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Nursing Care of Patients With Ineffective Airway Clearance Problems

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ABSTRACT

Bronchial asthma is a condition in which the airways narrow due to hypersensitivity to certain stimuli, which cause inflammation. Eucalyptus is a plant that is often used as a drug by inhalation because it contains terpenes, porphyrin derivatives, and other phenolic compounds for pharmacological activity. Eucalyptus can be inhaled to produce local or systemic effects through inhalation by inhalation using a vapor, nebulizer, or aerosol spray. This study aims to carry out nursing assessments for clients who experience asthma, establish nursing diagnoses for clients who experience asthma, develop nursing plans for clients who experience asthma, carry out nursing actions for clients who experience asthma, carry out nursing evaluations for clients who experience asthma, perform discussion of the results of the application of eucalyptus aromatherapy to clients who experience asthma. The research method was carried out qualitatively with a content analysis approach to patients directly. The results obtained prove that there is an effective effect in administering simple steam aromatherapy eucalyptus inhalation therapy to asthma sufferers.

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INTRODUCTION

Asthma is a non-communicable disease and can be the leading cause of death globally. Asthma is a respiratory disease that can affect anyone, including children to adults. Bronchial asthma is a medical condition that can cause the airways to become narrowed. Due to this swelling, the airways in the lungs produce excess mucus making breathing difficult, resulting in coughing, shortness of breath, and weezing (Krasnik & Rasmussen, 2021). The results of the Basic Health Research (Riskesdas) in 2018 showed that the prevalence rate of asthma in Indonesia reached 2.4% with a weight of 1,017,290 people, the highest case in the province of West Java was 2.8% with a weight of 186,809 people, followed by East Java province reaching 2.6% with a weight of 151,878 people.According to Riskesdas, (2018) the prevalence of asthma in West Java reached 2.8%, namely

73,285 people. With the highest case in West Java, the first is Bogor Regency, while Sukabumi district reached 2.08% with a weight of 3,713 people and in Sukabumi city a weight of 492 people.

Bronchial asthma is a condition where the airways are narrowed due to hypersensitivity to certain stimuli, which causes inflammation, this narrowing is recurrent and between episodes of bronchial narrowing there is a more normal state of ventilation. Bronchial asthma sufferers are hypersensitive and hyperactive to external stimuli, such as dust, animal dander, smoke, and other materials that can cause allergies. Symptoms appear very suddenly, so asthma disorders can come suddenly if you don't get help as soon as possible, there can be a risk of death. Bronchial asthma can also arise due to inflammation that causes narrowing of the lower respiratory tract. This narrowing is due to the crimping of smooth muscles in the respiratory tract, swelling of the mucous membranes, and also the formation of excessive mucus deposits (Krasnik & Rasmussen, 2021).

Signs and symptoms that usually appear in asthma patients can be coughing, weezing, hypoxia, tachycardia, sweating, widening of pulse pressure and shortness of breath and chest tightness caused by allergens, infections or other stimuli. However, the complaint that is often expressed by asthma patients is shortness of breath. One of the actions to overcome or reduce shortness of breath in asthma patients can be done nonpharmacologically, namely giving steam inhalation by inhaling the aroma of eucalyptus oil (Padila, 2012).

Eucalyptus is a plant that is widely used as a medicine by inhalation, the pharmaceutical industry often uses leaves from Eucalyptus which contain terpenes, porphyrin derivatives and other phenolic compounds for various pharmacological uses (Afriani, 2019). Essential oil from Eucalyptus is an effort to overcome nasal congestion and can be done by administering drugs by inhalation, drugs can be inhaled to produce local or systemic effects through the respiratory tract by inhaling using steam, nebulizer, or aerosol spray. The use of eucalyptus inhalation without this drug by inhalation through the upper respiratory tract, this is one action to help breathing more freely, the secretion is thinner and easier to remove, the mucous membranes in the airway will remain moist. By giving warm water vapor mixed with eucalyptus essential oil can reduce the tightness felt by patients who are experiencing asthma, because by giving steam it will facilitate the respiratory tract and can dilute the secret if there is a buildup of secret in the airway. (Krasnik & Rasmussen, 2021).

