JURNAL KESEHATAN

DOI: 10.63323/jkes.v14i02.248
ISSN: 2302-0911; e-ISSN: 2685-1040

OPEN ACCESS

*Original article*

# Implementation of Proning Position to Reduce Dispnea in Asthma Patients

**Dimas Arya Anugra[1], Aris Teguh Hidayat[2*]**
1. Student, Nursing Department, STIKes Hesti Wira Sriwijaya, Palembang, Indonesia
2. Nursing Department, STIKes Hesti Wira Sriwijaya, Palembang, Indonesia

*Correspondence: Aris Teguh Hidayat | STIKes Hesti Wira Sriwijaya | arishidayatat@gmail.com

**Abstract**

**Introduction:** Asthma is a chronic respiratory disease that is a serious public health problem in many countries worldwide. This disease disrupts daily life, impacting quality of life and productivity. Asthma sufferers generally experience muscle spasms that can cause shortness of breath, difficulty expiratory, decreased lung capacity, and physical weakness. To overcome shortness of breath, the prone position can be applied. The purpose of this study was to describe the application of the prone position in patients with bronchial asthma who have nursing problems related to ineffective breathing patterns.

**Method:** The research used was quantitative. The research used a descriptive method with a case study approach. This was to explore the therapy of providing a prone position to reduce shortness of breath in patients. This case study was conducted in the emergency room of Dr. AK Gani Hospital, Palembang. This case study was conducted in May 2025. The subjects of this case study were two patients with bronchial asthma.

**Results:** After applying the prone position to patient 1 and patient 2, both patients experienced an increase in oxygen saturation levels and a decrease in respiratory rate.

**Conclusion:** Applying the prone position effective to increase oxygen saturation levels and reduce shortness of breath in patients with bronchial asthma.

**Keywords:** Asthma, Prone Position, Dispnea

Received July 20, 2025; Received in revised form September 26, 2025; Accepted October 10, 2025; Available online October 25, 2025

## INTRODUCTION

Asthma, a chronic respiratory disease, remains a serious public health problem in many countries worldwide. Mild to severe asthma symptoms can disrupt daily life and impact quality of life and productivity. Asthma is influenced by both host and environmental factors. Host factors include genetics, allergies (atopy), bronchial hyperreactivity, gender, and race. Environmental factors include allergens, cigarette smoke, air pollution, respiratory infections (viruses), diet, socioeconomic status, and family size. Asthma sufferers generally experience muscle spasms that can lead to shortness of breath, difficulty exhaling, decreased lung capacity, and physical weakness (Kusuma & Herlambang, 2020).

Common early signs and symptoms of asthma include coughing (with or without mucus), dyspnea, and wheezing. Symptoms typically appear at night or in the early morning, worsening over several days. However, asthma symptoms can appear suddenly during an asthma attack. A dry or productive cough can cause shortness of breath and a decrease in blood oxygen levels (Yulita et al., 2022). World Health Organization (WHO) data shows that Indonesia ranks 19th in the world in terms of the number of deaths due to asthma, with a total of 24,773 people, or around 1.77% of the total number of deaths in the population (Aprilia & Syahfitri, 2021).

The 2018 Basic Health Research (Riskesdas) data shows that approximately 1,017,290 Indonesians suffer from asthma, making it one of the leading causes of death in Indonesia. The highest prevalence of asthma is found in West Java, followed by East Java, Central Java, North Sumatra, Banten, DKI Jakarta, South Sulawesi, South Sumatra, and East Nusa Tenggara (Balitbangkes, 2018). Meanwhile, BPS data shows that South Sumatra experienced the highest number of bronchial asthma cases in 2022, with 26,536 people suffering from asthma. In 2023, the number decreased to 16,310 people (Badan Pusat Statistik, 2024). The Palembang Ministry of Health itself reported that in 2017 there were 23,256 cases of asthma, down from 2,949 cases in 2015, 4,350 cases in 2016, and 5,086 cases in 2017 (Sari & Yamin, 2020).

