their communication skills and responsiveness. This result highlights the difficulties experienced by nurses involved in end-stage cancer nursing in acute care hospitals with cooperating and collaborating with other medical professionals. Novice/advanced beginner nurses had more difficulties than proficient/expert nurses with knowledge and skills about end-of-life care. Zheng et al.[21] noted that new graduate nurses had minimal knowledge and skills related to death and dying, including required patient/family care and support. Additionally, Hyo et al.[22]

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observed that the level of performance of end-of-life care was significantly lower in younger nurses than in their older or more experienced colleagues.

Because the interviews were conducted during the COVID-19 pandemic, a <coronavirus> group emerged. The keywords <family>, <hospital>, <meet>, and <invite to see> branched off from this group, revealing that they had difficulties at the time of hospitalization with issues such as not being able to sufficiently prepare clothes and daily commodities for hospitalization because patients were unable to see their families, not being able to care for the patients' families, and not being able to provide angel care. In addition to concerns about the risk of infection, the inability to adequately care for the patient also was a concern. Novice/advanced beginner nurses have little experience in end-of-life care at the time they are employed and also experience significant difficulties when practicing end-of-life care.[23] The loss of opportunities to interact with patients' families due to the COVID-19 pandemic may have contributed to this sense of difficulty. Feelings of lacking knowledge and clinical experience may also have weakened their self-esteem and self-confidence.[24]

In the <doctor> group, "the timing of confirming DNAR instructions with the doctor" was voiced as a concern, suggesting that the patient care strategy was not solid due to a lack of coordination among doctors and health care workers. Bremer et al.[25] reported possible reasons for this, including the nurse not being present when the doctor provided the information, or that in conversations with the patient or their relatives, the nurse understood that the patient was unaware of the decision and assumed that the doctor was not providing information.

For proficient/expert nurses, perceived difficulties were categorized into four main groups: <nurse>, <care>, <think>, and <family>. In the <nurse> group, nurses had difficulties with COVID-19, such as limiting visits to patients' rooms and talking to patients at the end of their lives. The <care> group revealed difficulties in end-of-life care and in cooperating and consulting with doctors and other staff. The keyword <DNAR> was also extracted in the <care> group, including when to confirm DNAR instructions with the doctor and when to obtain consent for DNAR. Proficient/expert nurses, who play a central role in cooperating with doctors and other medical staff, also experienced difficulties consulting with doctors. Difficulties encountered were apparent in the keywords <move> and <private room>, which did not appear among novice/advanced beginner nurses. This reflects the leadership role of proficient/expert nurses as being in charge of bed control and ward management, and many of these nurses hold positions such as chief of the ward. Thus, coordination of ward management tasks comes with a unique set of difficulties than those experienced by novice/advanced beginner nurses.

The keyword <think> revealed difficulties with monitoring changes in condition of terminally ill patients and how to engage with them at the end of their lives. The keyword and group <family> emerged in both proficient/expert nurses and novice/advanced beginner nurses. Even with the additional years of clinical experience, it was difficult for proficient/expert nurses to be aware of the transition to the end of life. Recognizing shifts in the care needs and condition of patients is important since these gradually change. The various changes that each patient experiences at the end of life requires different responses based on the nurse's clinical experience. Many proficient/expert nurses found it difficult to deal with these changes. In a previous study, most health professionals did not feel that changes to their own practice were difficult in such situations, but noted more difficulties with changing end-of-life care within their team or organization.[26]

Learning needs for novice/advanced beginner nurses were divided into four main groups: <patient>, <family>, <experience>, and <care>. These keywords reflected learning needs for knowledge and experience related to palliative care and communication skills. Thompson et al. also indicated that novice nurses feel unprepared to care for their dying patients.[27]

The learning needs of proficient/expert nurses for angel care was reflected in the keywords <teaching>, <learning>, <basic>, and <angel make-up> (an aspect of angel care implementation). There was strong demand among proficient/expert nurses for learning about angel care, including methods for teaching it as well as basic and proper skills for performing it. According to Yokota et al,[28] managers are expected to create an environment in which second- and third-year nurses can demonstrate their self-efficacy in the workplace. Saunders et al. identified a clear need for staff training in end-of-life care and an understanding of strategies to reduce stress when caring for dying patients, as well as improving communication with team members and families.[29] For proficient/expert nurses, there was a strong need for learning about countermeasures taken by other hospitals, facilities, and other wards to address the spread of COVID-19, as evidenced by the keyword <coronavirus spread>. This may reflect the confusion resulting from different responses and countermeasures implemented by other hospitals and wards. Since data were collected during the COVID-19 pandemic, acute care ward nurses

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were confused about how to respond to policy changes made by the government and the Ministry of Health, Labour and Welfare on a monthly basis. These results suggest that proficient/expert nurses were troubled by the hospital and ward environment, for example, due to restrictions on visits and the availability of private rooms for family members and patients to spend time together.

This study has some limitations. First, study participants worked in the same area of western Japan and were all women. Second, with one exception, all interviews were conducted online due to the COVID-19 pandemic, given that face-to-face interviews were not possible. Thus, it was more difficult to observe participants' facial expressions and get a sense of their emotions. There may also have been content that was difficult to discuss without a face-to-face conversation. Nonetheless, we were able to gain valuable insight through interviews with nurses at the forefront of end-of-life care during the COVID-19 pandemic.

In conclusion, both novice/advanced beginner and proficient/expert nurses genuinely cared about patients and their families. Both groups of nurses experienced confusion about how to support patients given the visiting restrictions in place at the end of the patients' lives during the COVID-19 pandemic. Novice/advanced beginner nurses felt anxiety and confusion, and were overwhelmed with how to care for terminal patients. Many voiced a sense of difficulty with patient care and illness, suggesting a need for educational opportunities on communications with patients and their families and practical skills in palliative care. On the other hand, proficient/expert nurses were able to think about how to make patients and their families feel better, and were able to think specifically about post-mortem care. Many proficient/expert nurses were thinking not only about patient care but also about patients' room environment and how to spend time with their families. They sought learning opportunities regarding angel care, including methods of teaching it and basic techniques for performing it, and realized that information sharing within wards, chain of command within the hospital, information exchange with other hospitals, and inter-hospital collaboration were all important during COVID-19 pandemic.

Acknowledgments: We thank all nurses who participated in this study. This work was supported by JSPS KAKENHI Grant Number JP19K1953.

The authors declare no conflict of interest.

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