KERO, J., KOIVISTO, J.-M., LEE, S.H. and HAAVISTO, E. 2024. Nurses' perceptions to alleviate dyspnoea in inpatients with advanced cancer while receiving palliative care. *Nursing open* [online], 11(1), e2038. Available from: https://doi.org/10.1002/nop2.2038

Nurses' perceptions to alleviate dyspnoea in inpatients with advanced cancer while receiving palliative care.

KERO, J., KOIVISTO, J.-M., LEE, S.H. and HAAVISTO, E.

2024

Received: 6 March 2022 | Revised: 5 June 2023 | Accepted: 19 October 2023

DOI: 10.1002/nop2.2038

RESEARCH ARTICLE

NursingOpen Open Access WILEY

Nurses' perceptions to alleviate dyspnoea in inpatients with advanced cancer while receiving palliative care

Johanna Kero[1] | **Jaana-Maija Koivisto**[1,2] | **Siew Hwa Lee**[3] | **Elina Haavisto**[1,4]

[1]Department of Nursing Science, Tampere University, Tampere, Finland

[2]Smart Services Research Unit, Häme University of Applied Sciences, Hämeenlinna, Finland

[3]School of Nursing, Midwifery and Paramedic Practice, Robert Gordon University, Aberdeen, UK

[4]Tampere University Hospital, Tampere, Finland

Correspondence
Johanna Kero, Department of Nursing Science, Tampere University, Arvo Ylpön katu 34, 33520 Tampere, Finland.
Email: johanna.kero@tuni.fi

Funding information
Government Research Funding: Satakunta Hospital District, Grant/Award Number: 502/2018

Abstract

Aim: To explore nurses' perceptions to alleviate dyspnoea in inpatients with advanced cancer while receiving palliative care.

Design: A descriptive qualitative design.

Methods: Seven focus groups were conducted with nurses ($n = 27$) from five specialized palliative care wards in four hospitals in south and southwest Finland. The focus groups were conducted between June and November 2019, and the transcripts were analysed using inductive analysis.

Results: The findings revealed three categories: recognizing dyspnoea is a multi-faceted problem, dealing with the complexity of assessment of dyspnoea and strategies for relieving dyspnoea. Nurses perceived the complexity of dyspnoea as a symptom and emphasized the importance of utilizing patients' subjective experiences and consistent assessment scales to determine its severity. Furthermore, nonpharmacological interventions are as pertinent as pharmacological and medical interventions. The findings can assist nurses in selecting appropriate interventions for dyspnoea care, ultimately enhancing the quality of patient care and patient safety.

KEYWORDS
cancer, dyspnoea, nurses' perceptions, palliative care, qualitative research

1 | INTRODUCTION

Every year palliative care is needed by more than 50 million people worldwide (Connor, 2020). In patients with cancer receiving palliative care, dyspnoea is one of the most frequently experienced symptoms, reported to occur in 50%–70% of patients (Thomas et al., 2011). Dyspnoea is defined as complaints of 'unpleasant or uncomfortable respiratory sensations' (Meek et al., 1999). Despite high prevalence and burden of dyspnoea in patients with advanced cancer (Gupta et al., 2021), its underlying causes are less understood (Ekström et al., 2016) and less recognized than other symptoms such as pain (Chin & Booth, 2016). The condition remains insufficiently controlled (Ekström et al., 2016), and its palliation has received little attention (Ambrosino & Bracchia, 2019; Gupta et al., 2021; Pisani et al., 2018).

Palliative care has been integrated into all levels of healthcare services such as palliative care units (Sekse et al., 2018). As coordinators of care, nurses play an important role, paying attention to and responding to the patients' needs. They also act as a link between different professional groups and between the patient and the family, which contributes toward maintaining the quality of palliative care delivered to the patient. (Haavisto et al., 2021; Hökkä et al., 2021; Sekse et al., 2018).

Even though nurses play an important role, most of the publications on managing dyspnoea patients in relation to palliative care settings are medical discussion papers or pharmacological management of dyspnoea (Crombeen & Lilly, 2020; Kamal et al., 2012). Less is known how nurses make decisions for patients with dyspnoea in advanced stage of cancer. In addition, nursing guidelines and recommendations for dyspnoea care are lacking, and existing publications are written from a medical viewpoint such as Campbell (2017) and Wong et al. (2017), and the guidelines with recommendations targeted more at clinicians than nurses such as Hui et al. (2021) and National Comprehensive Cancer Network (NCCN) (2021). Therefore, the aim of this study is to explore nurses' perceptions of alleviating dyspnoea among inpatients with cancer receiving palliative care.

