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Nursing care for patients with chronic obstructive pulmonary disease with ineffective airway clearance: case report

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Abstract
Gradual narrowing of the airway caused by Chronic Obstructive Pulmonary Disease (COPD), gas exchange is impaired, and breathing becomes difficult. COPD is a long-term condition that cannot be cured. Preventing symptoms from worsening and making the patient more comfortable should be the top priority of healthcare providers when managing this disease. COPD can be emphysema (a lung disease that causes damage to the alveolus), chronic bronchitis and small airways disease which are pathologically distinct but can occur simultaneously. According to the WHO, chronic obstructive pulmonary disease (COPD) ranks as the third worst killer in the world. Approximately 3.7% of Indonesia's population, or 9.2 million people, suffer from chronic obstructive pulmonary disease. This study aims to determine changes in the condition of palliative patients with COPD after nursing interventions for patients and families. This research method uses a case study method with observation, interviews, access to medical records, using a monitor to determine the patient's vital signs, chest physiotherapy health education is carried out in the patient's room, carried out to the patient's family with leaflet media accompanied by demonstration methods and direct practice to patients. The conclusion of this study is that chest physiotherapy intervention, collaborated with pharmacological therapy mucolytic n.ace and combivent nebulizer, has proven effective in reducing the problem of ineffective airway clearance in palliative patients with copd. Suggestions for future researchers can use other health education methods with other suitable topics to reduce the problem of ineffective airway clearance in COPD patients with palliative conditions who experience decreased awareness.

Keywords: airway clearance; chest physiotherapy; chronic obstructive pulmonary disease

1. Introduction
Patients and their families facing terminal illness may find relief through palliative care, a strategy that attempts to alleviate symptoms rather than cure them. (Shatri et al., 2020) . This care is accomplished by identifying and treating pain and other physical, psychological, social, and spiritual problems as soon as they arise, and by preventing and ending suffering. Forty to sixty percent of all deaths are caused by illnesses that require palliative care.

A lung disease known as chronic obstructive pulmonary disease (COPD) can gradually restrict the airways, which in turn impairs gas exchange and makes breathing difficult (Muliase, 2023) . COPD is a long-term condition that cannot be cured. Prevention of exacerbation episodes and improvement of patient comfort are the main goals of health care for this condition (Sulistiowati et al., 2021) . COPD is a progressive disease with symptoms of irreversible airflow limitation to the lungs. COPD can be emphysema (a lung disease that causes damage to the alveolus), chronic bronchitis and small airway disease which are pathologically different but can occur together. According to WHO, chronic obstructive pulmonary disease (COPD) ranks as the third worst killer in the world. Approximately 3.7% of the Indonesian population, or 9.2 million people, suffer from chronic obstructive pulmonary disease. (Ministry of Health of the Republic of Indonesia, 2021) in (Khasanah et al., 2023) . The World Health Organization reports that 6.3% of the adult population in 12 Southeast Asian countries suffer from moderate to severe chronic obstructive pulmonary disease (COPD) (Lutfian, 2021) .

Chronic obstructive pulmonary disease (COPD) has 209 million incidents and 3.2 million deaths per year, according to data from the Global Burden of Diseases 2019 Diseases and Injuries Collaborators. Asthma ranks fifth among the top respiratory diseases in terms of global mortality, behind pneumonia, lung cancer, tuberculosis and COPD (Ministry of Health, 2023). The 2021 Global Initiative for Chronic Obstructive Lung Disease found that COPD is one of the top three causes of death in the world, with 90% of deaths occurring in low- and middle-income countries. The disease was responsible for the deaths of nearly 3 million people in 2012, which is about 6% of the total death rate worldwide. There

has been a recent increase in the number of COPD cases in Indonesia (Yulianti & Astari, 2020) . According to the Indonesian Ministry of Health's 2019 statistics, the prevalence of chronic obstructive pulmonary disease (COPD) in the country is 3.7% per 100,000 people, with the highest incidence in the age group of 30 years and above. (Lutfian, 2021) . Based on the 2018 Basic Health Research, the prevalence of Chronic Obstructive Pulmonary Disease (COPD) in Indonesia is higher in men, at 4.2% compared to women, at 3.3%. The Special Region of Yogyakarta has a prevalence of 3.1% (Yulianti & Astari, 2020) .

