

Effectiveness of Handheld Fan as A Non-Pharmacological Therapy in Reducing Dyspnea: A Scoping Review

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ABSTRACT

Chronic conditions such as chronic obstructive pulmonary disease, heart failure, and cancer can disrupt daily activities and reduce quality of life. One frequently used non-pharmacological intervention is the handheld fan, which is a handheld fan directed at the face to provide airflow that can help reduce the perception of shortness of breath through trigeminal receptor stimulation. Purpose: This journal review was conducted to determine the extent to which a handheld fan is effective in reducing complaints of shortness of breath in various clinical conditions through a scoping review approach. Methods: This review was conducted by searching and reviewing research articles from Google Scholar, PubMed, and national journals in the period 2021–2025 using the PICO framework, which includes a patient population with shortness of breath, handheld fan intervention, a control group comparison or no comparison, and outcomes in the form of a reduction in dyspnea levels. A total of 10 articles met the inclusion criteria and were analyzed descriptively. Results: The use of a hand-held fan for 5–10 minutes at a distance of 15–30 cm was consistently effective, demonstrating a reduction in shortness of breath in patients with chronic disease. No adverse effects were observed in all studies. Therefore, a handheld fan is considered safe, easy to implement, and potentially helpful in managing dyspnea.

Keywords: Chronic Disease, Dyspnea, Handheld Fan, Non-Pharmacological Therapy

Received:	Revised:	Accepted:	Available online:
11.04.2026	21.05.2026	01.06.2026	06.06.2026

INTRODUCTION

Shortness of breath, or dyspnea, is one of the most common symptoms in patients with various chronic conditions and can occur at rest and during light activity. *Dyspnea* not only affects physical conditions but also has an impact on psychological aspects, such as causing fear, anxiety, and limitations in carrying out daily activities. In chronic lung disorders, complaints of tightness arise from airflow obstruction and increased respiratory workload (Widianingtyas, S. I., 2022), making breathing feel heavier and requiring greater effort. This condition causes patients to tire quickly and have difficulty maintaining normal breathing patterns, especially when increased activity occurs (Khor *et al.*, 2021). There are several signs and symptoms of *dyspnea*, including shortness of breath, cough, sore throat, fatigue, myalgia, anosmia, nausea, diarrhea, loss of appetite, and decreased quality of life. In more severe conditions, respiratory distress can progress to pneumonia, acute respiratory distress syndrome (ARDS), sepsis, and septic shock (Huda et al., 2025).

Nursing interventions that focus on ventilation, oxygenation, airway clearance, effective cough techniques, and education for patients and families are very important for improving therapy outcomes, raising quality-of-life standards, and preventing deterioration in health (Huda et al., 2025). Non-pharmacological interventions are often used as an alternative to medical therapy to alleviate tightness-related complaints in a safe, easy-to-apply way and can improve patients' quality of life (Huda & Bashir, 2025). One intervention that is becoming widely used in healthcare is the Hand-Held Fan (HHF). HHF is an action administered using a small fan whose airflow is directed to the face area, especially the cheeks, nose, and mouth. The airflow from the fan provides a cooling sensation that can stimulate trigeminal receptors, which help send signals to the brain, reducing the perception of tightness (Brown et al., 2023). Several studies have shown that the use of HHF not only provides quick relief but also helps patients breathe more regularly during periods of tightness. (Long et al. 2021) reported that HHF is effectively used when patients are engaged in physical activity because it is able to reduce the feeling of heaviness in the breath and speed up recovery.

Although HHF has shown success as a simple and effective intervention, its effectiveness remains limited across various clinical conditions, especially within Indonesian health services. Therefore, this scoping review was conducted to examine the extent to which HHF

reduces *dyspnea* in patients with chronic obstructive pulmonary disease (COPD), heart failure, and advanced cancer. This review uses the PICO framework to identify patient populations with *dyspnea*, HHF interventions, comparators, and outcomes, specifically decreased *dyspnea* rates. A literature search was conducted in the 2021–2025 range from sources such as *Google Scholar* and *PubMed* to provide a comprehensive overview of the application of HHF in clinical practice.

