



## Case Study of Intervention using Mint Leaf Aroma Therapy in Bronchial Asthma Patients

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### ABSTRACT

**Objective:** This case study was conducted to present interventions and to see the effectiveness of using mint leaf aromatherapy interventions in improving ineffective breathing problems in clients with bronchial asthma.

**Method:** The research design used was a descriptive method with a case study approach, which included an intensive study of one unit of asthma cases with ineffective breathing patterns. Enforcement of nursing diagnoses refers to the Indonesian Nursing Diagnosis Standards (IDHS). Indonesian Nursing Intervention Standards (SIKI) and Indonesian Nursing Outcomes Standards (SLKI) The focus of the intervention in this case study was giving mint leaf aromatherapy, which was carried out for 3 days in the emergency room at the Banjar City Public Hospital. Nursing evaluations are documented using the SOAPIER method.

**Result:** Based on the results of the study conducted on Mr. S on May 28, 2021, it was found that Mr. S was 48 years old with a medical diagnosis of bronchial asthma with a nursing problem, namely an ineffective breathing pattern associated with difficulty breathing (D.0005). After the act of giving aromatherapy for 3 days to the patient, which aims to reduce shortness of breath by widening the airways and thinning the phlegm, The results obtained in the Tn.S. patient said that it was better than before; there was no coughing up phlegm, no wheezing breath sounds, BP: 140/110 MmHg, pulse: 90x/minute, temperature: 36.5°C, RR: 23x/minute, and SpO<sub>2</sub>: 99%.

**Conclusion:** The mint leaf aromatherapy intervention has proven to be useful for increasing respiration and spo within normal limits, The benefits of this therapy will be maximized if it is carried out periodically and gradually

**Keywords:** bronchial asthma, aromatherapy mint leaves, ineffective breathing patterns

### Introduction

Bronchial asthma is a respiratory disease that is often found in society. Bronchial asthma is a disease of the airways caused by certain stimuli that attack the trachea and bronchi. Bronchial asthma can attack all age groups from childhood to adulthood, which is most common in children and most of the deaths occur in adults. Clients who experience an ineffective breathing pattern will experience a decrease in actual or potential ventilation

caused by a change in breathing pattern (Anjani & Satria, 2017). Factors that influence the occurrence of bronchial asthma include allergic factors, non-allergic factors, psychological factors, genetic or hereditary factors and environmental factors. Ineffective breathing patterns are characterized by wheezing, shortness of breath, use of accessory muscles for breathing (Aprilliawati, 2019).

The World Health Organization predicts that by 2025 there will be 400 million people with asthma. The prevalence of asthma in the world continues to increase from year to year. In 2016, there were 300 million people with asthma, while in 2017 the number of people with asthma had increased to 367 million people. In Indonesia, asthma is the top ten causes of death (Zulkarnain et al., 2021). Apart from disrupting activities, asthma cannot be cured, it can even cause death. Asthma can be controlled with complete management, not only by administering pharmacological therapy, but also by non-pharmacological therapy, namely by controlling asthma symptoms. Asthma symptoms can be controlled by avoiding allergens that trigger asthma, regular asthma consultations with the medical team, healthy living with adequate nutritional intake and avoiding stress (Rimalasari, 2018).

Bronchial asthma is a chronic disease characterized by increased sensitivity of the bronchi to various stimuli resulting in a widening of the airways. Bronchial asthma sufferers will have reactions to trigger factors such as allergens, changes in weather, work environment and stress, causes that result in inflammation of the respiratory tract or hypersensitivity reactions (Silitonga et al., 2020). Ineffective breathing patterns are the main problems that often arise in bronchial asthma clients. Both of these factors will lead to a recurrence of asthma and can cause the patient to be short of air and have difficulty breathing. Clients with bronchial asthma with ineffective breathing patterns will experience death if the client is not treated immediately (Tribuana & Fredrika, 2021).

An important management strategy in healing with appropriate treatment is the main action for dealing with clients with asthma, to prevent more fatal complications and it is hoped that the client will recover soon (Sekaradhi, 2021). The main treatment for patients with bronchial asthma, perform oxygen administration through a mask or nasal cannula. Position the client as comfortable as possible or seat the client semi-fowler, administer nebulizer inhalation, administer medication, perform chest physiotherapy and teach the client to practice breathing so that the client can control his breathing, encourage the patient to drink warm drinks. Collaboration with the medical team and involving clients and families is necessary so that treatment can run smoothly (Heni Setyowati & Kp, 2018).