Research also states that eucalyptus oil can inhibit the spread of tuberculosis (TB) germs with inhalation therapy in patients who use eucalyptus citriodora oil extract (Mtsweni et al., 2020). The results obtained by Eucalyptus citriodora proved to be able to inhibit the spread of pulmonary TB by more than 90% stating that eucalyptus oil can be used as herbal medicine, namely to reduce shortness of breath due to flu or asthma by applying it to the chest, treating sinuses by inhaling warm water vapor that has been dripped with eucalyptus oil can relieve nasal congestion by inhaling eucalyptus oil aromatherapy.(Daya & Sukraeny, 2020). According to research by Najib, et al (2019) states that there is evidence to suggest that oil vapor from eucalyptus aromatherapy is effective as an antibacterial and should be considered for use in the treatment or prevention of respiratory tract infection patients in hospitals.

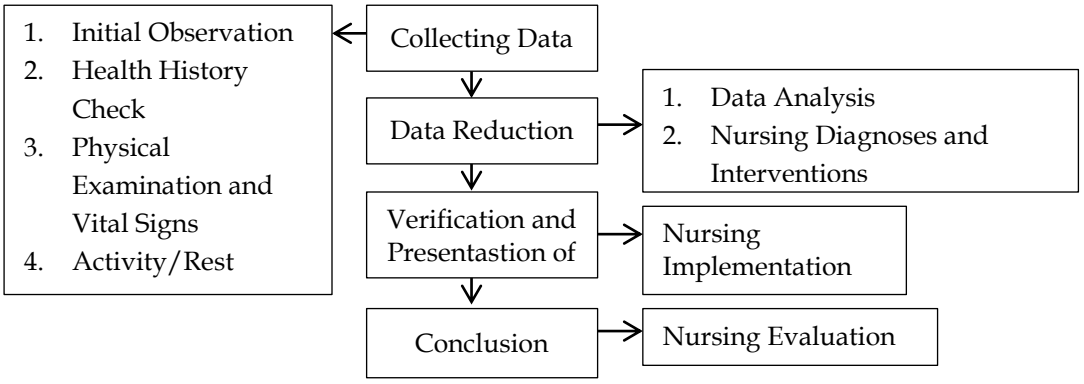
The results of other studies indicate the effect of shortness of breath values before and after the provision of steam inhalation therapy with eucalyptus aromatherapy. The results of the Wilcoxon Signed Rank Test test obtained data P value 0.007 < (a) 0.05, so Ho is rejected H1 is accepted, which means that there is an effect of steam inhalation therapy with eucalyptus aromatherapy on reducing shortness of breath. The Mnn Whitney U test showed a P value of 0.006 < (a) 0.05, which means that there is a difference in the value of the shortness of breath scale in the experimental group that received therapy, steam inhalation therapy with eucalyptus aromatherapy and the shortness of breath scale value in the control group without steam inhalation therapy with eucalyptus aromatherapy oil. (Pramudaningsih & Afriani, 2019).

In addition, according to research (Pramudaningsih & Afriani, 2019) the provision of aromatherapy steam inhalation serves to reduce the frequency of breathing in patients with bronchial asthma and provide results it turns out that there is a significant effect in the provision of eucalyptus aromatherapy on reducing shortness of breath in patients with bronchial asthma. according to Putri, (2016) stated in a nursing case study that the provision of steam inhalation to dilute sputum and help sputum come out easily.

Specifically, this study aims to conduct a nursing assessment of clients experiencing asthma, determine nursing diagnoses in clients experiencing asthma, develop nursing plans for clients experiencing asthma, carry out nursing actions for clients experiencing asthma, conduct nursing evaluations for clients experiencing asthma, discuss the results of the application of eucalyptus aromatherapy to clients experiencing asthma.

RESEARCH METHOD

This research was conducted qualitatively. The subjects in this study were patients with asthma who were at R Syamsudin Hospital, Sukabumi City. The data collection process was carried out by observation and in-depth interviews with patients and there were stationery and recording devices for documentation of interview results and observation lists. The data analysis process was carried out using the content analysis method, namely (1) collecting data; (2) data reduction; (3) verification and presentation of data; (4) conclusion drawing. the following is the flow in the data analysis process:



RESULTS AND DISCUSSIONS

Collecting Data

a. Initial Observation

The researcher made direct observations of the patient and directly monitored the patient's condition as a form of objective data collection. The author also took nursing action, namely applying eucalyptus aromatherapy application techniques to the patient. Supporting data is obtained by means of direct interviews with patients and literature studies. This research was conducted for 5 days in the puskesmas selabatu Sukabumi City. The client initials Patient who is 63 years old, Patient was born in Sukabumi on December 28, 1959. He currently resides at Jl.Selabintana Gg. Yakub No.09 RT 01 RW 02 Cikole Sub-district Cikole Village, Sukabumi City, the patient is Muslim, married and works as a trader.