Shortness of breath, one of the early symptoms of asthma, can be managed pharmacologically and non-

pharmacologically. Pharmacologically, medications have been proven effective in treating shortness of breath. However, excessive use of medications can cause side effects. These side effects can harm the central nervous system, liver, and kidneys, worsening the condition and even leading to other complications. Therefore, non-pharmacological treatment can be an alternative option. One non-pharmacological treatment method is the prone position (Yulita et al., 2022).

The prone position is performed with the patient lying face down on a pillow. This position naturally increases oxygen levels. This position has proven effective when many patients are short of breath but have insufficient oxygen tanks during the COVID-19 pandemic. This position allows the patient's oxygen levels to return to normal, eliminating the need for oxygen tanks. One patient's oxygen level increased from 75 to 94 while in the prone position (Primaya Hospital, 2021).

Prone positioning can reduce shortness of breath experienced by patients. However, excessive use of medication can cause side effects. These side effects can harm the central nervous system, liver, and kidneys, worsening the condition and even leading to other complications. One non-pharmacological treatment method, positioning, can reduce shortness of breath in patients with bronchial asthma (Indah & Rahman, 2022). The prone position has been shown to be effective in increasing oxygenation, reducing shortness of breath and preventing respiratory disorders (Dewi et al., 2022). This study aims to describe the effectiveness of applying the proning position to two patients.

## METHOD

This research is a descriptive quantitative study with a case study approach. This case study explores the therapy of providing a prone position to reduce shortness of breath in patients with bronchial asthma. The study was conducted in the Emergency Room of Dr. AK Gani Level II Hospital, Palembang. The study was conducted in May 2025 and has passed the ethical review of STIKes Hesti Wira Sriwijaya (No. 000719 / KEP STIKES HESTI WIRA SRIWIJAYA / 2025). The subjects of this case study were 2 patients with bronchial asthma problems, informed consent was obtained.

## RESULTS

The case study is presented in five nursing care processes. The first step is nursing assessment. Patient 1 assessment obtained data from a 40-year-old female patient, the patient came on May 9, 2025 at 14.11 p.m. with the main complaint of the patient feeling short of breath since 3 days ago and getting worse today, the patient said that she had a history of asthma. Blood pressure: 168/106 mmhg, Pulse: 122x/minute, RR: 36x/minute, temperature $36^0$C, SPO2: 93%, additional breath sounds (wheezing), dyspnea, there is use of accessory muscles, rapid but shallow breathing rhythm, the patient appears to be coughing up phlegm with a liquid phlegm consistency, white in color, odorless, and the amount of phlegm is only small. The patient's consciousness is compos mentis, the patient is able to communicate well.

In the patient 2 assessment, the data obtained was a 24-year-old male patient, the patient came to the Emergency Room on May 23, 2025 at 21: 35 p.m. with the main complaint being that the patient felt short of breath. At the time of the assessment, the following data were obtained: subjective data: the patient said that he had a history of asthma and that his asthma recurred almost every day. Objective data: Blood pressure: 151/90, Pulse: 117x/minute, RR: 29x/minute, Temperature: $36^0$C, SPO2: 94%, Dyspnea, rapid and irregular breathing, visible use of accessory respiratory muscles, no cough and no phlegm, additional breath sounds (wheezing) were heard, the patient was still fully conscious and able to communicate well.

Based on the assessment, patient 1 was categorized as red triage due to airway obstruction, secretions, and problems with airway clearance and ineffective breathing pattern management. Patient 2 was categorized as yellow triage due to no airway obstruction. After conducting the assessment, the next step in the nursing care process was to determine the nursing diagnosis.

A nursing diagnosis is a clinical assessment of how the patient, family, and community respond to a real or potential health problem or life process (Tim Pokja SDKI DPP PPNI, 2017). In patient 1 and patient 2, the nursing diagnosis is an ineffective breathing pattern related to respiratory effort obstruction as evidenced by the patient appearing dyspneic, additional breath sounds (wheezing), worsening respiratory rate, increased RR, and visible use of accessory respiratory muscles.