Risk factors for chronic obstructive pulmonary disease (COPD) include exposure to chemicals and industrial dust, smoking (both active and passive), indoor and outdoor air pollution, genetics, infections, socioeconomic status, and increasing age (Tana et al., 2016) . Signs and symptoms of chronic obstructive pulmonary disease (COPD) can range from completely asymptomatic to those with moderate to severe manifestations, such as persistent cough, phlegm, difficulty breathing on exertion, difficulty breathing even after taking medication, and sudden and severe episodes of difficulty breathing. Patients with COPD generally have a productive cough, with sputum retention and mucus hypersecretion being the main symptoms affecting up to 22% of the population (Daynes et al., 2021) . As a result, patients will experience an imbalance at the physiological needs level of Maslow's hierarchy. As oxygen is the most basic need for the human body, this diagnosis should be a major consideration. Respiratory system disorders are one of the symptoms of this disease. (Fitri Anggraeni & Susilo, 2024) .

Chronic obstructive pulmonary disease (COPD) worsens over time, the only treatment options are palliative and supportive. This condition costs society both directly and indirectly (Tana et al., 2016) . Feelings of helplessness, hopelessness, and stress are among the psychological problems experienced by patients with chronic conditions. (Nugraha & Ramdhanie, 2018) . There is a critical need for family caregivers as people with chronic illnesses require constant attention. (Kamalah & Kristianto, 2020; Rahmawati & Rahayu, 2019).

When caring for a loved one, family members may experience feelings of worry, anxiety and burden. This may be related to the long financial burden of therapy and patient care (Kusnadi et al., 2023) . Palliative care is essential as it helps people with terminal illnesses and their families live a better life by coping with physical, mental, and spiritual symptoms, and preventing and uncovering complications through early diagnosis, thorough evaluation, and pain management. The prevalence of COPD is increasing throughout Indonesia and is still high in Yogyakarta so researchers are interested in studying palliative nursing care and knowing the effectiveness of chest physiotherapy education for COPD patients.

2. Method

The research design used a case study approach to intervention. The subjects in this case study were individuals who had been diagnosed with COPD and had difficulty with the nursing diagnosis of airway clearance. Data collection techniques using primary data, namely making observations made by direct observation of respondents to observe the general condition, awareness, vital signs, and physical examination. Physical examination is an examination to determine the patient's physical condition systematically. (Almubarok & Putra, 2024) . Primary data sources are obtained directly from the results of physical examinations. Inspection, palpation, percussion, and auscultation (IPPA). Inspection is an examination by sight. Palpation means touching it, pressing it, or examining it with fingers or hands. Percussion is a type of testing that involves tapping on vibrational sounds or waves. Auscultation involves listening to sounds produced by internal organs (Pramudia et al., 2023) . Patient records, family history, and other relevant documents serve as secondary data sources. Files containing information about a patient's identity are known as medical records. Examinations, treatment services, actions taken, and other services that have been offered to patients. (Abduh, 2021) Evidence-based references, such as journals, scientific papers, scientific magazines, books, articles, and seminar results provided by knowledgeable sources, can also be used to collect secondary data. Providing an initial estimate of the results the researcher will find, the literature review serves as the basis for the hypothesis. (Harahap et al., 2021) . The data analysis method used is reduction by obtaining information through interviews, secondary data access to medical records and physical examination of research subjects, namely patients with chronic obstructive pulmonary disease. Presentation of data in narrative form from interviews,

access to medical records and physical examinations with patients and families of patients with chronic obstructive pulmonary disease in the Padmanaba East room of Dr. Sardjito Hospital. Drawing conclusions is done by collecting data both primary and secondary, carried out continuously while in the field since formulating the results of interviews, observations, chronology of the disease to cause and effect, at first unclear until it increases to become more detailed (Rijali, 2019)

3. Results and Discussion

3.1. Results

The results of the assessment and examination carried out on patient Mrs. M can be seen in the table below:

Table 1 Assessment Results

Data	Results
Age	81 Years
Gender	Woman
Work	Fried Food Vendor
Main Complaint	The patient experienced decreased consciousness GCS E3V3M4 Delirium, cough
Past Medical History	The patient has a history of asthma for many years. The results of the family assessment showed that the patient used to sell fried food cooked with firewood and then sold it on the side of the road, which resulted in exposure to vehicle pollution for many years since his children were still in school.
Vital Signs	BP: 115/62mmHg, N : 84x/m, S: 36.8ºC, RR: 16x/m, SPO2 100% with NRM 8lpm
Respiratory System	The patient is restless, there are additional breath sounds such as wheezing, rhonchi, can cough but is not effective because of decreased consciousness, there is chest retraction.
Diagnostic Tests	1. Thorax Radiodiagnostics (1/12/2024) Impression: Bilateral pneumonia, normal chest size 2. Laboratory (1/12/2024) a. erythrocytes 4.18 10^6/µL b. Hb 10.7* g/dL c. hematocrit 34.5* % d. leukocytes 17.5* 10^3/µL e. platelets 324 10^3/µL f. albumin 3.05* g/dL g. pH 7.474* h. pCO2 52.6* mmHg i. HCO3 37.8* mmol/L
Pharmacotherapy	a. Omeprazole injection 40 mg/24 hours b. Cetadizime injection 1g/8 hours c. Levofloxacin injection 750 mg/24 hours d. Fartison injection 100 mg/24 hours e. Metoclopramide inj 10mg/12 hours f. Digoxin PO 1x1 tablet g. Bisoprolol PO 1x2.5mg tablet h. n-acetylcysteine PO 200 mg/8 hours i. Nebu combivent 1 resp/8 jam j. Paracetamol 1g inf k. NaCl info 0.9% 30 tpm

The results of vital signs measurements on patient Mrs. M for four days from December 2-5, 2024 can be seen in the table below:

Table 2 Vital Signs

Day	Vital Signs	SPO2
First day	BP: 115/62mmHg N : 84x/m	SPO2 100% with NRM 8lpm

Day	Vital Signs	SPO2
	S: 36.8ºC RR: 16x/m	
The second day	BP: 109/47 mmHg N:86x/m S; 36.2ºC RR: 19x/m	SPO2 : 100% with NRM 12lpm
The third day	BP: 160/84mmHg N: 124x/m S: 37ºC RR: 22x/m	SPO2: 98% with NC 3lpm
The fourth day	BP: 160/90mmHg N: 93x/m S: 36.5ºC RR: 21x/m	SPO2: 98% with NC 3lpm.

3.2. Discussion

The results of the assessment in the managed case showed that Mrs. M with a diagnosis of chronic obstructive pulmonary disease was 81 years old. This is in line with data on chronic obstructive pulmonary disease (COPD), which shows that those aged 40 years and over are the largest age group of COPD patients. The decline in lung function increases with age. A person's ability to protect themselves from disease decreases with age. A more rapid decline in lung function is also associated with aging (Ikhsan & Furqan, 2023) . The World Health Organization reports that 6.3% of the population over 30 years old in 12 Southeast Asian countries suffer from moderate to severe chronic obstructive pulmonary disease. (Lutfian, 2021) . From the assessment results in the managed case, it was found that the patient with chronic obstructive pulmonary disease Mrs. M was a woman. COPD can affect both sexes equally, but men tend to experience it more often and are at higher risk (Astriani et al., 2020) . As a result, women are equally likely to suffer from chronic obstructive pulmonary disease (COPD) due to pollution exposure; in fact, air pollution is responsible for 22% of the 4.3 million deaths per year. (Prayoga et al., 2022)

The results of the assessment in the managed case found that the patient worked as a fried food trader who cooked using firewood and then sold on the side of the highway which was often exposed to dust and air pollution for years since his son was a child. Exposure to dust in the workplace is a known risk factor for COPD. Those who work and are constantly exposed to dust have a higher risk of contracting chronic obstructive pulmonary disease (COPD), according to previous studies. (Ikhsan & Furqan, 2023) . Air pollution is one of the causes of COPD. When air pollution levels are high, more particles enter the lungs. Some examples of air contaminants include smoke, dust, gases and vapors. Chronic respiratory diseases are more likely to develop in those who are regularly exposed to pollutants. (Astriani et al., 2020) .

