

Enhancing Respiratory Function in Dyspnea Patients using Semi-Fowler Position and Pursed Lip Breathing

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ABSTRACT

Introduction: Dyspnea is a condition of shortness of breath that can cause nursing problems in the form of ineffective breathing patterns due to impaired ventilation. This condition is characterized by increased respiratory frequency, use of accessory respiratory muscles, and decreased oxygen saturation. One of the non-pharmacological nursing interventions that can be given is the semi-Fowler position and pursed lip breathing exercises.

Objectives: The goal of this study is to describe the management of ineffective breathing patterns with the semi-Fowler position and pursed lip breathing in dyspnea patients.

Methods: The method used is descriptive with a case study approach in one dyspnea patient with nursing problems of ineffective breathing patterns. Data collection was carried out through interviews, observations, physical examinations, documentation, literature studies, and medical records. Nursing care was carried out for three days through the stages of assessment, determination of nursing diagnoses, interventions, implementation, and evaluation.

Result: The results of the management showed that after nursing actions in the form of providing a semi-Fowler position and pursed lip breathing exercises, the respiratory frequency decreased from 26 x / minute to 24 x / minute, oxygen saturation increased from 94% to 98%, as well as reduced use of accessory respiratory muscles, increased oxygen saturation, and reduced complaints of shortness of breath.

Conclusion: Semi-Fowler's position and pursed lip breathing exercises are effective in addressing ineffective breathing patterns in patients with dyspnea. Both interventions can be performed independently to improve the patient's oxygenation status.

Keywords: dyspnea, ineffective breathing pattern, semi fowler, pursed lip breathing.

INTRODUCTION

The respiratory system plays a vital role in maintaining adequate oxygen and carbon dioxide exchange to support normal body function. Dyspnea is a subjective sensation of breathing discomfort caused by impaired oxygenation and ventilation. This condition is commonly found in patients with respiratory and cardiovascular diseases, including pneumonia, chronic obstructive pulmonary disease (COPD), asthma, heart failure, and pulmonary tuberculosis (Turafik & Aini, 2021). Clinically, dyspnea presents as a nursing issue of ineffective breathing patterns, characterized by chest discomfort, tachypnea, the use of accessory respiratory muscles, and decreased oxygen saturation (Intan et al., 2024).

Respiratory diseases remain a major global health problem. According to the World Health Organization (WHO), lower respiratory infections, COPD, and tuberculosis continue to contribute substantially to global morbidity and mortality (Kemenkes, 2023). Hospital medical records at RS Gondo Suwarno also reported 30 hospitalized patients with dyspnea in 2025 and 15 cases during January–May 2026, with the highest incidence occurring among older adults aged 60–64 years. Ineffective breathing patterns may impair oxygen delivery when it's not managed properly, resulting in hypoxia, decreased organ function, and potentially life-threatening complications (Kholidah et al., 2025). Therefore, appropriate nursing interventions are essential to improve ventilation and oxygenation.

The Indonesian Nursing Intervention Standards (SIKI) recommend non-pharmacological interventions such as the semi-Fowler position and pursed-lip breathing. The semi-Fowler position (30°–45°) promotes lung expansion and reduces diaphragmatic pressure. Meanwhile, pursed-lip breathing prolongs the expiratory phase, improves gas exchange, decreases the work of breathing, and enhances oxygen transport (Hetyningsih et al., 2025; Andayani & Badriyah, 2024). Previous studies have demonstrated that the combination of these interventions significantly increases oxygen saturation, reduces respiratory rate, and relieves dyspnea symptoms (Hetyningsih et al., 2025). These interventions can be implemented independently by nurses. Based on this evidence, this study aims to describe nursing management of ineffective breathing patterns using the semi-Fowler position and pursed-lip breathing techniques in patients with dyspnea.

MATERIALS AND METHODS

This study employed a descriptive design with a case study approach involving a single patient diagnosed with dyspnea and an ineffective breathing pattern at Dr. Gondo Suwarno Regional General Hospital. Nursing care was provided over three consecutive days. Data were collected through interviews, observations, physical examinations, medical record reviews, and documentation. The nursing process included assessment, nursing diagnosis, intervention, implementation, and evaluation.