The third step is determining nursing interventions. Nursing interventions are all activities carried out by nurses to achieve desired outcomes, based on clinical knowledge and judgment. Nursing actions are the behaviors or activities carried out by nurses to implement nursing interventions (Tim Pokja SIKI DPP PPNI, 2018). The nursing intervention performed in the two cases involved airway management. After 24 hours of nursing intervention, the breathing pattern improved, with the following criteria: decreased dyspnea, decreased use of accessory muscles, improved respiratory rate, and decreased adventitious breath sounds. Airway management interventions focused on the prone position and collaboration in administering mucolytics.

Nursing implementation on patient 1 was carried out on Friday, May 9, 2025 at 14.20 WIB. positioning the patient to the prone position, the patient's response was following the directions and said he felt comfortable when given the position, the patient was also given oxygen nasal cannula 5 LPM. Patient 2 was implemented nursing on Friday, May 23, 2025 at 21.40 WIB by positioning the patient to the prone position. The patient's response was following the directions and said he felt comfortable when given the position. The patient was also given oxygen nasal cannula 3 LPM.

The final step is to conduct a nursing evaluation using the Subjective Objective Analysis and Planning (SOAP) method. The results showed patient 1 at 15.30 p.m. Subjective: The patient said that the shortness of breath was reduced. Objective: The patient looked calmer, the shortness of breath was reduced, the use of accessory muscles of respiration was reduced, the wheezing sound was reduced, RR: 27 x / minute, SpO2: 97%, the patient was able to cough and expel sputum. Patient 2 was evaluated at 23.00 p.m and the following data were obtained: Subjective: The patient said that the shortness of breath was reduced and he felt comfortable during the prone position. Objective: The patient looked calmer, the shortness of breath was reduced, the use of accessory muscles of respiration was reduced, the wheezing sound was reduced, RR: 25 x / minute, SpO2: 97%, the patient was no longer on oxygen. Analysis of the two patients' ineffective breathing patterns had been resolved so that the planning of airway management interventions was stopped.

## DISCUSSION

Nursing care involves five processes, starting with assessment, establishing a nursing diagnosis, implementing a nursing care plan by developing interventions, implementing interventions, and evaluating them. In this study, the findings of the assessment revealed shortness of breath in asthmatic patients, characterized by increased respiratory rate and decreased oxygen saturation. This is in line with the theory that the symptoms of patients with respiratory system disorders include shortness of breath, tachypnea, and peripheral vascular disorders (Casman et al., 2025). Nursing planning focused on keeping the patient in the prone position for at least one hour. This resulted in decreased respiratory rate and increased oxygen saturation, as shown in Figure 1.

