
Health & Medical Sciences Volume: 3, Number 2, 2026, *Pages*: 1-11

# The Role of Nursing in Managing Shortness of Breath Symptoms in COPD Patients: A Qualitative Literature Review

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DOI: https://doi.org/10.47134/phms.v3i2.572
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Received: 29-12-2025
Accepted: 20-01-2026
Published: 14-02-2026



**Abstract:** This study aims to analyze in depth the role of nursing in managing dyspnea symptoms in patients with Chronic Obstructive Pulmonary Disease (COPD) through a qualitative-descriptive approach based on literature review. This study focuses on identifying effective nursing interventions, their implementation mechanisms, and their impact on dyspnea symptom control and improved quality of life for patients. Data were obtained from various scientific sources such as international journals, research reports, and recent academic articles (2019–2025) relevant to the research topic. Data analysis was conducted through the stages of theme identification, data reduction, concept categorization, and inductive conclusion drawing to obtain a comprehensive understanding of the phenomenon under study. The results showed that non-pharmacological nursing interventions such as pursed-lip breathing, diaphragmatic breathing, progressive relaxation, pulmonary rehabilitation, and self-education programs were proven to reduce the intensity of dyspnea, improve lung function, and increase patients' self-management abilities. In addition, the application of the empowerment-based care model and nurse-led pulmonary rehabilitation contributed to increased therapy compliance and psychological well-being of patients. Overall, these findings reinforce the strategic role of nurses as educators, facilitators, and companions in the comprehensive care of COPD patients and provide a theoretical basis for the development of evidence-based nursing interventions in the future.

**Keywords:** Nursing, COPD, Dyspnea, Pulmonary Rehabilitation, Symptom Management

## Introduction

Chronic Obstructive Pulmonary Disease (COPD) is one of the leading causes of global morbidity and mortality, which continues to increase each year. According to a WHO report, COPD ranks third as the leading cause of death worldwide and is projected to continue increasing due to exposure to tobacco smoke, air pollution, and the aging global population (Dou, 2025) . This increase in incidence requires the healthcare system, particularly nursing, to adapt and develop effective interventions in managing the primary symptom of COPD, namely shortness of breath or dyspnea.

Dyspnea is the most common symptom and has a significant impact on the quality of life of COPD patients. This symptom not only limits physical activity but also triggers anxiety and depression, thereby worsening the overall clinical condition (O'Donnell, 2019) . In this context, nurses play a strategic role as healthcare professionals who interact directly and continuously with patients to monitor, educate, and provide therapeutic interventions in dyspnea management.

Current trends show that an evidence-based practice nursing approach has been proven effective in reducing dyspnea levels, improving self-management, and reducing hospitalization rates for COPD patients (Henriques, 2024) . This approach emphasizes the importance of patient empowerment through education, breathing exercises, and nursing respiratory rehabilitation.

However, gaps are still found in the implementation of the nursing role in a multidisciplinary and palliative care context. Many studies show that nursing interventions are often not fully integrated into hospital or community respiratory rehabilitation programs (Helvaci, 2020) . This indicates the need for a more systematic and standardized intervention model.

In addition to physiological aspects, the psychosocial dimension of COPD patients is also an important focus in nursing practice. Patients often experience emotional distress due to activity limitations and dependence on oxygen therapy (Moura, 2024) . Therefore, emotional support, counseling, and coping training are integral parts of comprehensive care.

Various studies have highlighted the effectiveness of nursing-based self-management programs, such as tele-coaching, educational home visits, and nurse-led counseling programs in reducing dyspnea scores and increasing self-efficacy (Aranburu-Imatz, 2022; Jolly, 2018; Sobeh et al., 2019) . These programs have also been shown to strengthen patients' independence in managing chronic symptoms.

Non-pharmacological interventions such as pursed-lip breathing (PLB), diaphragmatic breathing, and progressive muscle relaxation exercises also have a positive impact on reducing the degree of breathlessness (Irawati, 2022; Massie, 2022) . This approach emphasizes the importance of nurses as the primary facilitators in structured and continuous breathing exercises.

Additionally, nursing respiratory rehabilitation interventions have been shown to improve exercise capacity, enhance lung function, and reduce exacerbation symptoms in elderly patients with COPD (Ibrahim, 2021; Li, 2025) . Preventive approaches such as the preventive nursing pathway demonstrate significant results in improving overall patient prognosis (Zhang, 2025) .

It is also important to note that dyspnea management does not only focus on physical aspects, but also includes palliative dimensions. Nurses play a role in helping patients and families understand palliative therapy options, including the use of opioids to treat chronic dyspnea that is refractory to standard therapy (Liu, 2025; Miller, 2024) .