METHOD

This study uses a scoping review method, searching and reviewing journal literature using the PICO framework. A scoping review was conducted to develop a comprehensive picture of the effectiveness of *Hand-Held Fan* (HHF) as a non-pharmacological therapy for reducing *dyspnea* in patients with chronic diseases such as COPD, heart failure, and cancer, while considering ethical principles (Huda, C., 2017 & Usman Chairul, 2017). The literature search was conducted using several research *databases*, including *Google Scholar* and *PubMed*. The search is focused on articles published in the last 5 years, i.e. between 2021-2025, to ensure the relevance and accuracy of the information. The keywords used were: “Hand-Held Fan”, “Dyspnea”, “Shortness of Breath”, “Non-Pharmacological Therapy”, “COPD”, “Heart Failure”, “Cancer”.

RESULTS AND DISCUSSION

The findings of this scoping review indicate that the use of a handheld fan is an effective non-pharmacological intervention for alleviating the perception of dyspnea among patients with various chronic conditions, including chronic obstructive pulmonary disease (COPD), heart failure, advanced cancer, and other respiratory disorders. Most studies reported a significant reduction in self-reported breathlessness following the application of airflow from a handheld fan directed toward the face, particularly around the nose and mouth. This effect is believed to result from the stimulation of trigeminal nerve receptors, which alters the perception of respiratory discomfort. Furthermore, handheld fans are inexpensive, portable, and easy to use,

making them a practical supportive therapy across different healthcare settings.

From the perspective of patient acceptance and comfort, the reviewed studies consistently demonstrated positive experiences with handheld fan use. Many patients reported a greater sense of control over their breathing difficulties, especially during physical activity or episodes of acute dyspnea. Several studies also suggested that the intervention contributed to reduced anxiety levels, which are commonly associated with breathlessness, thereby enhancing overall quality of life. However, the benefits of handheld fans were found to be more prominent in improving subjective symptoms rather than producing measurable changes in physiological indicators such as oxygen saturation or pulmonary function.