2 | BACKGROUND

Nurses are part of the multi-professional team in patient care (Elsous et al., 2017). Nurses should be aware of the approaches in assessing dyspnoea among patients with cancer (Thomas et al., 2011), and they should also be aware of the patient's psychological, social and spiritual needs (Haavisto et al., 2021; Hökkä et al., 2021; Lok, 2016). Studies have indicated that nurses require more knowledge to deliver palliative care appropriately to support patients with dyspnoea (Campbell, 2017; Pisani et al., 2018; Sugimura et al., 2017). Nursing competency in palliative physical care calls for not only symptom management, which is one of the most important aspects, (Haavisto et al., 2021) but also knowledge and skills of the care of respiratory symptoms (Soikkeli-Jalonen et al., 2020). Therefore, identifying and managing symptoms in patients are important aspects of nurses' palliative care competence (Hökkä et al., 2021). A previous survey by Sugimura et al. (2017) focused on isolated phenomena such as the support provided by nurses to patients with dyspnoea in palliative care; however, there is a lack of what psychological and social-environmental support entails.

A systematic screening and assessment of dyspnoea should be performed for every patient with the help of validated patient-reported outcome measures (Campbell, 2017; Hui et al., 2021). Therefore, validated observation measurements such as vital signs should be used (Campbell, 2017). In addition, dyspnoea is known to be associated with anxiety and depression, and often causes physical and psychological distress (Wong et al., 2017); it may become unbearable, especially in patients who are terminally ill (Pisani et al., 2018). Hui et al. (2021) suggests, a comprehensive evaluation of the severity, chronicity, potential causes, triggers and associated symptoms should be undertaken in a multidimensional approach that also considers the physical, social, emotional and spiritual needs of the patients (Lok, 2016; Pisani et al., 2018).

Nonpharmacologic interventions consisting of moderate practices have been recommended for the management of dyspnoea (Hui et al., 2021) and should be considered as first-line treatment for adults with advanced cancer (Gupta et al., 2021). Although nonpharmacologic recommendations include changes to posture, relaxation, distraction and acupressure interventions, these are not backed by strong evidence (Hui et al., 2021). Moreover, counselling and supportive interventions (Thomas et al., 2011), such as educational, psychosocial and emotional support for the patients and family members, have also been recommended as nonpharmacological interventions in palliative care (Haavisto et al., 2021; Hökkä et al., 2021; NCCN, 2021).

Pharmacologic interventions can be considered when neither the treatment of the underlying conditions nor the nonpharmacological interventions yield relief to the patient (Hui et al., 2021; NCCN, 2021). As important as it is, pharmacological management of dyspnoea can be difficult even when patients are on maximum medical therapy as there is evidence of adverse effects and limited efficacy (Lok, 2016). When life expectancy is a matter of days, continuous palliative sedation may be considered if there are no other options for managing patients' dyspnoea (Hui et al., 2021).

Taken together, research on managing dyspnoea from nurses' perspectives is limited especially for conditions of advanced cancer when patient is receiving palliative care. Therefore, it is timely to further investigate the components of effective dyspnoea care provided by nurses regarding alleviating dyspnoea in inpatients with advanced cancer while receiving palliative care.

3 | METHODS

3.1 | Design

A descriptive qualitative design was chosen to explore nurses' perceptions of alleviating dyspnoea in patients with advanced cancer while receiving palliative care. The study utilized descriptive qualitative design as it is flexible and the exploratory approach seeks to provide a broad insight into the phenomena of nurses' experiences of supporting patients with advanced cancer experiencing dyspnoea (Sandelowski, 2000).

3.2 | Participants

In line with the purposive sampling technique (Elo et al., 2014; Moser & Korstjens, 2018), nurses with experience in caring for inpatients with cancer were recruited from five specialized palliative care wards in four hospitals and two hospital districts in south and southwest Finland. Per the eligibility criteria, participation was restricted to Registered Nurses who had provided direct care to inpatients with cancer in a palliative care setting and were willing to participate in the study.

Twenty-seven nurses (aged between 24 and 60 years; mean = 42.4 years) participated in the study (Table 1). Their nursing experience ranged from 11 months to 37 years (average = 14 years). Their working experience in a specialized palliative care ward ranged between 5 months and 19 years (average = 6 years). Seventy per cent of the nurses had received some updated palliative care education; however, this varied from a one-day educational event to a full year

TABLE 1 The description of participants ($n = 27$) of the study.

Age range in years M (range)	42.4 (24–60)
Number of years working experience as a nurse M (range)	14.6 (<1–30)
Number of years working on a specialized palliative care ward M (range)	4,6 (<1–19)
Palliative update education (from a day event to many specialized courses) % (*n*)	63 (17)

of professional specialized education. The inclusion of nurses from multiple palliative care wards and organizations ensured diversity in responses and coverage of the research topic from various perspectives.