Research conducted by (Windiyarti et al., 2021) regarding the effect of simple inhalation with the addition of mint leaves to reduce shortness of breath in people with respiratory disorders. Meanwhile, mint leaves that are used for aromatherapy contain menthol, so they are often used as cough medicine. The menthol aroma in mint leaves has an anti-inflammatory effect so that it opens the respiratory tract later. In addition, mint leaves will loosen the bronchi which will make breathing easier. In this study, simple inhalation with the addition of mint leaves was done 3 times a day for 5-10 minutes when shortness of breath for 3 days was found to be very effective in reducing shortness of breath.

Aromatherapy mint leaves is a healing that comes from nature by using mint leaves as a standard addition. Mint leaves contain menthol leaves, so they are often used as a raw material for cold medicines. The menthol aroma found in mint leaves has anti-inflammatory properties, so that it opens the respiratory tract. In addition, mint leaves will also help cure infections caused by bacterial attacks. Because mint leaves have antibacterial properties,

they will loosen the bronchi, which will make breathing easier (Nuraini, 2021).

Based on the preliminary study conducted, the researcher is interested in conducting research on "Intervention of Administering Mint Leaf Aromatherapy to Overcome Ineffective Breathing Patterns in Patients with Bronchial Asthma at Banjar City Hospital".

### **Objective**

This case study was conducted to present interventions and to see the effectiveness of the use of mint leaf aromatherapy interventions in improving ineffective breathing problems in clients with asthma.

### **Method**

The research design used was a descriptive method with a case study approach which included an intensive study of one unit of asthma cases with ineffective breathing patterns. Enforcement of nursing diagnoses refers to the Indonesian Nursing Diagnosis Standards. And the determination of interventions uses the Indonesian Nursing Intervention Standards and the Indonesian Nursing Outcomes Standards with the focus of intervention on this case study, namely the administration of mint leaf aromatherapy which was carried out for 3 days at the Emergency Room, RSU in Banjar City. Nursing evaluations are documented using the SOAPIER method.

The data collection method used in this case study was by interviewing the respondents directly, observation by carrying out a physical examination (inspection, palpation, percussion, auscultation of the whole body) and data collection by means of documentation studies (medical records, literature, diagnostic examinations, number and data indicating otherwise). Based on data collected by means of interviews, observation and documentation studies. Furthermore, these data were compared with existing theories as material to be recommended for interventions. The results of the data collected in the form of field notes were combined in the form of transcripts and grouped into subjective and objective data to support the determination of nursing problems. Data analysis in the case study used the PES approach (Problem, Etiology and Symptoms) which was outlined in the form of a chart while the applied approach used descriptive analysis.

### **Results**

#### **Assesment**

Based on the results of the study conducted on Mr. S on May 28 2021, it was found that Mr. S was 48 years old with a medical diagnosis of bronchial asthma from Sukajaya Hamlet, Banjarnayar District, Ciamis Regency. The client came to the Emergency Room at the Banjar City Hospital on May 28 2021 with complaints of shortness of breath, shortness of breath that occurs when the weather is cold and after carrying out work activities, shortness of breath does not disappear or is reduced by rest or changing sitting or standing positions. Complaints accompanied by coughing up white phlegm, runny nose and fever accompanied by nausea and vomiting. The client and family say the client has been treated for gastritis since 2 years ago.

When conducting an assessment on May 29, 2021 at 08.00 WIB the client said he was still short of breath, unable to breathe normally, shortness of breath after doing activities and shortness of breath decreased when resting the client's breath sounds heard wheezing installed nasal cannula oxygen 4 liters / minute. Nasal cannula oxygen 4 liters/minute and RL infusion 20 drops/minute in the right hand. The results of measuring

vital signs showed blood pressure 191/151 mmHg, pulse 90 beats/minute, respiration 28 beats/minute and temperature 37.4°C. the results of the physical examination obtained the quality of the Glasgow Coma Scale (GCS) compos mentis client with the quantity of Eye 4, Motoric 6, and Verbal 5. Muscle strength of the client's upper right limb was 4, upper left was 4, lower right limb was 3 and lower left.

The results of a physical examination of the respiratory system showed normal chest movements, there was minimal chest muscle retraction, the additional sound of wheezing decreased slightly, there were no rhonchi, respirations increased 28 times/minute, the client appeared dyspneic after doing small activities such as changing positions and stretching muscles.

**Diagnosis**

Symptome	Etiologi	Problem	SDKI Code	Page
<p><b>Subjective data :</b></p> <ul style="list-style-type: none"> <li>The client says he still has shortness of breath accompanied by a cough with phlegm</li> <li>Clients say they have not been able to breathe normally</li> <li>Clients say shortness of breath after doing activities</li> <li>The client says that the tightness decreases when he rests</li> </ul> <p><b>Objective Data :</b></p> <ul style="list-style-type: none"> <li>BP : 197/151 mmHg</li> <li>P: 90 times/minute</li> <li>R: 28 times/minute</li> <li>T: 37,4°C</li> <li>There is minimal chest retraction</li> <li>Client looks weak</li> <li>Client difficulty when breathing</li> <li>Clients seem to experience shortness of breath after doing activities</li> <li>SpO2 95%</li> <li>Wheezing breath sounds</li> </ul>	<p>Trigger factors for asthma attacks ↓ Bronchial mucosal edema ↓ Increased effort and respiratory rate ↓ Respiratory narrowing ↓ Ineffective breathing pattern</p>	Ineffective breathing pattern	D.0005	124

From the table above, it can be concluded that the nursing problem for the client is an ineffective breathing pattern associated with difficulty breathing (weakness of the accessory muscles of breathing) (D.0005).