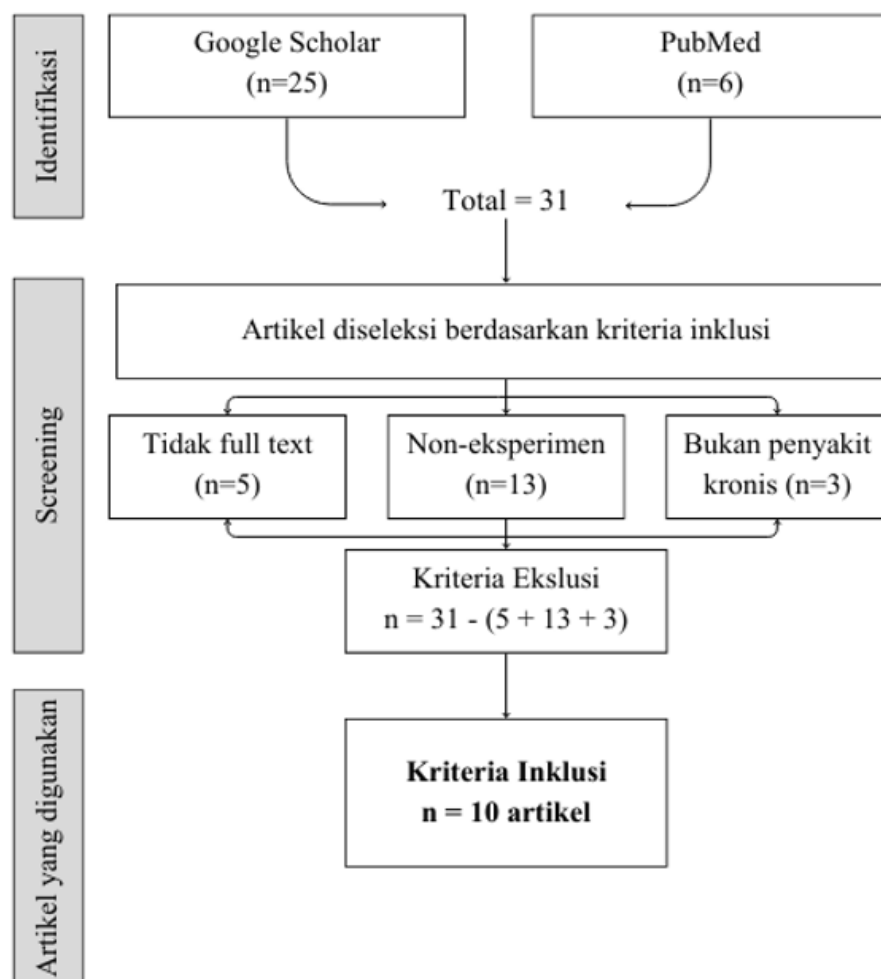


Figure 1. Article Selection Process Chart

The image shows the flow of article selection using the PRISMA diagram, which comprises the identification, screening, and inclusion stages. At the identification stage, a total of 31 articles were identified across two databases: *Google Scholar* (n = 25) and *PubMed* (n = 6). All articles then undergo an initial screening process based on the availability of *full text*, the type of research, and the suitability of the population for chronic disease. At the screening stage, 5 articles were removed because they were not available in fulltext form, 13 articles were eliminated because they were not experimental studies, and 3 articles were removed because they involved non-chronic disease populations. After the entire exclusion process, 10 articles that met the inclusion criteria were obtained and used in this review (Figure 1).

Table 1. Journal Review Results

No.	Research Journal	Population	Intervention	Compare	Outcome
1.	Handheld fans for dyspnea in respiratory failure: randomised controlled trial Author: Dan Yue, Xuqin Xie, Gaoyu Chen, Zhimei Luo, Linjie Fan, Desheng Sun (2024)	Patients with acute exacerbation of COPD who had respiratory failure and were undergoing continuous oxygen therapy, 45 COPD patients.	<i>A handheld fan</i> (HHF) is directed at the face, performed at a distance of 15-30 cm for 10 minutes.	Control group	<i>A handheld fan</i> (HHF) is just as effective in relieving dyspnea in patients with respiratory failure as is the case in patients with other chronic diseases.
2.	Implementasi <i>Hand Held Fan</i> Terhadap Sesak Nafas pada Pasien Gagal Jantung	The subjects used are two heart failure patients in the Heart Room of the Jend. Ahmad	<i>Hand held fan</i> 1 time a day for 3 days with a time duration of 5 minutes each	No comparator	The results of the study showed that the effectiveness of fans in reducing the

No.	Research Journal	Population	Intervention	Compare	Outcome
	Author: Rika Trisna Silvia, Anik Inayati, Nury Luthfiatil Fitri (2025)	Yani Hospital, Metro City in 2024	implementati on.		sensation of dyspnea in cancer patients.
3.	Penerapan <i>Hand-Held Fan</i> (Kipas Genggam) Terhadap Sesak Nafas Pasien Paliatif (Kanker) di Ruang Onkologi RSUD Jend. Ahmad Yani Kota Metro Author: Reza Permana Putra, Anik Inayati, Nia Risa Dewi (2024)	The subjects used were two cancer patients	It was carried out 1 time a day for 3 days with a duration of 5 minutes in the Oncology Room of Jend. Ahmad Yani Hospital, Metro City	No comparator	The application of <i>hand held fans</i> can reduce congestion in cancer patients.
4.	Penerapan <i>Hand-Held Fan Terhadap Dyspnea</i> Pasien Gagal Jantung Di Ruang Jantung RSUD Jend. Ahmad Yani Kota Metro Author:	The sample used in the case study was 2 heart failure patients	Interventions were carried out for 3 consecutive days with a duration of 5 minutes for each application	No comparator	The application of <i>a hand-held fan</i> can reduce <i>dyspnea</i> in heart failure patients in the Heart Room of the Jend. Ahmad Yani Hospital, Metro City.