The nursing diagnosis of Ineffective Breathing Pattern (D.0005) was established based on the *Standar Diagnosis Keperawatan Indonesia* (SDKI) published by the Indonesian National Nurses Association (PPNI, 2016). Nursing interventions followed the *Standar Intervensi Keperawatan Indonesia* (SIKI), including Positioning (I.01019) by placing the patient in a semi-Fowler position (30°–45°) and Breathing Exercises (I.01007) through pursed-lip breathing techniques (PPNI, 2018). Patient outcomes were evaluated based on respiratory rate, oxygen saturation, use of accessory respiratory muscles, and subjective complaints of dyspnea. Ethical approval was obtained prior to data collection.

RESULTS

The patient complained of shortness of breath that worsened with physical activity. Initial assessment revealed a respiratory rate of 26 breaths/minute, an oxygen saturation of 94%, and the use of accessory respiratory muscles, indicating an ineffective breathing pattern. Nursing interventions included monitoring respiratory status, positioning the patient in a semi-Fowler's position, and instructing the patient in pursed-lip breathing techniques.

After three days of care, the patient reported reduced shortness of breath and improved breathing comfort. Objective findings showed a decrease in respiratory rate from 26 to 24 breaths/minute, an increase in oxygen saturation from 94% to 98%, and the absence of accessory muscle use. These findings indicate an improvement in the patient's breathing pattern and oxygenation status following the interventions.

Table 1. Changes in Patient Respiratory Status

Variabel	Intervention	
	Before	After
Respiratory Rate	26 x/minute	24x/minute
Oxygen Saturation	94 %	98%
Use of accessory respiratory muscles	Present (Use of accessory respiratory muscles)	Absent (Decreased)
Dyspnea	Increased	Decreased

DISCUSSION

The findings of this case study indicate that the combination of the semi-Fowler position and the pursed-lip breathing technique effectively improves the patient's breathing pattern. Prior to the intervention, the patient exhibited dyspnea, tachypnea, decreased oxygen saturation, and the use of accessory respiratory muscles, indicating increased work of breathing. After three days of nursing care, the patient showed a decrease in respiratory rate, an increase in oxygen saturation, and a reduction in complaints of dyspnea. These findings suggest that the intervention enhances ventilation and respiratory efficiency (Hetyningsih et al., 2025).

The semi-Fowler position facilitates better lung expansion by reducing pressure on the diaphragm and improving thoracic movement. This position also enhances ventilation-perfusion matching, leading to improved oxygenation. Furthermore, the pursed-lip breathing technique prolongs the expiratory phase, prevents airway collapse, and supports the more effective expulsion of air trapped in the lungs. Together, these interventions reduce the work of breathing and improve respiratory comfort (Salsabella and Kosim, 2025).

The results of this study align with previous nursing research reporting that the use of the semi-Fowler position combined with pursed-lip breathing can reduce respiratory distress, increase oxygen saturation, and support more effective breathing patterns in patients with dyspnea. Therefore, this intervention can be considered an effective independent nursing measure to address ineffective breathing patterns (Harta and Nasywa, 2025).

CONCLUSIONS

The implementation of nursing care utilizing the semi-Fowler position and pursed-lip breathing successfully improved the breathing patterns of patients experiencing dyspnea. Following three days of intervention, respiratory rate decreased, oxygen saturation increased, the use of accessory respiratory muscles ceased, and patients reported reduced shortness of breath. These findings support the use of both interventions as effective nursing strategies for patients with ineffective breathing patterns.

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Availability of data and materials

Data supporting the findings of this study are available from the corresponding author upon reasonable request, while maintaining patient confidentiality.

Authors' contributions

NHP: Conceptualization, data collection, implementation of nursing care, data analysis, manuscript preparation. DS: Research supervision, manuscript preparation, and final approval of the manuscript.

Conflict of Interest

The authors declare no conflict of interest regarding the publication of this article.

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