b. Health History Check
The patient said that the main complaint felt was shortness of breath accompanied by a cough with phlegm, the client felt tightness when the weather was cold or at night. the tightness disappeared, the tightness got worse when doing activities, the tightness decreased when the client did not do activities. breathing frequency 26x/minute, pulse 78x/minute, spo 94%.

c. Physical Examination and Vital Signs

General condition	: composmentis Vital signs
Blood Pressure	: 150/80 Pulse: 78 x/min
Respiration	: 26x/min
Temperature	: 36,50 C
Spo	: 94 %

a) Head
Inspection: symmetrical head shape, gray-black hair color
Palpation: no lumps, hair feels sticky

b) Eyes
Inspection: anemic conjunctiva, isochor pupil
Palpation: no tenderness in the eye area

c) Nose
Inspection: symmetrical nose shape, no discharge, normal smell
Palpation: no lumps, no tenderness

d) Mouth
Inspection: pale lip color, dry lip mucosa

e) Ear
Inspection: symmetrical ear shape, normal hearing
Palpation: no lumps

f) Neck
Inspection: no lumps
Palpation: no enlargement of the thyroid gland, and lymph pulse palpable strong

g) Chest and thorax
Inspection: productive cough, sputum present, chest wall retraction increased with respiration 26x/minute
Auscultation: weezing sound is heard Percussion: sonorous lung percussion
Palpation: no lumps and tenderness

h) Heart
Inspection: there is movement of muscle retraction in the chest wall, no lesions and no chest pain.
Auscultation: regular heart sounds Percussion: tympanic abdominal percussion
Palpation: no lumps and tenderness

i) Abdomen
Inspection: flat abdomen, no lumps intestinal peristalsis 8x/min sounds slow
Palpation: soft palpable abdomen, no hepatic enlargement.

j) Upper Extremity
Inspection: dull skin, short nails, clean, no lesions.
Palpation: no tenderness, elastic skin turgor, cold palpable acral Crt <2 sec.

k) Bottom
Inspection: dull skin, short nails, clean, no lesions.
Palpation: no tenderness, dry skin, cold palpable acral, CRT> 2 seconds.

d. Activity/rest
The client said he went to bed at 21.00 pm and woke up at 04.00 am, the client often woke up during sleep because he felt cold.
e. Food / drink
The client eats rice and side dishes 3 times a day with moderate portions. The client is able to eat and drink independently
f. Breathing
There is a breathing problem in the client, the client's breathing is 26x/minute and there is an additional wheezing sound..

Data Analysis

The first data analysis found that the first problem that occurred in the client was ineffective airway clearance associated with excess mucus, retained secretions. Subjective data the client said it was tight and difficult to breathe, his chest felt heavy accompanied by coughing since last night and his sputum was difficult to come out due to cold allergies. Obtained objective data at the time of auscultation there was an additional sound of weezing, the client's breathing rhythm seemed irregular and the client's breathing seemed shallow, blood pressure 150/80 mmHg, respiratory frequency 26x/min, pulse 78x/min, temperature 36.5C, spo 94% of clients seemed to hold their chest. These nursing problems lead to ineffective airway clearance associated with excess mucus, retained secretions.

Nursing Diagnoses and Interventions

Nursing diagnoses for these patients are ineffective airway clearance associated with excess mucus, retained secretions. Interventions to be carried out in patients with the aim that after taking nursing action for 5x1 hours, it is hoped that shortness of breath will decrease with the criteria for the results of complaints of client shortness of breath decreasing from the moderate-light range, the client looks pale, the scale of tightness decreases. Interventions that will be carried out on the patient are monitoring the client's vital signs, adjusting the patient's position to maximize ventilation, performing chest physiotherapy, giving warm drinks to relieve breathing, motivating clients to breathe slowly, deeply and teaching effective cough techniques. Perform non-pharmacological shortness of breath treatment, namely simple steam inhalation with eucalyptus aromatherapy to reduce shortness of breath with a time of 10-15 minutes for each session and carried out for 5 days, evaluate shortness of breath.