### **Intervention**

<b>Diagnosis</b>	<b>Objectives &amp; Results Criteria</b>	<b>Intervention</b>
Ineffective breathing pattern related to difficulty in breathing (weakness of accessory muscles) (D.0005)	After nursing intervention for 3 x 24 hours, the breathing pattern has improved (L.01004), with the following criteria: 1. Dyspnea decreased 2. Use of muscles 3. lowered breaths 4. Elongation of the expiratory phase decreases 5. Breathing rate improves 6. 5. Depth of breath improves	1. Monitor breathing patterns 2. Palpate the symmetry of lung expansion 3. Auscultate breath sounds 4. Monitor oxygen saturation 5. Set the breathing monitoring interval according to the patient's condition 6. Instruct the client to inhale the aromatherapy of mint leaves 7. Describe the purpose and procedure of monitoring 8. Inform monitoring results, 9. if necessary.

### **Implementation**

The implementation of nursing given is in accordance with nursing interventions that have been designed according to client needs by making the Indonesian Nursing Intervention Standards book a standard for providing nursing care. The implementation is to monitor breathing patterns, carry out a physical examination of lung expansion symmetry, auscultate breath sounds, monitor oxygen saturation, adjust respiration monitoring intervals according to the patient's condition, recommend and give clients inhalation of mint leaf therapy, explain the purpose and monitoring procedure and inform monitoring results ,

During the implementation of nursing, the author also involves the family in its implementation, it is intended that the family and the client are able to do it independently and continuously when the client is allowed to go home. On the 2nd day the client's lower extremities experience edema so that intervention and implementation are added by adjusting the sleeping position to reduce tightness and coughing. The results of the examination found that the client had excess phlegm which caused shortness of breath. In research conducted by this causes bronchial tightness, phlegm can be a complicating factor in effective breathing, and lack of nutrients in the body affects the occurrence of shortness of breath.

### **Evaluation**

<b>Diagnosis</b>	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>
Ineffective breathing pattern related to difficulty breathing (weakness of accessory muscles)	<b>Subjective :</b> The client says he still feels short of breath and the client says he has a little shortness of breath after doing the activity.  <b>Objective :</b>	<b>Subjective :</b> Client says feeling better than before  <b>Objective :</b> • BP:190/145 mmHg • P: 90 times/minute	<b>Subjective :</b> Client says feeling better than before  <b>Objective :</b> • BP:180/140mmhg • P: 90 times/minute • R: 23 times/minute • T: 36.5°C

(D.0005)	<ul style="list-style-type: none"> <li>• BP:191/151 mmHg</li> <li>• P: 90 times/minute</li> <li>• R: 28 times/minute</li> <li>• T: 36.5°C</li> <li>• Spo2: 96%</li> </ul> <p><b>Assesment :</b> Ineffective breathing pattern nursing problem</p> <p><b>Plan :</b> Continue intervention</p>	<ul style="list-style-type: none"> <li>• R: 23 times/minute</li> <li>• T: 36.5°C</li> <li>• Spo2: 98%</li> </ul> <p><b>Assesment :</b> Nursing problems have not been resolved</p> <p><b>Plan :</b> continue intervention</p>	<ul style="list-style-type: none"> <li>• Spo2: 99%</li> </ul> <p><b>Assesment :</b> The issue is resolved</p> <p><b>Plan :</b> Stop intervening</p>
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## Discussion

Based on the results of the study conducted on Mr. S on May 28 2021, it was found that Mr. S was 48 years old with a medical diagnosis of bronchial asthma with the main complaint of shortness. Bronchial asthma is a non-communicable disease that is hyperreactive (a non-communicable disease), the main chronic airways are hyperactive and narrow due to various stimuli, which are characterized by attacks of shortness of breath and wheezing, with different severity and frequency for each person (Ningrum, 2019).