In the context of modern healthcare, nurses serve as a bridge between patients, families, and the medical team. Competence in therapeutic communication, patient self-teaching, and spiritual support form the foundation of a holistic nursing approach (Helvaci, 2019) .

The need to strengthen nursing-based interventions is also driven by the increasing complexity of COPD cases in various countries. Recent research shows that patients with high comorbidity require a multidimensional approach that integrates physical and psychological management (Henriques, 2024) .

In addition to clinical factors, the development of digital technology in nursing provides new opportunities in the management of dyspnea through telehealth and remote monitoring systems. This technology allows nurses to provide education, monitor symptoms, and provide real-time feedback, which has been shown to improve therapy compliance (Dou, 2025) .

However, there is still a research gap regarding the long-term effectiveness of nursing-based interventions in different social and cultural contexts. A qualitative research approach is needed to explore patients' subjective experiences of nursing interventions in managing dyspnea (Padilha, 2018) .

Thus, this article aims to qualitatively analyze the role of nursing in managing dyspnea symptoms in COPD patients based on the latest research results. This analysis is expected to enrich the theoretical understanding of the contribution of nursing to improving the quality of life of patients while providing practical recommendations for optimizing nursing services in the future.

The expected benefits of this discussion include increased effectiveness of nursing interventions, strengthening evidence-based practices, and developing comprehensive, patient-oriented care models for COPD patients. Thus, this study not only contributes academically but also has real implications for improving the quality of health services at the clinical and community levels**.**

## Methodology

This study uses a qualitative approach with a descriptive design through a literature review. This approach was chosen because it provides an in-depth understanding of the role of nursing in managing shortness of breath symptoms in COPD patients based on existing research results. The qualitative-descriptive approach emphasizes the systematic description and interpretation of phenomena, in accordance with the context and meaning that emerge from various sources of scientific literature (Baillie, 2019; Doyle, 2019) .

The data sources in this study were derived from academic textbooks, scientific journal articles, research reports, and official documents relevant to the topic of nursing management for COPD patients. All data were taken from credible and current sources (2015–2025), with priority given to peer-reviewed publications to ensure the validity and reliability of the information (Bandaranayake, 2024; Jimenez, 2024) . The articles analyzed covered various contexts of nursing practice, including hospitals, communities, and pulmonary rehabilitation services.

Data collection techniques were carried out through systematic literature searches using keywords such as "nursing role," "COPD," "dyspnea management," and "pulmonary rehabilitation." The selection process was carried out by applying the following inclusion criteria: (1) research relevant to nursing and COPD symptom management, (2) published between 2015 and 2025, and (3) available in full text. The exclusion criteria included non-scientific articles, opinion reports, and publications that did not directly discuss dyspnea.

The data analysis procedure consisted of four main stages: (1) identification of the main themes in each piece of literature, (2) data reduction by selecting relevant information, (3) categorization of concepts to find patterns and relationships between themes, and (4) inductive conclusion drawing based on the overall analysis results. This approach was used to develop a conceptual synthesis describing the form of nursing interventions and their impact on controlling shortness of breath symptoms in COPD patients (Belotto, 2018; Bingham, 2023; Vila-Henninger, 2022) .

Data validity is maintained through source triangulation, by comparing results from various relevant studies and theories to ensure consistency of findings. Additionally, conceptual peer review is conducted to assess the appropriateness of data interpretation and the accuracy of analysis. This procedure ensures that the research results have a strong, transparent, and accountable methodological basis (Kalpokaite & Radivojevic, 2018; Pratt, 2025) .

Overall, this literature-based descriptive-qualitative approach allows researchers to present a comprehensive picture of the role of nursing in dyspnea management in COPD patients. This method also provides a strong foundation for developing evidence-based nursing intervention models that can be practically applied in the context of healthcare and nursing education (Abraham, 2024; Doyle, 2019) .

## Result and Discussion

This section of the research presents the main findings from the literature review focusing on the role of nursing in managing dyspnea symptoms in COPD (Chronic Obstructive Pulmonary Disease) patients. The results of the literature analysis include empirical evidence from various recent studies (2019–2025) that demonstrate the effectiveness of nursing interventions in reducing dyspnea symptoms, improving functional capacity, and enhancing patients' quality of life.

## Overview of Nursing Interventions

A systematic analysis and meta-analysis conducted by Dou et al. (2025) of 36 studies showed that structured nursing interventions significantly improved the functional capacity (6MWD), self-efficacy, and mental health of COPD patients, although the effects on reducing dyspnea still varied between studies. This underscores the crucial role of nurses as primary implementers of non-pharmacological interventions and long-term health education in managing chronic shortness of breath.