Nursing Implementation

a. Implementation of the first day was carried out by assessing the client's shortness of breath, obtained the client's subjective response said shortness of breath, the chest felt heavy, there was an additional breath sound of weezing and coughing up phlegm. before doing simple steam inhalation, the most difficult time was when the client was active and the shortness was slightly reduced with a breathing frequency of 26x/minute, when the client was resting the shortness felt was lost and arose. The client's objective response looked pale and held the chest, then the author explained the purpose and benefits and procedures of simple steam inhalation with the client's response understanding what was explained by the author. Then teaching non-pharmacological techniques to clients, namely by applying eucalyptus aromatherapy, the client is able to follow well, the client says the breath is a little relieved, the tightness is slightly reduced but still there and the cough is still there.
b. Implementation of the second day was carried out by assessing the client's shortness of breath, obtained the client's subjective response said shortness of breath, heavy breathing sounded weezing and coughing with yellow sputum. The client feels shortness of breath during activity, the shortness that is felt is lost and arises. The client's objective response looked pale and held the chest, then the author explained the purpose and benefits and

simple vapor inhalation procedures with the client's response understanding what was explained by the author. Then teaching non-pharmacological techniques to clients, namely by applying eucalyptus aromatherapy, clients are able to follow well, clients say breathing is slightly relieved, breathing frequency is 24x/minute, shortness of breath is slightly reduced but still present, and there is still a cough.

c. Implementation of the third day was carried out by assessing the client's shortness of breath, obtained the client's subjective response said shortness of breath, breathing felt heavy with a frequency of 25x/minute, weezing sounds were heard and coughing with yellow sputum. Before doing simple steam inhalation, the client felt shortness of breath during activity and disappeared when resting, the shortness felt was lost. the client's objective response objectively the client looked pale and held the chest, then the author explained the purpose and benefits and procedures of simple steam inhalation with the client's response understanding what was explained by the author. Then teaching non-pharmacological techniques to clients, namely by applying eucalyptus aromatherapy, clients are able to follow well, clients say breathing is relieved shortness of breath is reduced with a breathing frequency of 22x/minute, but still present and coughing is reduced but still present.
d. Implementation of the fourth day was carried out by assessing the client's shortness of breath, obtained the client's subjective response said shortness of breath, heavy breathing sounded weezing and coughing up phlegm with clear sputum. before doing simple steam inhalation, the time that felt the most tightness was when the client was on the move, the tightness was slightly reduced when the client rested, the tightness felt disappeared. the client's objective response looked pale and held the chest, then the author explained the purpose and benefits and procedures of simple steam inhalation with the client's response understanding what was explained by the author. Then teaching non-pharmacological techniques to clients, namely by applying eucalyptus aromatherapy, clients are able to follow well, clients say breathing is more relieved, shortness of breath is slightly reduced with a breathing frequency of 22x/minute, and coughing is reduced.
e. Implementation of the fifth day was carried out by assessing the client's tightness, obtained the client's subjective response said shortness of breath, breathing felt heavy, weezing sounds were heard and coughing with clear sputum. Before doing simple vapor inhalation, the most difficult time was when the client was active, the shortness was slightly reduced when the client rested, the shortness felt disappeared. The client's objective response looked pale and held the chest, then the author explained the purpose and benefits and procedures of simple steam inhalation with the client's response understanding what was explained by the author. Then teaching non-pharmacological techniques to clients, namely by applying eucalyptus aromatherapy, clients are able to follow well, clients say breathing is relieved, shortness of breath disappears with a breathing frequency of 20x/minute, and coughing is still there but more reduced.

Nursing Evaluation

a. Non-pharmacological therapy using the application of eucalyptus aromatherapy obtained tightness after therapy, breathing is slightly relieved, the patient can spit out yellow sputum 1x, coughing is slightly reduced, deep breathing is reduced, the results of the respiration examination 24x/minute weezing sound is still heard intervention continued.
b. Non-pharmacological therapy using the application of eucalyptus aromatherapy obtained tightness after therapy, breathing is slightly relieved with the results of sputum discharge 1 time yellow, coughing slightly reduced, the chest does not feel heavy anymore, deep breathing is reduced, the results of the respiration examination are 24x/minute, the sound of weezing is still heard, the intervention is continued.