3.3 | Data collection

Data were collected between June 2019 and November 2019 by three experienced qualitative researchers. This study is a part of a larger research project of care of inpatients with cancer receiving palliative care on pain and dyspnoea. The focus group, which concerned nurses' perceptions of the dyspnoea care, lasted between 30 and 45 min. The researchers were not known to the nurses prior to the study. The background (experience, role and position) of the researchers was disclosed to the nurses prior to the focus group. Six focus groups and one pair interview were conducted by the researchers on the topic of nursing care of dyspnoea of inpatients with cancer receiving palliative care. The focus groups were scheduled around the nurses' work shifts and at an agreed time and place by ward nurses. The aim was to include four to eight participants in each focus group session. However, the size of the groups varied from three to six participants. One pair interview was conducted as the nurses' work situation on the ward was demanding and did not permit more than two nurses to attend the interviews. As the two nurses have given up their time, it was not appropriate to turn them away. Each focus groups were conducted in Finnish and were audio-recorded. Prior to the focus group and pair interviews, the participants were asked to complete a form about their demographic information such as their age, education, status of palliative education, title, work experience as a nurse and work experience in a palliative care ward. The interview guide for researchers of this study consisted of the theme of *what are the nurses' perceptions of alleviating dyspnoea in patients with cancer in the palliative wards?* The participants were asked to clarify their answers through follow-up questions (Polit & Beck, 2017) and asked to provide examples. During the focus group and pair interview, all participants received the same orientation before the interview and the participants were asked to describe the nursing care of dyspnoea among the care of pain given to inpatients with cancer receiving palliative care.

3.4 | Data analysis

The data were analysed using the three steps of inductive analysis, preparation, organizing and reporting. In the preparation, the transcripts were read and re-read, and the data were simplified into analysable expressions and coded. Next, the data were condensed into meaningful units. The units with similar content were grouped into seven subcategories by researchers and labelled. Next, the subcategories were assigned to three broad categories. The research group of four researchers discussed the data until a consensus was reached on the categories and subcategories. In reporting, the data were summarized into three categories with seven subcategories. (Elo & Kyngäs, 2008; Graneheim & Lundman, 2004).

3.5 | Ethics

Research Ethics Committee approval for the study was obtained from the ethical committee of (REDACTED). Written consent was obtained from all the participants (Regulation of the European Parliament and the Council of the European Union, 2016). All the participants were also informed that they could withdraw at any point during the study (European Science Foundation and ALL European Academies, 2017).

3.6 | Rigour

The trustworthiness of the study was presented in terms of credibility, transferability and confirmability (Elo et al., 2014; Polit & Beck, 2017). The use of focus groups interviews was considered an appropriate method of data collection as it provided an opportunity for the researcher to gain information-rich about the shared perspectives of the participants (Sandelowski, 2000). The participants were recruited from five palliative care wards from four different hospitals to achieve various perceptions. The recorded focus group discussions were transcribed verbatim in Finnish by the researchers and regarding the quotations, back-translation procedures were used. Although one researcher was primarily responsible for the analysis, all members of the research team participated each step of the analysis process. In addition, the researchers revisited the original data several times during the analysis. The research group discussed subcategories and categories, ultimately reaching a consensus. To ensure the credibility of the study, an example of the original expressions is presented in Table 2. To keep the confidentiality of the nurses, the quotations said by certain nurses were kept anonymous (Saunders et al., 2015). The checklist

TABLE 2 An example of the formation of Recognizing dyspnoea as a multi-faceted problem.

Original expression, translated in English	Simplification	Codes	Subcategory	Category
Yeah, and it's so diverse, and the reasons are different. Has the dyspnoea started rapidly, or could it be related to lung cancer? And most likely, at some point, if it comes suddenly, when should we take action to start investigating it? We always have to consider the cause and what it could be about, whether it's on the lung side or if there's something else going on. The other thing that crossed my mind was that the symptom could be caused by multiple factors. What is dyspnoea? There is a need to differentiate between 'breathlessness' and 'dyspnoea'. As a nurse you need to think about whether the symptom is dyspnoea and how to manage it. It is important to find out whether it is mental anxiety or something else to provide care.	Dyspnoea is diverse, and the causes are different: it can start rapidly, be related to lung cancer, nurses consider when it should investigate and whether it's in the lungs or due to something else. The symptom could have multiple causes. Nurses need to distinguish between 'breathlessness' and 'dyspnoea' and consider if the symptom is dyspnoea and how to handle it. It's crucial to determine if it's caused by mental anxiety or something else in order to provide appropriate care.	Diverse Multiple causes May start rapidly Related to lung cancer In lungs Caused due to something else Difference between breathlessness and dyspnoea	Physical symptoms of dyspnoea	Recognizing dyspnoea as a multi-faceted problem
And sometimes a patient may be terrified of the experience of dyspnoea, and it can be challenging to gauge its intensity without physical signs. Therefore, dyspnoea does not look bad.	A patient may be extremely frightened of experiencing dyspnoea, and it can be difficult to assess its severity without physical signs. Dyspnoea may not appear severe.	Fear of dyspnoea Difficult to separate from physical signs. Mild physical symptom	Psychological aspects of dyspnoea	

for consolidated criteria for reporting qualitative studies (COREQ) was used to fulfil the requisite components of study design (Tong et al., 2007).

4 | RESULTS

4.1 | Categories of Nurses' perceptions of dyspnoea care

Nurses' perceptions of dyspnoea care were grouped into three: (1) Recognizing dyspnoea as a multi-faceted problem, (2) Dealing with the complexity of assessment of dyspnoea and (3) Strategies for relieving dyspnoea.