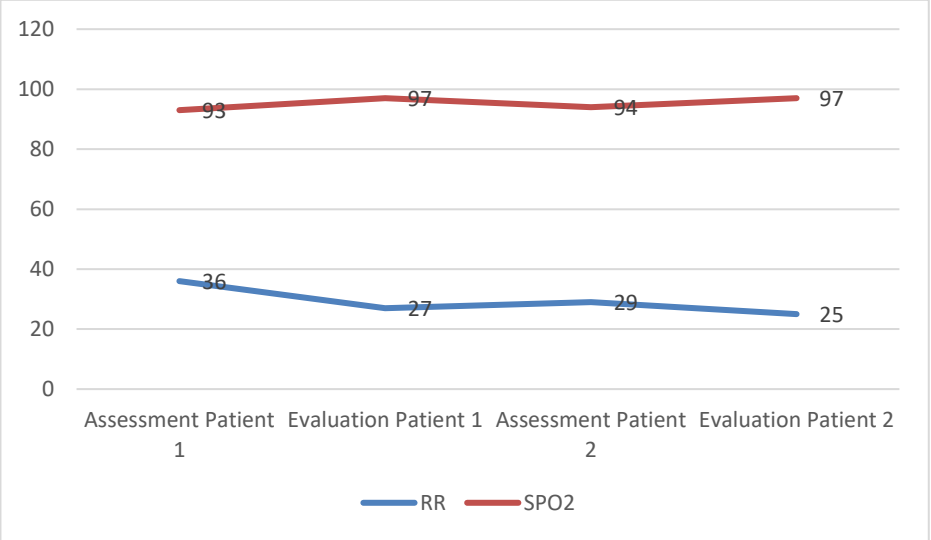


**Figure 1.** RR and SPO2 Values

Nursing interventions focusing on prone positioning in two asthma patients in the emergency room showed that the intervention was effective in addressing the nursing problem of ineffective breathing patterns. This is in line with research conducted by Dewi et al. (2022) in 40 patients who were placed in the prone position, their average oxygen levels increased by more than 2% after the intervention compared to before, namely 97.45% from 95.73%. This is in line with Agreta et al. (2023) which states that the prone position can effectively help increase lung field expansion in patients with bronchial asthma. The prone position helps improve lung ventilation by increasing expiratory volume and lung perfusion. This is because gravity can help secretions move downward when the patient assumes a prone position, allowing more of the lungs in good condition to be at the top.

Pronation is a simple position that helps patients perform their own movements without much assistance. This position can be positioned on the stomach with pillows supporting the head, chest, and legs (Rahmawati et al., 2023). The patient is positioned prone with pillows propped up on three sides of the body for 1 hour. Proper placement of blankets or pillows can help some patients experiencing shortness of breath (Caputo et

al., 2020). The prone position can reduce the pleural pressure gradient while not affecting perfusion, the result is a flatter pleural pressure gradient, homogeneity of ventilation, and a decrease in temperature fraction (Friedman et al., 2021).

The results of this study are in line with research conducted by Agreta et al., (2023) the study showed an increase in oxygen saturation levels after the prone position. Bivariate analysis using a T-test showed a p-value >0.05, with the average before and after the prone position increasing from 95% to 97% (Agreta et al., 2023). Kim et al., (2021) also explained that, compared with conventional nasal cannulas, the HFNO system provides adequate oxygenation without interrupting the procedure in patients undergoing ERCP in the prone position. Proning helps improve pulmonary ventilation by increasing expiratory volume and lung perfusion. As a result, tidal volume is distributed evenly to all lung cells.

## CONCLUSION

Based on the results of a case study on two patients, both patients experienced shortness of breath, characterized by an increased respiratory rate and decreased oxygen saturation. Both patients were medically diagnosed with asthma. This condition served as evidence for establishing a nursing diagnosis of ineffective breathing patterns, so airway management intervention was planned by implementing a prone position for one hour. The evaluation revealed a decrease in respiratory rate and an increase in oxygen saturation in both patients who were placed in the prone position.

## ACKNOWLEDGEMENT

The researcher would like to thank the two respondents who helped this process with their active participation, your contribution is very meaningful for the smoothness and success of this case study.

## REFERENCES

Agreta, S. M. N., Purwati, N. H., Rayasari, F., & Azzam, R. (2023). Penerapan Pronasi dan Semi Fowler terhadap Peningkatan Saturasi Oksigen pada Pasien COVID-19. *Jurnal Keperawatan Silampari*, *6*(2), 1000–1015. https://doi.org/https://doi.org/10.31539/jks.v6i2.4876

Aprilia, A., & Syahfitri, R. dila. (2021). Efektivitas Pemberian Posisi Semi Fowler Terhadap Penurunan Sesak Nafas Pada Pasien Dengan Asma Bronchial Palembang 2021. *Jurnal Kesehatan*, *10*, 2–7.

Badan Pusat Statistik. (2024). *Provinsi Sumatera Selatan Dalam Angka 2024*. https://sumsel.bps.go.id/id/publication/2024/02/28/24b0b0a6676d1d095ab88ce2/provinsi-sumatera-selatan-dalam-angka-2024.html

Balitbangkes. (2018). *Riset Kesehatan Dasar 2018*.