c. Non-pharmacological therapy using the application of eucalyptus aromatherapy obtained tightness after therapy, breathing is slightly relieved with the results of sputum discharge increasing to 3 times and yellow in color, coughing slightly reduced, deep breathing is reduced, the results of the respiration examination 22x/minute, the sound of weezing is still audible intervention continued.
d. Non-pharmacological therapy using the application of eucalyptus aromatherapy obtained tightness after therapy, breathing is slightly relieved with the results of increased sputum discharge with a clear color, coughing slightly reduced, the chest does not feel heavy anymore, deep breathing is reduced, the results of the respiration examination are 22x/minute, the weezing sound is not heard, the intervention is continued.
e. Non-pharmacological therapy using the application of eucalyptus aromatherapy obtained tightness after therapy, breathing is slightly relieved with the results of increased sputum discharge with a clear color, coughing is reduced, the chest does not feel heavy anymore, deep breathing is reduced, the results of the respiration examination are 20x/minute, the weezing sound is not heard. the client said the sputum discharge was increased, the intervention was stopped.

Discussion

The main complaint felt by clients with asthma is shortness of breath. based on the assessment of the client looking pale, composmentis consciousness, the client complains of shortness of breath in the history of the current disease, the assessment results obtained are clients complaining of shortness of breath, chest heaviness and also coughing up phlegm. Clients feel shortness of breath and cough during cold weather or at night. shortness of breath occurs, shortness of breath gets worse when doing activities, shortness of breath decreases when the client is not doing activities. Blood pressure 150/80, respiration 26x/min, pulse 78x/min and weezing sound. The client said he had a history of asthma about 5 years ago, the client's family health history said he lived with his second child and grandchildren, the client said in his family there were those who had a similar disease, namely his mother. the ability to control family health is good, if there are health complaints in family members, the family will check with the nearest health center or hospital. The results of the study obtained nursing diagnoses that appeared were Ineffectiveness of airway clearance associated with excess mucus, retained secretions. In the diagnosis, the author only takes one priority nursing diagnosis is the ineffectiveness of airway clearance associated with excess mucus. this is because the author wants to focus on the application of eucalyptus aromatherapy to asthma.

Interventions performed on the diagnosis of ineffectiveness of airway clearance associated with excess mucus, retained secretions, namely monitoring the client's vital signs, adjusting the patient's position to maximize ventilation, performing chest physiotherapy, giving warm drinks to relieve breathing, motivating clients to breathe slowly, then teaching effective cough techniques. Perform non-pharmacological treatment of shortness of breath, namely simple steam inhalation with eucalyptus to reduce shortness of breath with 10-15 minutes for each session and carried out for 5 days, evaluate shortness of breath. Perform non-pharmacological shortness of breath treatment, namely simple steam inhalation with eucalyptus to reduce shortness of breath with a time of 10-15 minutes for each session and carried out for 5 days, evaluate shortness of breath. This simple steam inhalation therapy of eucalyptus aromatherapy is an alternative to reduce shortness of breath in asthmatics that can be practiced independently by clients and families.

The implementation carried out by the author on the ineffectiveness of airway clearance associated with excess mucus, retained secretions, namely monitoring the client's vital signs, adjusting the patient's position in maximizing ventilation, performing chest physiotherapy, giving warm drinks to relieve breathing, motivating clients to breathe slowly, deeply and then teaching effective cough techniques. Perform non-pharmacological shortness of breath treatment, namely

simple steam inhalation with eucalyptus to reduce shortness of breath with 10-15 minutes for each session and carried out for 5 days, then evaluate shortness of breath.

Nursing evaluation is carried out after performing the nof pharmacology technique of applying eucalyptus aromatherapy for 5 visits in 5 days each session for 10-15 minutes, with the results of reduced tightness. The client looks relaxed and the client can re-demonstrate the simple steam inhalation therapy of eucalyptus aromatherapy that has been taught, before therapy is obtained tightness and also coughing up phlegm after therapy the client is able to remove sputum easily and sputum discharge is more increased, tightness decreases where eucalyptus aromatherapy therapy effectively reduces shortness of breath in asthma patients.

CONCLUSION

Based on nursing care in patients with nursing problems ineffectiveness of airway clearance associated with excess mucus given non-pharmacological techniques, namely simple steam inhalation therapy of eucalyptus aromatherapy, proves that there is an influence in providing simple steam inhalation therapy of eucalyptus aromatherapy in asthmatics. The effect of simple steam inhalation therapy of eucalyptus aromatherapy on asthmatics can effectively reduce shortness of breath in asthmatics.

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