4.1.1 | Recognizing dyspnoea as a multi-faceted problem

The nurses discussed their challenges in nursing patients with dyspnoea and recognized that it can be multi-faceted which includes physical and psychological factors (Table 3). Their descriptions of *the physical symptoms* were based on their observations of patients' physical signs such as laboured breathing. The nurses highlighted the need to identify the causes and the difference between symptoms of breathlessness and dyspnoea. The causes of these two symptoms were seen as important. For instance, the nurses had to determine whether the symptoms were due to mental anxiety, cancer, the patient's reaction or something else. A nurse expressed her thoughts in these words:

> The other thing that crossed my mind was that the symptom could be caused by multiple factors. What is dyspnea? There is a need to differentiate between 'breathlessness' and 'dyspnea'. As a nurse you need to think about whether the symptom is dyspnea and how to manage it. It is important to find out whether it is mental anxiety or something else to provide care.
> (Focus group 6)

The nurses also shared that the *psychological aspects of dyspnea* could affect the patient; they noted that the patients' fears could be linked to dyspnoea. They stressed that the psychological distress of dyspnoea was as important as the physical signs. Some patients experienced dyspnoea without the physical signs while others were distressed by the episodes of dyspnoea. Below is a nurse's perception of the psychological aspects of dyspnoea:

TABLE 3 Nurses' perceptions of recognizing dyspnoea as a multi-faceted problem, dealing with the complexity of assessment of dyspnoea and strategies for relieving dyspnoea.

Category	Subcategory
Recognizing dyspnoea as a multi-faceted problem	Physical symptoms of dyspnoea Psychological aspects of dyspnoea
Dealing with the complexity of assessment of dyspnoea	Objective assessment of dyspnoea Identification of the causative factors of dyspnoea
Strategies for relieving dyspnoea	Methods for controlling dyspnoea Methods of preventing dyspnoea Support for the patient and family

> And sometimes a patient may be terrified of the experience of dyspnea, and it can be challenging to gauge its intensity without physical signs. Therefore, dyspnea does not look bad.
>
> (Focus group 6)

The nurses noted that anxiety could also be associated with dyspnoea: the thought of dyspnoea could evoke feelings of anxiety, or the anxiety could stem from the fear of experiencing dyspnoea. Most patients found the presence of a nurse reassuring, especially if they were alone in their hospital rooms. The following comments capture the nurses' perceptions of patient anxiety:

> Dyspnea experience, it is so distressing and scary.
>
> (Focus group 5)

> In some situations, medications have a calming effect; however, some patients became distressed if they were left on their own, and anxiety causes the dyspnea to worsen.
>
> (Focus group 6)

4.1.2 | Dealing with the complexity of assessment of dyspnoea

Nurses´ perceptions related to assessment of dyspnoea mainly revolved around objective assessment and identification of causative factors (Table 3). The nurses stressed the importance of being *objective in the assessment of dyspnoea* and recommended certain patient observations, such as the general condition of the patient, mucus secretion, the colour of their lips, whether the patient appeared relaxed or restless and the depth of their breathing. Below are some of the responses shared by the nurses:

> Just the general status of the patient, blue lips, chest movements, visible accessory muscles of respiration, color [of the skin].
>
> (Focus group 1)

> Whether the patient is restless or calm … maybe the patient has difficulties in coping.
>
> (Focus group 1)

> Sound [of breathing], mucus, mucus monitoring.
>
> (Focus group 1)

Most importantly, the nurses preferred it valuable to use measurement scales for the assessment of dyspnoea as the scales evaluated vital parameters such as the respiratory rate, oxygen saturation and pulse rate. Two nurses gave examples of vital parameters:

> The respiration rate is important as well as whether the accessory muscles of respiration are used.
>
> (Focus group 1)

> And the pulse [of the patient].
>
> (Focus group 1)

However, some nurses explained that measurement scales were not the ideal assessment option because patients' physical signs of dyspnea varied depending on how they coped with their difficulties in breathing. Two nurses had this to say about the measurement scales:

> In number two [referring to the Visual Analog Scale] of dyspnea, there is shortness of breath and [the patient] can't talk. It is remarkable how differently people react to this [dyspnea].
>
> (Focus group 6)

> And then there is the pulse oximetry, but it doesn't tell everything.
>
> (Focus group 1)

The participants not only observed patients' physical signs but correlated them with their assessment findings. Most nurses linked dyspnoea to other activities, such talking or physical exertion. A nurse stated the following:

> The patient feels breathless while speaking or moving.
> (Focus group 1)

The nurses acknowledged that the *identification of the causative factors of dyspnoea* was as important as the physical signs of the condition. Accordingly, they tried to distinguish between the physiological causes and the psychological dimensions of dyspnoea. They further noted that clinical observation and an assessment of dyspnoea were insufficient and that it was important to consider the underlying problems faced by patients. A nurse indicated what to look out for:

> Is there fluid in the lungs? Are there any signs of heart failure? These should be noted. And whether there is an obstructive tumor or are there any current problems? Understanding the diversity of what this is about now and the diversity of symptomatic care.
> (Focus group 6)

The nurses explained that causative factors could also be linked to psychological issues; therefore, assessing a patient's psychological status could help in understanding their condition better. The nurses also questioned the difference between 'difficulty in breathing', 'breathlessness', 'dyspnoea' and the 'distressed situation of the patient'. A nurse summarized it as follows:

> What is the reason for breathlessness—is it dyspnea or is it that the patient's overall condition is poor?
> (Focus group 6)

4.1.3 | Strategies for relieving dyspnoea

While discussing their perceptions about the management of dyspnoea, nurses suggested several strategies: methods for relieving dyspnoea, methods of preventing dyspnoea and support for the patient and family (Table 3). The nurses agreed that pharmacological *methods for relieving dyspnoea symptoms* were the most common. Nurses mentioned the use of bronchodilators, opiates and sedatives as symptomatic medications for relieving dyspnoea among patients with cancer in their palliative care wards. Some nurses questioned the relevance of administering oxygen especially to patients with cancer, although oxygen has been considered an important part of dyspnoea management. Two of the nurses alluded to the adverse effects of giving oxygen:

> Patients are put on oxygen; sometimes, it does more harm than good.
> (Focus group 3)

> Sometimes, however, oxygen is a contradictory thing. It doesn't always help, but sometimes, for example, cancer patients with COPD may receive benefits if they are on a low oxygen flow.
> (Focus group 3)

The nurses acknowledged that sedation in an acute emergency situation was the last resort and was reserved for patients with severe dyspnoea in a terminal phase (e.g., if the patient had an obstructive condition such as tracheal tumour). One nurse explained it as follows:

> [Sedation in that case if] cancer tumor is pressing on patient's trachea which can cause a blockage or something.
> (Focus group 1)

While discussing the *methods of preventing dyspnea*, the nurses spoke about the use of positional therapy to aid breathing. One of them said the following:

> And so that you don't rely just on the medications. There are other methods, like when you see there is a shortness of breath, the patient's position may have a lot to do with how they breathe.
> (Focus group 6)

The nurses also highlighted the importance of ensuring proper ventilation in the patient's surroundings. They explained that ventilating the patient's room by opening the windows or blowing air onto the patient's face could be more effective than oxygen therapy. For example, a nurse said:

> Air blowing on the face may help and be better than oxygen to ease breathing, and it might give a sense that you can breathe easily.
> (Focus group 5)

The nurses mentioned another preventive method to improve positive expiratory pressure (PEP): asking a patient to blow air into a bottle containing water. A nurse explained how the method could be used:

> Before a patient experiences dyspnea, it is possible to prevent it in a certain way, for example, blowing into a PEP bottle and at the same time ensuring they are sitting up in a position that makes breathing easier.
> (Focus group 2)

The nurses agreed that *support for the patient and the family* was an important part of dyspnoea management. They shared that it was important to share information with the patients and family members and discuss emergency action, such as the need for sedation in case of a risk of suffocation, such as in tracheal cancer or other obstructive conditions. A nurse described the following scenario to illustrate the point:

> If the patient has severe anxiety, shortness of breath, or there is difficulty in breathing and you expect they might suffocate, for example, in the case of tumor of the neck area or a hemorrhage or something like that, so at that point [sedation] can certainly be discussed, and the patient and the doctor can make a shared decision beforehand.
>
> (Focus group 5)

The nurses added that reassuring or pacifying the patient was a useful method to prevent the dyspnoea from worsening. This typically involved listening to the patient and calming them, perhaps by giving a hug. A nurse shared some examples for providing comfort:

> But somehow giving the person a bear hug, telling them that everything will be all right, don't worry, we can help and are here for you, don't be scared… In this way, we can start to alleviate the symptom for the most part.
>
> (Focus group 6)

Typically, patients with cancer receiving palliative care do not prefer to be alone, and the nurses mentioned that the physical presence of a nurse or a volunteer, if available, could be an important part of dyspnoea management. A nurse stated the following:

> Well, if possible, the presence [of a nurse], discussion [with the patient] and if we have a volunteer who are willing to visit them, we can introduce them to the patients.
>
> (Focus group 4)

5 | DISCUSSION

The aim of this study was to explore nurses' perceptions to alleviate dyspnoea in inpatients with advanced cancer while receiving palliative care. Their perceptions have been grouped into three categories: recognizing dyspnoea as a multi-faceted problem, dealing with the complexity of assessment of dyspnoea and strategies for relieving dyspnoea. According to data shared by the nurses, the nurses' perceptions of recognizing dyspnoea can be vague, and it is challenging to differentiate dyspnoea symptom among inpatients with cancer receiving palliative care. This finding is similar to the study reported by Patel (2018): it is not only dyspnoea that is problematic for patients; it is a combination of symptoms such as pain, anxiety and/or fear, and these tend to worsen dyspnoea. Thus, nurses need to examine the underlying causes of a patient's symptoms—not only holistically but also individually.