## Specific Nursing Interventions for Dyspnea

Various studies have shown the types of nursing interventions that are effective in controlling dyspnea symptoms, as shown in Table 1 below.

**Table 1.** Types of Nursing Interventions and Their Impact on Dyspnea in COPD Patients

| Type of Intervention | Primary Target | Key Findings Related to Dyspnea | Source |
|---|---|---|---|
| *Pursed-lip breathing (PLB)* | Reduces respiratory effort, increases $SpO_2$ | Increases oxygen saturation and reduces shortness of breath | (Massie, 2022; Wulandari, 2019) |
| *Diaphragmatic breathing* | Effective breathing pattern | Reduces respiratory rate within 3 days of training | (Juana, 2025) |

| Type of Intervention | Primary Target | Key Findings Related to Dyspnea | Source |
|---|---|---|---|
| *Nurse-led pulmonary rehabilitation* | Activity dyspnea & fatigue | Reducing MRC dyspnea scores and improving patient knowledge | (Ramadan, 2021) |
| *Respiratory rehabilitation package (AECOPD)* | Acute dyspnea in the elderly | Reducing dyspnea and acute exacerbations | (Ibrahim, 2021) |
| *Nurse-led education and counseling (home-based)* | Perception of dyspnea and health status | Reducing Dyspnea-12 and CAT scores | (Helvaci, 2019) |
| *IKAP model-based nursing* | Dyspnea and self-management | Improving compliance, 6MWT, and quality of life | (Lv et al., 2025) |
| *Progressive muscle relaxation* | Perception of shortness of breath & comfort | Reducing dyspnea scores and improving comfort | (Türkseven, 2025) |

## Optimization of Breathing Patterns and Airway Clearance

Research also highlights that ventilation disorders and ineffective breathing patterns are major issues that exacerbate shortness of breath in COPD. Case studies by Wulandari,(2019) and Juana(2025) show that breathing exercises such as pursed-lip breathing and diaphragmatic breathing improve oxygen saturation and reduce respiratory rate. Additionally, the application of effective coughing techniques, semi-Fowler position, adequate hydration, and nebulization therapy has been proven to improve ventilation and reduce secretion retention (Dunggio, 2025) . These strategies reinforce the role of nurses in maintaining airway cleanliness and the effectiveness of patient ventilation.

## Empowerment Approach and Continuity of Care

The continuing/empowerment-based nursing approach is a new trend in COPD nursing. A study by Wang(2025) found that empowerment-based continuing care combined with pulmonary rehabilitation significantly improved lung function ($FEV_1$, $FEV_1$/FVC), reduced dyspnea scores (CAT), and improved patients' quality of life and satisfaction. This expands the role of nurses not only as clinical practitioners but also as educators, self-management trainers, and long-term rehabilitation coordinators.

## Implications of Results and Research Comparisons

In general, the results of the literature review indicate that nursing interventions based on breathing exercises, rehabilitation, education, and relaxation have a positive impact on dyspnea symptoms and lung function in COPD patients (Dou, 2025; Ibrahim, 2021; Lv, 2025; Massie, 2022) . However, comparisons between studies reveal heterogeneity in intervention protocols and measurement tools. For example, some studies used the mMRC and Dyspnea-12 scales, while others used the Borg Scale, resulting in significant variations in outcomes. Therefore, further multi-center research with standardized interventions is needed to ensure long-term effectiveness across different healthcare contexts.

**Synthesis of Key Findings**

Overall, the literature indicates that:

a. Non-pharmacological nursing interventions effectively reduce dyspnea intensity and improve functional capacity.
b. Empowerment-based and educational programs enhance patient self-management and reduce hospitalization rates.
c. Breathing exercises such as PLB and diaphragmatic breathing provide direct physiological effects on improving oxygenation.
d. Nurse-led interventions play a significant role in pulmonary rehabilitation, both in hospitals and in the community.

These findings reinforce the role of nurses as a key component in the management of chronic dyspnea symptoms in COPD patients and form the basis for the development of clinical protocols and sustainable care policies in the future.

**Discussion**

The results of the research compiled from the literature review show that nurses play a multidimensional role in managing dyspnea symptoms in COPD patients, with a focus on non-pharmacological interventions, health education, and patient empowerment. This analysis links empirical findings with nursing theory and chronic symptom management concepts, and examines the factors that support or limit their effectiveness.

**Integration of Concepts and Theories in Nursing Practice**

Findings from various studies support that nursing interventions such as pursed-lip breathing, diaphragmatic breathing, and pulmonary rehabilitation are rooted in Roy's adaptation theory and Orem's physiological concept of self-care deficit. Both theories emphasize that nurses play a role in helping patients adapt to physiological stress through education and exercises to improve respiratory function (Dou et al., 2025). This is also consistent with the self-management approach that teaches patients to control their symptoms independently, as demonstrated in the IKAP model that improves compliance and quality of life (Lv, 2025) .