No.	Research Journal	Population	Intervention	Compare	Outcome
	Felsi Ratna Sari, Anik Inayati, Nia Risa Dewi (2023)				
5.	Application of Hand Held Fan Therapy and Orthopneic Position to Reduce Dyspnea in Congestive Heart Failure (CHF) Patients: Case Report Author: Sausan Zahrah Salwa Salsabilla, Hesti Platini, Eka Afrima Sari	There is one CHF patient who has dyspnea	The intervention is given 3 times a day, for 5 minutes the Hand-held fan is placed about 15 cm in front of the face with an airflow speed of about 4 km/h	No comparator	There was a decrease in the tightness score (Borg Scale from 6 to 4), and patients reported more comfortable breathing and reduced tightness.
6.	Hand-held fans: Physical Properties and Perceptions of Patients with COPD Author: Tracy A. Smith, MBBS BSc PhD, Jin-Gun Cho, MBBS MMed (Clin Epi)	Patients with <i>Chronic Obstructive Pulmonary Disease</i> (COPD) who are on a pulmonary rehabilitation program	Therapy was administered using five variations of <i>hand-held fans</i> (HHF) Each fan was used for up to 1 minute with airflow directed to the lower part of the face at a comfortable	Control group	Based on the results of the journal HHF 5 fans, they have the most optimal level of comfort, fan distance, and airflow for COPD patients

No.	Research Journal	Population	Intervention	Compare	Outcome
7.	<p>PhD, Mary M. Roberts, MN, BSc (Nursing) DipApSci, Vinita Swami, BN, GradCertInt CareN, MHSM, and John R. Wheatley, MBBS PhD</p> <p>Implementing The Battery-Operated Hand-Held Fan As An Evidence-Based, Non-Pharmacological Intervention For Chronic Breathlessness In Patients With Chronic Obstructive Pulmonary Disease (COPD): A Qualitative Study Of The Views Of Specialist Respiratory Clinicians</p> <p>Author: Tim Lockett, Mary Roberts,</p>	Health care workers who have been in contact with patients with COPD and other chronic respiratory diseases	<p>distance of about 15–30 cm and an assessment of patient perception (<i>airflow</i>, comfort, noise, ease of use) was carried out</p> <p>Implementation of non-pharmacological interventions in the form of <i>battery-operated hand-held fans</i> to reduce <i>breathlessness</i> in COPD patients. The research focuses on views, perceptions, barriers, and supporting factors for fan use.</p>	No comparator	Effective battery-operated hand-held fan therapy intervention to reduce shortness of breath in COPD patients

No.	Research Journal	Population	Intervention	Compare	Outcome
	Tracy Smith, Maja Garcia, Sarah Dunn, Flavia Swan, Caleb Ferguson, Slavica Kochovska, Jane L. Phillips, Mark Pearson, David C. Currow Dan Miriam J. Johnson				
8.	Impact Of Fan Therapy During Exercise On Breathlessnes s And Recovery Time In Patients With COPD: A Pilot Randomised Controlled Crossover Trial Author: Alex Long, Martin Cartwright Dan Charles C. Reilly	Clinicians (nurses, doctors, therapists) who work with adult patients with <i>chronic breathlessness</i> due to chronic diseases such as COPD, cancer, and other respiratory conditions.	Fan therapy was administered for 6 minutes at 6MWT and continued during the recovery period until shortness of breath returned to baseline condition.	No comparator	Handheld fans are considered effective, safe, inexpensive, and easy to use to reduce breathlessnes s.