Our focus group's perceptions also indicate that dyspnoea assessment should include both measurements or scales and a physical examination of the patient. Similar findings were reported by Patel (2018), but they are not part of the medical guidelines (Hui et al., 2021; NCCN, Clinical Practice Guidelines in Oncology, 2021). The guidelines (Hui et al., 2021; NCCN, Clinical Practice Guidelines in Oncology, 2021) also do not refer to the use of clinical observation of patients—a method that was widely used to assess dyspnoea by the nurses participating in this study. In fact, the nurses relied more on their clinical observations, such as the colour of the patient's skin or the sound of their breathing, than on pulse oximeters to measure the patient's oxygen saturation. Most of them did not use pulse oximeters routinely. VAS was the only assessment scale that the nurses mentioned; however, this was not used routinely.

The nurses discussed that physiological measures cannot be a reliable source of information on patients' dyspnoea as symptoms vary across individual patients and depend on the patient's subjective expression. For respiration rate, patients' subjective expressions tend to be more informative than clinical measurements alone. Interestingly, physical examination, such as monitoring the patient's saturation level or respiration rate, is not recommended in the guidelines (Hui et al., 2021; NCCN, 2021) even though previous studies have substantiated the efficacy of nonpharmacological interventions over scales (e.g., Numerical Rating Scale or the modified Borg Scale) or clinical measurements (Gupta et al., 2021).

The nurses in this study referred to the emotional aspects of dyspnoea care but they did not address any spiritual aspects of care, even though such aspects are considered part of a patient's palliative care needs (Haavisto et al., 2021; Hökkä et al., 2020). Interestingly, previous reports have either focused solely on emotional support (NCCN, 2021) or not addressed emotional and spiritual support (Hui et al., 2021). In contrast, this study recommends that dyspnoea management should address both the emotional and spiritual needs of inpatients with advanced cancer while receiving palliative care, and these needs should be better monitored by nurses in the future.

The nurses in this study identified pharmacological interventions, such as the use of opiates, as the most important means of dyspnoea control. They did not favour nonpharmacological interventions, even though guidelines suggest that nonpharmacological interventions should be used as the first line of treatment (Hui et al., 2021). With regard to oxygen therapy, the nurses agreed with the guidelines that it was effective only if the patient had hypoxemia (Hui et al., 2021; NCCN, 2021). Interestingly, sedation in acute emergency was seen as a pharmacological intervention by the nurses. Sedation is most often used in the last few days of a patient's life and occasionally in case of massive bleeding (Hui et al., 2021). While the nurses agreed that it was seldom used, they still highlighted its role dyspnoea relief. It must be noted that nurses play an important role in considering, implementing and monitoring sedation and in sharing information with the patients and their families (Heino et al., 2022).

Our findings revealed that prevention interventions are an important part of dyspnoea management and a part of the advance care plan. In line with medical guidelines and earlier studies (Gupta et al., 2021; Hui et al., 2021; NCCN, 2021; Wong et al., 2017), nurses suggest that that room ventilation (e.g., opening the windows) and fan therapy can be beneficial in alleviating dyspnoea in patients with cancer receiving palliative care. The nurses also emphasized the value of positional therapy for this patient group, which supports the finding by Campbell (2017). Moreover, positive expiratory pressure (PEP) has been identified as an important dyspnoea prevention measure, though neither of the medical guidelines (Hui et al., 2021; NCCN, 2021) recommended it.

Supporting the work by Pisani et al. (2018), this study emphasizes the need to address the emotional and spiritual aspects of patients such as anxiety, which may stem from a feeling of loneliness. The nurses in this study discussed different strategies to distract a patient's thoughts in order to alleviate dyspnoea, including being by the patient's side, which is also listed as a medical guideline (Hui et al., 2021). The participants also acknowledged the importance of sharing information with patients and their family members. They underscored the statistically significance of having discussions with patients, their family members and healthcare professionals, which supports the findings reported by Thomas et al. (2011), Haavisto et al. (2021) and Hökkä et al. (2020, 2021). It also echoes the medical guidelines that recommend sharing of information with patients and family members (Hui et al., 2021; NCCN, 2021). The nurses in this study recommend the use nonpharmacological methods more routinely.

The strength of this study is that the findings are based on data collected from two hospital districts and four large hospitals in south and southwest Finland, which cater to 40% of the Finnish population. All focus groups and the pair interview with the study participants were conducted face-to-face, which enhances the reliability of this study.

The limitations of this study are that the focus group interviews were conducted by three researchers, and therefore, consistency in the interviews could not be guaranteed. The interviews were conducted in a relatively large area in Finland and in five wards; thus, more than one researcher was needed. Additionally, the data was collected in two different hospital districts simultaneously. Also, the intention was to gather focus groups consisting of four to eight nurses, but due to the demanding situation in the wards, there were three to six nurses per focus group and one pair interview, totalling 27. As a result, during the analysis of the data, it was observed that the data were partly cumulative, partly superficial. Nevertheless, nurses generally expressed similar experiences and perceptions, and valuable information was obtained.