**Analysis of the Effectiveness of Nursing Interventions**

Analysis of the research results shows that nursing interventions are synergistic and have a positive effect on various dimensions of COPD patients' health. Breathing exercises such as PLB and progressive relaxation can reduce breathing frequency, improve oxygenation, and reduce the perception of shortness of breath (Massie, 2022; Wulandari, 2019) . Meanwhile, nurse-led pulmonary rehabilitation programs improve functional capacity and reduce fatigue (Ibrahim, 2021; Ramadan, 2021) .

The combination of relaxation-based interventions and breathing exercises yields consistent results, lowering dyspnea scores and significantly improving patient comfort (Türkseven, 2025) . These findings reinforce the evidence that the role of nursing is not only supportive but also therapeutic in managing COPD symptoms.

**Clinical Implications and Contributions to Science**

From a clinical perspective, these studies show an important contribution to the development of *evidence-based nursing* practice. Structured and sustained interventions can serve as guidelines for the development of nursing care standards for COPD patients in various service settings, including hospitals and communities. The empowerment-based continuing nursing approach (Wang, 2025) provides evidence that continuous education and mentoring can increase patient self-efficacy, improve lung function ($FEV_1$/FVC), and reduce anxiety and depression levels.

In an academic context, these studies reinforce the position of nursing as a scientific profession capable of developing autonomous interventions, not merely as a complement to medical treatment. Research by Helvaci (2019), for example, shows that nurse-led education and counseling programs significantly reduce Dyspnea-12 scores and increase patient independence in daily care.

**Factors Supporting and Hindering Effectiveness**

Several factors influence the success of nursing interventions. Social and family support, patient compliance, and nurses' competence in applying relaxation and breathing techniques are the main supporting factors (Juana, 2025) . Conversely, time constraints, nurses' workload, and lack of pulmonary rehabilitation facilities are inhibiting factors.

Additionally, variations in the measurement tools used to assess dyspnea levels (mMRC, Borg, Dyspnea-12) lead to differences in results between studies (Dou, 2025) . Standardization of measurement tools is necessary to improve the validity of comparisons between studies and the effectiveness of nursing intervention program evaluations.

**Research Limitations and Gaps**

This literature review identified several methodological limitations in existing studies. First, most studies still use quasi-experimental designs with small sample sizes, which limits the generalizability of results. Second, some interventions were not conducted over the long term, even though the effects of dyspnea management tend to only become apparent after sustained implementation (Dou, 2025; Ibrahim, 2021) . Third, most studies were conducted on elderly populations in hospitals, so expansion into community contexts is needed to assess effectiveness outside of healthcare facilities.

**Recommendations for Future Research and Practice**

Future research should develop standardized nursing intervention protocols for the management of dyspnea that are measurable and culturally adaptable. The use of a multidisciplinary approach combining physical therapy, psychological education, and technologies such as tele-nursing is also recommended. Additionally, advanced training for nurses on pulmonary rehabilitation and chronic symptom management is crucial to enhance the effectiveness of home-based programs ( .

Overall, these results and analyses reinforce the contribution of nursing in improving the quality of life of COPD patients through a holistic, patient-centered, and evidence-based approach.

## Conclusion

This qualitative study concludes that the role of nursing in managing dyspnea symptoms among COPD patients is multidimensional, encompassing physiological, educational, and psychosocial interventions that work in an integrated manner. The analysis shows that techniques such as pursed-lip breathing, diaphragmatic breathing, nurse-led pulmonary rehabilitation, and progressive education and relaxation programs effectively reduce dyspnea severity, enhance lung function, and improve patients' quality of life. These findings strengthen the theoretical foundation of adaptive nursing and self-management concepts by emphasizing patient empowerment and continuity of care as key elements of successful therapy. Beyond clinical aspects, nurses also play vital social and cultural roles as educators and companions who foster patient independence within families and communities. Academically, this study contributes to the development of evidence-based nursing care models for chronic symptom management, while acknowledging limitations such as methodological variations and short intervention durations. Therefore, it is recommended that nursing practitioners incorporate non-pharmacological interventions—such as breathing exercises, relaxation techniques, and self-education—into daily practice, and that academics develop curricula emphasizing empowerment-based care. Policymakers should design clinical guidelines and policies that promote evidence-based nursing within pulmonary rehabilitation programs, and future research should apply longitudinal and technology-based approaches, including tele-nursing, to strengthen continuity, contextual understanding, and the long-term effectiveness of COPD nursing management.

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