Enhancing Comfort in Palliative Care: The Critical Role of Respiratory Therapists in Managing Dyspnea at End of Life

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Abstract

Background: Dyspnea is a prevalent and distressing symptom in palliative care patients, significantly impacting their quality of life. Respiratory therapists (RTs) play a vital role in managing this symptom, yet detailed studies evaluating the effectiveness of their interventions are sparse.

Methods: This retrospective study analyzed the medical records of 120 end-of-life patients in a palliative care unit at a large tertiary hospital from January 2016 to December 2017. The effectiveness of respiratory therapy interventions, including non-invasive ventilation, supplemental oxygen, and nebulized medications, was assessed based on changes in dyspnea severity and patient comfort levels.

Results: Post-intervention, patients exhibited significant improvements in dyspnea severity, with scores decreasing from an average of 7.4 to 4.2 on a 10-point scale (p < 0.001). Comfort scores improved from 4.6 to 7.8 (p < 0.001). The study also noted a reduction in the need for crisis interventions and an increase in patient satisfaction with care.

Conclusion: The findings underscore the critical role of respiratory therapists in enhancing the quality of life for palliative care patients by effectively managing dyspnea. These results advocate for the integration of specialized respiratory interventions in palliative care practices to improve patient outcomes.

Keywords: Palliative care, dyspnea management, respiratory therapy, end-of-life care, patient comfort, non-invasive ventilation

Introduction

Background: Dyspnea, or labored breathing, is a prevalent and distressing symptom experienced by many patients in palliative care, particularly those nearing the end of life with chronic respiratory or cardiovascular conditions. This symptom not only significantly diminishes the quality of life but also presents considerable challenges in clinical management. Respiratory therapists (RTs) play a pivotal role in alleviating this distressing symptom, utilizing their specialized skills to enhance patient comfort and respiratory function through various interventions (Kamal et al., 2012).

Significance: The integration of respiratory therapists into palliative care teams is crucial, as they bring a comprehensive understanding of respiratory care that extends beyond traditional medical treatments. Their expertise in airway management, ventilatory support, and non-invasive ventilation can be particularly beneficial in managing dyspnea without resorting to invasive procedures, which aligns with the palliative care philosophy of minimizing patient discomfort and invasive interventions (Brown-Saltzman et al., 2010).

Research Gap: Despite the apparent benefits, the specific contributions of respiratory therapists in palliative care settings remain underexplored, with limited quantitative data available on the outcomes of their

interventions in these settings. Most existing literature focuses broadly on palliative care interventions without isolating the specific impact of respiratory therapy (Brown-Saltzman et al., 2010). This gap highlights the need for focused research to quantify the value RTs add to the palliative care team, particularly in managing symptoms like dyspnea that significantly impact patient quality of life.

Study Objective: This study aims to fill the existing gap in the literature by providing a detailed analysis of the role of respiratory therapists in managing dyspnea among end-of-life patients in a palliative care setting. It seeks to evaluate how RT-led interventions contribute to symptom management and patient comfort, with a particular focus on non-invasive methods suited to the sensitivities of palliative care.

Literature Review

Dyspnea in Palliative Care: Dyspnea, characterized by a subjective experience of breathing discomfort, is a common symptom among patients receiving palliative care, particularly those with advanced cardiac and respiratory diseases. It is reported in up to 70% of terminally ill patients and is associated with significantly reduced quality of life (Kamal et al., 2012). Managing dyspnea effectively is a cornerstone of palliative care, aiming to relieve suffering and improve the quality of remaining life without necessarily altering the underlying disease trajectory (Narsavage et al., 2017).

Respiratory Therapists' Role in Managing Respiratory Symptoms: Respiratory therapists are uniquely equipped with specialized knowledge in cardiopulmonary physiology and expertise in managing respiratory insufficiency. They administer a range of therapies aimed at symptom relief, including oxygen therapy, nebulized medications, and manual techniques like chest percussion and postural drainage, which can alleviate discomfort and improve lung efficiency (Brown-Saltzman et al., 2010). RTs are also skilled in assessing patient respiratory status and tailoring interventions to individual needs, which is paramount in palliative care, where treatment goals prioritize patient comfort over disease modification (Narsavage et al., 2017).

Non-Invasive Ventilation in Palliative Care: Non-invasive ventilation (NIV) is another critical tool used by respiratory therapists to manage dyspnea in palliative care settings. NIV can provide significant symptomatic relief for patients suffering from acute respiratory distress by improving gas exchange and reducing the work of breathing (Baxter et al., 2013). It is particularly beneficial for patients who wish to avoid intubation and maintain communication with their families and caregivers in their final days (Baxter et al., 2013).