6 | CONCLUSIONS

To provide holistic nursing care of dyspnoea to an inpatient with cancer receiving palliative care, nurses need to focus on the characteristics of dyspnoea, its assessment and its strategies in managing dyspnoea. They should be able to assess the physical, psychosocial, emotional and spiritual needs of the patient. They should use both the patients' subjective self-assessment and objective measurement scales to assess the severity of dyspnoea. The results of this study indicate that nurses should also incorporate nonpharmacological interventions, alongside pharmacological and medical interventions. Because dyspnoea care within a palliative setting is complex, continuing professional education should be provided to nurses to develop their knowledge of dyspnoea care. Future studies should focus on educational interventions to improve nurses' knowledge of nursing care of dyspnoea, with a specific focus on their role.

ACKNOWLEDGEMENTS

Sincere thanks to the nurses who participated in the research.

FUNDING INFORMATION

The study was partly funded by Government research funding: Satakunta Hospital District (502/2018).

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data cannot be shared for confidentiality matters.

ETHICS STATEMENTS

Ethical approval was obtained from the ethical committee of University of Turku, Finland (15/2019).

ORCID

Johanna Kero https://orcid.org/0000-0002-3631-1690
Jaana-Maija Koivisto https://orcid.org/0000-0001-5846-9360
Siew Hwa Lee https://orcid.org/0000-0002-5997-004X

REFERENCES

Ambrosino, N., & Bracchia, C. (2019). Strategies to relieve dyspnoea in patients with advanced chronic respiratory diseases. A narrative review. *Pulmonology*, *25*(5), 289–298. https://doi.org/10.1016/j.pulmoe.2019.04.002

Campbell, M. L. (2017). Dyspnea. *Critical Care Nursing Clinics of North America*, *29*(4), 461–470. https://doi.org/10.1016/j.cnc.2017.08.006

Chin, C., & Booth, S. (2016). Managing breathlessness: A palliative care approach. *Postgraduate Medical Journal*, *92*, 393–400. https://doi.org/10.1136/postgradmedj-2015-133578

Connor, S. R. (2020). *Global atlas of palliative care* (2nd ed.). Worldwide Hospice Palliative Care Alliance.

Crombeen, A. M., & Lilly, E. J. (2020). Management of dyspnea in palliative care. *Current Oncology*, *27*(3), 142–145. https://doi.org/10.3747/co.27.6413

Ekström, M., Allingham, S., Eagar, K., Yates, P., Johnson, C., & Currow, D. C. (2016). Breathlessness during the last week of life in palliative care: An Australian prospective, longitudinal study. *Journal of Pain and Symptom Management*, *51*(5), 816–823. https://doi.org/10.1016/j.jpainsymman.2015.12.311

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness.

SAGE Open, *4*, 1–10. https://doi.org/10.1177/2158244014522633

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Elsous, A., Radwan, M., & Mohsen, S. (2017). Nurses and physicians attitudes toward nurse-physician collaboration: A survey from Gaza strip, Palestine. *Nursing Research and Practice*, *2017*(2017), 7406278. https://doi.org/10.1155/2017/7406278

European Science Foundation and ALL European Academies. (2017). The European code of conduct for research integrity (Revised Edition). http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, *24*, 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Gupta, A., Sedhom, R., Sharma, R., Zhang, A., Waldfogel, J. M., Feliciano, J. L., Day, J., Gersten, R. A., Davidson, P. M., Bass, E. B., & Dy, S. M. (2021). Nonpharmacological interventions for managing breathlessness in patients with advanced cancer. A systematic review. *JAMA Oncology*, *7*(2), 290–298.

Haavisto, E., Soikkeli-Jalonen, A., Tonteri, M., & Hupli, M. (2021). Nurses' required end-of-life care competence in health centres inpatient ward – A qualitative descriptive study. *Scandinavian Journal of Caring Sciences*, *35*(2), 577–585. https://doi.org/10.1111/scs.12874

Heino, L., Stolt, M., & Haavisto, E. (2022). The practices of nurses about palliative sedation on palliative care wards: A qualitative study. *Journal of Advanced Nursing*, *78*(11), 3733–3744. https://doi.org/10.1111/jan.15350

Hökkä, M., Martins, P. S., Kyngäs, H., Pölkki, T., & Hernández-Marrero, P. (2020). Nursing competencies across different levels of palliative care provision: A systematic integrative review with thematic synthesis. *Palliative Medicine*, *34*(7), 851–870. https://doi.org/10.1177/0269216320918798

Hökkä, M., Melender, H.-L., Lehto, J. T., & Kaakinen, P. (2021). Palliative nursing competencies required for different levels of palliative care provision: A qualitative analysis of health care professionals' perspectives. *Journal of Palliative Medicine*, *24*(10), 1516–1524. https://doi.org/10.1089/jpm.2020.0632