Caputo, N. D., Strayer, R. J., & Levitan, R. (2020). Early Self-Proning in Awake, Non-intubated Patients in the Emergency Department: A Single ED's Experience During the COVID-19 Pandemic. *Academic Emergency Medicine*, *27*(5), 375–378. https://doi.org/10.1111/acem.13994

Casman, C., Hastuti, D., Erlena, Amelia, L., Marni, Hakim, N., Mariyam, & Ringo, L. S. (2025). *Buku Ajar Keperawatan Anak I*. MCU.

Dewi, E., Irawati, D., & Endah, T. A. (2022). Efektivitas Posisi Prone Dan Orthopnec Terhadap Saturasi Oksigen Pada Pasien Covid-19 Di Ruang Isolasi Covid-19. *Jurnal Keperawatan*, *14*(2), 433–442.

Friedman, E., Franzone, J., Ko, E. R., Corey, K., Mock, J., Alavian, N., Schwartz, A., Drummond, M. B., Suber, T., Linstrum, K., Bain, W., Castiblanco, S. A., Zak, M., Zaeh, S., Gupta, I., Damarla, M., & Punjabi, N. M. (2021). Rationale and design of the prone position and respiratory outcomes in non-intubated COVID-19 patients: The "PRONE" study. *Contemporary Clinical Trials*, *109*(August), 106541. https://doi.org/10.1016/j.cct.2021.106541

Indah, S., & Rahman, N. (2022). Intervensi pronasi terhadap saturasi oksigen pada pasien Covid19. *Jurnal Perawat Indonesia*, *6*(2), 1022–1032.

Kim, S. H., Bang, S., Lee, K. Y., Park, S. W., Park, J. Y., Lee, H. S., Oh, H., & Oh, Y. J. (2021). Comparison of high flow nasal oxygen and conventional nasal cannula during gastrointestinal endoscopic sedation in the prone position: a randomized trial. *Canadian Journal of Anesthesia*, *68*(4), 460–466. https://doi.org/10.1007/s12630-020-01883-2

Kusuma, E., & Herlambang, B. (2020). Pengaruh Senam Asma Terhadap Kemampuan Pernapasan Penderita Asma Di Poli Asma RSUD Bangil. *Jurnal Ilmiah Keperawatan Stikes Hang Tuah Surbaya*, *15*(1), 90–99. https://doi.org/10.30643/jiksht.v15i1.89

Primaya Hospital. (2021). *Teknik Proning, Selamatkan Nyawa Pasien Isoman Covid-19 di Rumah*. 2021. https://primayahospital.com/covid-19/teknik-proning/

Rahmawati, N. D., Hilmi, I. L., & Salman, S. (2023). Review Analisis Efektivitas dan Risiko Toksisitas Aminofilin pada Pengobatan Penyakit Asma. *Journal of Pharmaceutical and Sciences*, *6*(1), 95–99.

https://doi.org/10.36490/journal-jps.com.v6i1.14
Sari, F. Y., & Yamin, M. (2020). Pengaruh Posisi Semi Fowler Untuk Mengurangi Sesak Nafas Pada Anggota Keluarga Dengan Asma. *Jurnal Kesehatan*, *9*(2), 11–17. https://ojs.hestiwirasriwijaya.ac.id/index.php/JSS/article/view/87
Tim Pokja SDKI DPP PPNI. (2017). *Standar Diagnosis Keprrawatan* (Edisi 1). 2017.
Tim Pokja SIKI DPP PPNI. (2018). *Standar Intervensi Keperawatan Indonesia* (II). Dewan Pengurus Pusat Persatuan Perawat Nasional Indonesia.
Yulita, E., Hamid, M. N. S., Dhilon, D. A., Program, M., Sarjana, S., Terapan, K., Ilmu, F., Universitas, K., Tuanku, P., Kunci, K., & Fisik, A. (2022). *VOLUME 1 , NO . 1 2022 SEHAT : Jurnal Kesehatan Terpadu VOLUME 1 , NO . 1 2022 SEHAT : Jurnal Kesehatan Terpadu 44*. *1*(1), 28–42.