According to (RAHMAWATI, 2021) asthma is a chronic inflammatory disorder of the airways, this choronic inflammation can cause an increase in airway hyperresponsiveness which is characterized by wheezing, difficulty breathing, chest tightness (chest tightness) and coughing, especially occurring at night or early in the morning. The clinical course of asthma is unpredictable, beginning with a period of adequate control until a progressively worsening exacerbation is accompanied by dyspnea, wheezing and chest tightness (Rahmanti & Muarifah, 2020). Asthma is not a specific disease but is a syndrome resulting from multiple mechanisms that ultimately produce a complex of clinical symptoms including reversible airway obstruction. Asthma attacks are marked by coughing, wheezing, and shortness of breath. Symptoms that are often obvious are the use of accessory respiratory muscles, and the emergence of pulsus paradoxus.

Based on the results of the studies that have been obtained, conclusions can be drawn to determine the nursing diagnosis for the client, namely ineffective breathing pattern. In the case review, 4 nursing diagnoses were found, namely: ineffective breathing pattern associated with difficulty breathing, imbalanced nutritional needs less than body requirements related to anorexia, activity intolerance associated with imbalanced oxygen supply, and disturbed sleep patterns associated with shortness of breath (Zulkarnain et al., 2021).

Planning in the literature review and case review there is a gap where in the literature review the action plan is not carried out directly in front of the patient and the action plan is adjusted to the patient's current condition. Such as: assess breathing patterns and breath sounds, for example wheezing or rhonchi, give the patient a comfortable position, for example elevating the head of the bed or semi-sitting position (semi flower), teach how to cough effectively, namely inhale and then exhale 3 times, the last one coughing immediately , because after nursing action 3x24 hours airway cleaning is effective

and Assess the patient's knowledge about the importance of body nutrition. Give an explanation of the importance of adequate nutrition for the body, encourage the patient to eat a little but often, because after 3x24 hours of action the nutritional needs can be met and within normal limits. In the literature review, time targets and outcome criteria have not been written for each plan, while in the case review the authors provide a target time for how long the case review has been achieved and the results to be achieved. This is due to case reviews dealing directly with patients.

Aromatherapy mint leaves is a healing that comes from nature by using mint leaves as a standard addition. This research method uses a literature review study based on relevant relevant references, the data source is based on updated articles which are limited to publication from 2016-2020 (Sekaradhi, 2021).

Implementation of nursing given in accordance with nursing interventions that have been designed according to client needs. During the implementation of nursing, the author also involves the family in its implementation, it is intended that the family and the client are able to do it independently and continuously when the client is allowed to go home. On the 2nd day the client's lower extremities experience edema so that intervention and implementation are added by adjusting the sleeping position to reduce tightness and coughing. The results of the examination found that the client had excess phlegm which caused shortness of breath. In research conducted by this causes bronchial tightness, phlegm can be a complicating factor in effective breathing, and lack of nutrients in the body affects the occurrence of shortness of breath.

According to (Windyarti et al., 2021)nursing evaluation is the end result of the nursing process which is a systematic and planned comparison between the observed final results and the goals or outcome criteria set at the planning stage. Evaluation of nursing care is documented in the form of SOAP (subjective, objective, assessment, and planning). The SOAP component, namely S (Subjective) where the nurse finds patient complaints that are still felt after nursing actions, O (Objective) is data that is felt as a result of measurements or observations of nurses directly on patients and what patients feel after nursing actions, A (Assessment) is an intervention from subjective and objective data, P (Planing) is a nursing plan that is continued, discontinued, modified, or added to a predetermined nursing action plan.

Based on the nursing actions that have been carried out on Mr.S, the researcher evaluates each action and has obtained the following: on the patient Mr.S, the first day he complained of shortness of breath and difficulty expelling phlegm, wheezing breath sounds and rhonchi, BP: 180/110 mmHg, pulse: 90x/minute, temperature 37.4°C, RR: 23x/minute, Spo: 95%. After the act of giving aromatherapy for 3 days to the patient which aims to reduce shortness of breath by widening the airways and thinning the phlegm. The results obtained in the patient Mr. S said it was better and more comfortable than before, the tightness was gone, there were no additional breath sounds : 140/110 mmHg, pulse: 90x/minute, temperature: 36.5°C, RR: 23x/minute, Spod: 99% .

From the nursing care that has been carried out, it was found that the results of the evaluation of nursing problems with breathing patterns were not effective based on the patient data above, the problem was resolved. According to research conducted (Rimalasari, 2018) regarding the effect of simple inhalation with the addition of mint leaves to reduce shortness of breath in people with respiratory disorders. Meanwhile, mint leaves used for aromatherapy contain menthol, so they are often used as cough medicine. The aromatherapy of mint leaves has anti-inflammatory properties so that it opens the

respiratory tract later. In addition, mint leaves will loosen the bronchi which will make breathing easier.

### **Conclusion**

Interventional mint leaf aromatherapy has been proven to be effective in overcoming the problem of ineffective breathing patterns, respiration and oxygen saturation within normal limits and the benefits of this therapy will be maximized if it is carried out periodically and gradually.

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