No.	Research Journal	Population	Intervention	Compare	Outcome
9.	Lung Cancer–Related Dyspnea The Effects Of A Handheld Fan On Management Of Symptoms Author: Vildan Kocatepe, Gulbeyaz Can, dan Özlem Oruc	Inpatients with lung cancer who have <i>dyspnea</i> .	Therapy using a <i>handheld fan</i> for 14 days is directed to the face.	Standard maintenance without the use of a handheld fan.	Decreased <i>dyspnea</i> scores, decreased respiratory rate, improved oxygen saturation, improved heart rate, and improved quality of life.
10.	The Handheld Fan For Chronic Breathlessness: Clinicians' Experiences And Views Of Implementati on In Clinical Practice Author: Joshua Brown, Isobel Miller, Matilda Barnes-Harris, Miriam J. Johnson, Mark Pearsoni, Tim Lockett, Flavia	Patients with <i>Chronic Obstructive Pulmonary Disease</i> (COPD) who experience <i>dyspnea</i> (shortness of breath) during physical activity or exercise (<i>exertional dyspnea</i>).	<i>Facial fan therapy</i> gives wind to the facial area using a handheld fan during physical activity to see its effect on ventilation and perception of <i>dyspnea</i> .	No comparator	Fan facial <i>therapy</i> provides <i>dyspnea</i> improvement , reducing respiratory load during low levels of activity.

Discussion

Results of the research (Smith *et al.*, 2022) showed that the use of *hand-held fans* (HHF) among patients with chronic diseases, particularly COPD, led to a direct reduction in perceived shortness of breath after the intervention (Huda & Waluyo, 2022). This article found that patients showed improved comfort and decreased respiratory distress, even though the study lasted only about 1 minute per experiment. This proves that HHF is effective as a short-term non-pharmacological intervention for treating *dyspnea* and provides patients with a sense of rapid relief. In research (Kocatepe *et al.*, 2021), In addition to a decrease in subjective perception of shortness of breath, HHF therapy also provides physiologically significant changes, namely a decrease in the rate of respiration, an increase in oxygen saturation, and a decrease in pulse frequency after 14 days of routine therapy. These results expand the understanding that HHF not only affects subjective comfort but also indicates improvements in objective parameters directly related to the respiratory function of cancer patients with *dyspnea*. Even so, other articles show variability in objective parameter results, so further research with a larger sample is still needed.

In terms of tool characteristics, it was found that the effectiveness of HHF is strongly influenced by its physical quality, particularly the airflow speed at a distance of 30 cm. For example, the HHF in the article (Smith *et al.*, 2022) has the highest airflow and is the most preferred fan among patients, whereas fans with low airflow or high noise tend to be less preferred. These results confirm that not all fans work equally effectively, and selecting the right tool is an important factor in achieving maximum effect. Thus, parameters such as *airflow*, noise, and comfort must be considered when applying HHF therapy. In a review of articles from 10 journals, some researchers also highlighted the responses of nurses and clinical personnel to the use of HHF. Many consider HHF an inexpensive, easy, portable, and safe intervention that can be used both at home and in the clinic, making it feasible to integrate into *dyspnea treatment standards*. However, several barriers were also identified, including limited patient knowledge, inappropriate fan selection, and the need for standardized education and documentation to ensure consistent therapeutic outcomes. This shows that the implementation of HHF depends not only on the efficacy of the tool but also on the implementation strategy used by qualified health workers. .

CONCLUSION

Based on a review of 10 journals, *handheld fan* therapy (HHF) has been shown to be a safe, inexpensive, and easy-to-use non-pharmacological intervention that effectively reduces *dyspnea* in patients with chronic diseases, such as COPD and cancer. Most studies show that HHF can rapidly reduce perceived shortness of breath and, in some studies, also improve objective parameters such as breathing rate, oxygen saturation, and breathing comfort. In addition, patients' preferences for HHF are strongly influenced by the fan's physical characteristics, such as airflow speed, noise levels, and comfort during use. Thus, HHF can be considered a relevant nursing intervention for managing *dyspnea across* various healthcare settings. Based on the *review results*, it is recommended that nurses include HHF as a standard intervention for managing *dyspnea* in patients with chronic disease, especially in acute situations or when immediate breathing assistance is needed without medication. However, it is necessary to educate patients and families on how to use them correctly, choose the appropriate fan type, and record patient responses in a structured manner. It is hoped that further research will be recommended to be conducted with larger sample sizes, longer durations of use, and comparisons of different types of HHF to ensure consistent and accurate results.

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