Challenges and Considerations: Implementing respiratory therapy in palliative care involves certain challenges. There is often a fine balance between providing sufficient respiratory support and ensuring that interventions do not become burdensome to the patient. The decision to implement techniques like NIV must be made in close consultation with patients, families, and the broader palliative care team to ensure that it aligns with the patients' goals of care (Scala, 2016).

Moreover, the psychological impact of respiratory distress and the visible aspects of respiratory support can affect patients' and families' perceptions of end-of-life care quality. Thus, respiratory therapists not only manage physical symptoms but also play a crucial role in educating and supporting patients and families through these complex decisions (Narsavage, et al., 2017).

Summary of Literature Gaps: While the involvement of respiratory therapists in managing dyspnea in palliative care settings is acknowledged, there is limited research specifically focused on measuring the outcomes of their interventions. Most existing studies broadly discuss the effectiveness of various palliative interventions without detailing the specific contributions of respiratory therapy (Arcuri et al., 2016). This highlights a significant gap in the literature and underlines the need for more focused studies to better understand and document the impact of RTs in this specialized field.

Methodology

This study aimed to assess the effectiveness of respiratory therapists in managing dyspnea among end-of-life patients in a palliative care setting within a large tertiary hospital. The retrospective analysis focused on evaluating patient outcomes related to comfort and symptom relief following respiratory therapy interventions.

Study Design: A retrospective cohort study was conducted using medical records from a single large tertiary hospital's palliative care unit. The period reviewed spanned from January 2016 to December 2018, encompassing a range of respiratory therapy interventions tailored to managing dyspnea in end-of-life care.

Setting: The study was conducted in the palliative care unit of a large tertiary hospital known for its comprehensive end-of-life care services. This unit specializes in providing symptom management and supportive care to terminally ill patients.

Participants

The study included patients who were:

- Aged 18 years and older.
- Diagnosed with a terminal illness, such as advanced cancer, end-stage heart failure, or chronic obstructive pulmonary disease (COPD).
- Experiencing moderate to severe dyspnea, as documented in their medical records.
- Receiving palliative care services during the study period.

Patients were excluded if they were:

- Under 18 years old.
- Not primarily receiving palliative care for terminal illness management.
- Lacking clear documentation of dyspnea or respiratory therapy interventions.

Data Collection

Data were collected from electronic health records (EHRs), focusing on:

- Patient demographics (age, gender, primary diagnosis).
- Details of respiratory therapy interventions (types of interventions, frequency, duration).
- Dyspnea severity before and after interventions, assessed using a standardized dyspnea scale.
- Patient comfort levels, measured using a validated comfort assessment tool.
- Duration of stay in palliative care and outcomes (improvement in symptoms, stabilization, or deterioration).

Respiratory Therapy Interventions: Respiratory therapy interventions included non-invasive ventilation, oxygen supplementation, nebulized treatments, and manual techniques like chest physiotherapy. The choice of intervention was based on individual patient needs and the clinical judgment of the respiratory therapists and palliative care team.

Outcome Measures: The primary outcome measure was the change in dyspnea severity post-intervention, while secondary outcomes included changes in overall patient comfort and satisfaction with care. Both were measured using pre-established scales documented in the patient's EHR.

Statistical Analysis: Data were analyzed using SPSS software (version 26.0). Descriptive statistics were used to summarize demographic and clinical characteristics. The effectiveness of respiratory therapy interventions was assessed using paired t-tests or Wilcoxon signed-rank tests, depending on data normality, to compare preand post-intervention dyspnea and comfort scores. Statistical significance was set at p < 0.05.

Ethical Considerations: The study was approved by the ethics committee. All patient data were de-identified to protect privacy and informed consent from participants was obtained.

Findings

The study assessed the effectiveness of respiratory therapy interventions on dyspnea management in end-oflife patients within a palliative care setting. A total of 120 patients met the inclusion criteria and were part of the retrospective analysis. The interventions significantly impacted the management of dyspnea, improving patient comfort and symptom severity. **Patient Demographics and Clinical Characteristics:** The cohort consisted predominantly of patients with advanced cancer (50%), followed by end-stage heart failure (30%), and chronic obstructive pulmonary disease (20%). The average age of participants was 68 years, with a balanced gender distribution. Table 1 summarizes the baseline characteristics of the study population.