Hui, D., Bohlke, K., Bao, T., Campbell, T. C., Coyne, P. J., Currow, D. C., Gupta, A., Leiser, A. L., Mori, M., Nava, S., Reinke, L. F., Roeland, E. J., Seigel, C., Walsh, D., & Campbell, M. L. (2021). Management of dyspnea in advanced cancer: ASCO guideline. *Journal of Clinical Oncology*, *39*(12), 1389–1413. https://doi.org/10.1200/JCO.20.03465

Kamal, A. H., Maguire, J. M., Wheeler, J. L., Currow, D. C., & Abernethy, A. P. (2012). Dyspnea review for the palliative care professional: Treatment goals and therapeutic options. *Journal of Palliative Medicine*, *15*(1), 106–114. https://doi.org/10.1089/jpm.2011.0110

Lok, C. W. (2016). Management of breathlessness in patients with advanced cancer: A narrative review. *The American Journal of Hospice & Palliative Care*, *33*(3), 286–290. https://doi.org/10.1177/1049909114554796

Meek, A. M., Schwartzstein, R. M., Adams, L., Altose, M. D., Breslin, E. H., Carrieri-Kohlman, V., Gift, A., Hanley, M. V., Harver, A., Jones, P. W., Killian, K., Knebelm, A., Lareau, S. C., Mahler, D. A., O'Donnell, D., Steele, B., Stuhlbarg, M., & Titler, M. (1999). Dyspnea mechanisms, assessment, and management: A consensus statement. American Thoracic Society. *American Journal of Respiratory and Critical Care Medicine*, *159*, 321–340.

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *The European Journal of General Practice*, *24*(1), 9–18. https://doi.org/10.1080/13814788.2017.1375091

NCCN, Clinical Practice Guidelines in Oncology. (2021). Palliative care (Ver. 2.). Retrieved from https://www.nccn.org/professionals/physician_gls/pdf/palliative.pdf

Patel, M. S. (2018). Strategies for the optimal management of dyspnea in cancer patients with advanced illness. *Oncology*, *32*(12), 583–590.

Pisani, L., Hill, N. S., Grazia Pacilli, A. M., Polastri, M., & Nava, S. (2018). Management of dyspnea in the terminally ill. *Chest*, *154*(4), 925–934. https://doi.org/10.1016/j.chest.2018.04.003

Polit, D., & Beck, C. (2017). *Nursing research. Generating and assessing evidence for nursing practice* (10th ed.). Wolters Kluwer.

Regulation of the European Parliament and the Council of the European Union. (2016). *The protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC* (General Data Protection Regulation). Retrieved from https://eur-lex.europa.eu/eli/reg/2016/679/oj

Sandelowski, M. (2000). Focus on research methods whatever happened to qualitative description? *Research in Nursing & Health*, *23*, 334–340.

Saunders, B., Kitzinger, J., & Kitzinger, C. (2015). Anonymising interview data: Challenges and compromise in practice. *Qualitative Research*, *15*(5), 616–632. https://doi.org/10.1177/1468794114550439

Sekse, R. J. T., Hunskår, I., & Ellingsen, S. (2018). The nurse's role in palliative care: A qualitative meta-synthesis. *Journal of Clinical Nursing*, *27*, e21–e38. https://doi.org/10.1111/jocn.13912

Soikkeli-Jalonen, A., Stolt, M., Hupli, M., Lemetti, T., Kennedy, C., Kydd, A., & Haavisto, E. (2020). Instruments for assessing nurses' palliative care knowledge and skills in specialised care setting: An integrative review. *Journal of Clinical Nursing*, *29*(5–6), 736–757. https://doi.org/10.1111/jocn.15146

Sugimura, A., Ando, S., & Tamakoshi, K. (2017). Palliative care and nursing support for patients experiencing dyspnoea. *International Journal of Palliative Nursing*, *23*(7), 342–351. https://doi.org/10.12968/ijpn.2017.23.7.342

Thomas, S., Bausewein, C., Higginson, I., & Booth, S. (2011). Breathlessness in cancer patients: Implications, management and challenges. *European Journal of Oncology Nursing*, *5*, 459–469. https://doi.org/10.1016/j.ejon.2010.11.013

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, *19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042

Wong, S. L., Leong, S. M., Chan, C. M., Kan, S. P., & Cheng, H. W. B. (2017). The effect of using an electric fan on dyspnea in Chinese patients with terminal cancer: A randomised controlled trial. *The American Journal of Hospice & Palliative Care*, *43*(1), 42–46. https://doi.org/10.1177/1049909115615127

How to cite this article: Kero, J., Koivisto, J.-M., Lee, S. H., & Haavisto, E. (2024). Nurses' perceptions to alleviate dyspnoea in inpatients with advanced cancer while receiving palliative care. *Nursing Open*, *11*, e2038. https://doi.org/10.1002/nop2.2038