Characteristic	Total (N=120)		
Age, mean (SD)	68 (9.2)		
Gender, n (%)			
- Male	60 (50%)		
- Female	60 (50%)		
Primary Diagnosis, n (%)			
- Advanced Cancer	60 (50%)		
- End-stage Heart Failure	36 (30%)		
- COPD	24 (20%)		
Dyspnea Severity Pre-Intervention, mean (SD)	7.4 (1.5)		

Table 1: Baseline	Characteristics	of Study Population
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Effectiveness of Respiratory Therapy Interventions: Respiratory therapy interventions, including noninvasive ventilation, supplemental oxygen, and nebulized medications, demonstrated significant improvements in dyspnea severity and patient comfort. Dyspnea scores improved from a mean of 7.4 preintervention to 4.2 post-intervention on a scale of 10, indicating a substantial reduction in symptom severity. Similarly, comfort scores improved, reflecting enhanced patient satisfaction with care. The results are detailed in Table 2.

Table 2: Impact of Respiratory Therapy on Dyspnea and Comfort Scores

Outcome Measure	Pre-Intervention	Post-Intervention	p-value
Dyspnea Severity (0-10	7.4 ±1.5	4.2 ±1.3	< 0.001
scale)			
Comfort Score (0-10	4.6 ±1.2	7.8 ±0.9	< 0.001
scale)			

Patient Outcomes: The majority of patients (85%) reported a significant improvement in their ability to engage in daily activities and communicate with family due to reduced dyspnea. Additionally, there was a notable decrease in the use of crisis interventions, such as urgent nebulized treatments or escalation of care, reflecting better overall symptom management. These findings are presented in Table 3.

Table 3: Patient Outcomes Post-Resp	piratory Therapy Intervention
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Outcome	Number of Patients	Percentage
Improved Daily Activities	102	85%
Reduced Crisis Interventions	108	90%
Increased Satisfaction with	114	95%
Care		

Discussion

The results of this retrospective study underscore the significant impact that respiratory therapy interventions can have on managing dyspnea in palliative care settings. This discussion explores the implications of these findings, reflects on the integration of respiratory therapy into palliative care, and addresses potential areas for further research and practice improvement.

Impact of Respiratory Therapy Interventions: The study revealed a marked improvement in dyspnea and comfort scores following respiratory therapy interventions, including non-invasive ventilation, supplemental oxygen, and nebulized medications. These results are consistent with the literature that recognizes the role of targeted respiratory care in alleviating breathing difficulties and enhancing patient comfort at the end of life (Kamal et al., 2012; Brown-Saltzman et al., 2010). The reduction in symptom severity not only improves patient quality of life but also allows patients to engage more fully in daily activities and maintain interaction with family members during their final days.

Role of Respiratory Therapists in Palliative Care: Respiratory therapists, with their specialized knowledge and skills in managing complex respiratory conditions, are poised to play a pivotal role in the multidisciplinary palliative care team. Their ability to assess and respond to changes in respiratory status is vital for tailoring interventions that meet the individual needs and preferences of terminally ill patients. The significant decrease in crisis interventions noted in this study highlights the effectiveness of proactive respiratory management in preventing acute respiratory distress and reducing the need for emergency care (Narsavage et al., 2017).

Challenges and Ethical Considerations: Implementing respiratory therapy in palliative care is not without challenges. Decisions regarding the initiation or escalation of interventions such as non-invasive ventilation must be carefully considered within the context of the patient's overall goals of care. The ethical implications of such interventions, particularly in terms of balancing life extension against potential impacts on quality of life, require thoughtful discussion with patients, families, and care teams (Baxter et al., 2013). This study highlights the need for clear communication and shared decision-making in the management of respiratory symptoms in palliative care.

Implications for Practice

The findings from this study suggest several practical implications for the integration of respiratory therapy into palliative care:

- 1. Enhanced Training and Guidelines: There is a need for specialized training for respiratory therapists in palliative care principles, focusing on symptom management, communication, and ethical considerations.
- 2. **Interdisciplinary Collaboration:** Strengthening the collaboration between respiratory therapists and other members of the palliative care team can enhance care coordination and ensure that respiratory interventions align with holistic care goals.
- 3. **Patient-Centered Care Plans:** Developing individualized care plans that incorporate patient preferences and goals can improve the appropriateness and acceptance of respiratory interventions.

Areas for Further Research

Further research is needed to explore the long-term outcomes of respiratory therapy interventions in palliative care and to identify which interventions are most effective for specific patient populations. Additionally, qualitative studies exploring patient and family experiences with respiratory therapy in palliative care could provide deeper insights into the impact of these interventions on patient quality of life and end-of-life care satisfaction.

Conclusion

This study contributes to a growing body of evidence supporting the critical role of respiratory therapists in managing dyspnea within palliative care settings. By effectively reducing symptoms of dyspnea and enhancing patient comfort, respiratory therapists not only improve the quality of life but also support the core goals of palliative care. As the field continues to evolve, the integration of specialized respiratory skills into palliative care practices remains essential for providing comprehensive and compassionate care to terminally ill patients.

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