Patient Mrs. M, female aged 81 years, the family said the patient had decreased consciousness, coughing cough. This is in line with research Islamasyhaka et al., 2020 , that patients experience decreased consciousness caused by COPD. Emergencies in COPD patients include respiratory infections, dyspnea (difficulty breathing), and loss of consciousness. (Suardana et al., 2020) . Carbon dioxide retention, often known as hypercapnia or elevated PaCO2, is a hallmark of this respiratory failure. An increase in PaCO2 value of more than 50 mmHg is indicative of type II hypercapnic respiratory failure. The patient's pCO2 reading was 52.6 mmHg at the time of treatment. When ventilation and lung perfusion are unbalanced, this causes hypoxemia, which in turn causes hypercapnia (increased carbon dioxide production) or an imbalance between the two (Suci & Wahab, 2024) . The results of the assessment of the managed case, the patient Mrs.M, 81 years old female, was referred from Siloam Hospital to Dr. Sardjito Hospital on December 1, 2024, the patient experienced a decrease in consciousness GCS E3V3M4 Delirium, coughing, the patient has a history of asthma since many years ago, the results of the assessment with the family found that the patient used to sell fried foods cooked with firewood and then sold on the side of the road which caused exposure to vehicle pollution for years since her son was still in school. In asthma, the bronchial airway becomes narrower and restricts air flowing into the lungs so that it will cause COPD (Ramadhani et al., 2022) . Asthma

sufferers have a higher risk of suffering from COPD than someone who has no history of respiratory disease. (Ramadhani et al., 2022) . The results of vital signs obtained from the measurement of the pulse rate in one minute on Mrs. M were 84x/minute. The value of physiological and pathological processes in the body can be measured through the pulse rate. The normal pulse rate for adults is between sixty and one hundred beats per minute. (Astuti et al., 2024) . The assessment results obtained from the measurement of Mrs. M's oxygen saturation was 100% with 8lpm NRM oxygen support. Oxygen saturation can be reduced in COPD patients due to symptoms including shortness of breath, coughing up phlegm, and airway obstruction. (Lucas & Willis, 2021) . Chronic obstructive pulmonary disease (COPD) is characterized by a chronic inflammatory response in the lungs and respiratory tract to harmful particles or gases, leading to decreased oxygen saturation and symptoms of airflow obstruction in the lungs. The disease is progressive and not completely curable. The disease is persistent. (Wahidati et al., 2019) . Patients with chronic obstructive pulmonary disease (COPD) have lower oxygen saturation values when they experience shortness of breath. A decrease in the amount of oxygen in red blood cells, which transports hemoglobin to the left heart and allows blood to circulate to the periphery, may have a detrimental influence on the patient's body. This can occur when the supply of oxygen in the blood is disrupted in the arteries. (Wahidati et al., 2019) .

The assessment results obtained the measurement of Mrs. M's respiratory frequency in one minute is 16x. Breaths per minute measures the rate of breathing. In healthy adults, a respiratory rate between twelve and twenty breaths per minute is considered normal. (Astuti et al., 2024) . This is in line with the results of the assessment which shows that from the secondary data of medical records patients experience exacerbation of improvement, because research in the literature highlights the importance of reliable RR monitoring in the early detection of COPD, where RR more than 25 breaths per minute (bpm) is considered a sign of COPD exacerbation. (Al-Halhouli et al., 2021) . In many cases palliative patients are prone to experiencing Terminal Lucidity (Chiriboga-Oleszczak, 2017) . Terminal Lucidity is the return of normal conditions or an extraordinary increase in patients shortly before death. In managed patients, the results of stable respiration are obtained at 16x/min where the condition is a normal breathing rate in adults, so that it can indicate a condition of Terminal Lucidity which is a return to normal conditions or an extraordinary increase in the patient shortly before death, because 6 days after the assessment, the patient died. The assessment results obtained the results of Mrs. M's blood pressure measurements were BP: 115/62mmHg. A person's hemodynamic status can be better understood by using vital signs, one of which is blood pressure. In adults, systolic pressure of 90-140 mmHg and diastolic pressure of 60-100 mmHg are considered normal. (Astuti et al., 2024) The assessment results obtained from the measurement of Mrs. M's body temperature is 36.8ºC. The normal body temperature of a healthy adult individual is around 36.5-37.5ºC (Astuti et al., 2024) .

The results of the assessment showed that Mrs. M was restless, there were additional wheezing breath sounds, ronkhi in all lobes, could cough but was ineffective due to decreased consciousness, there was chest retraction when breathing, had a medical diagnosis of COPD. When patients experience shortness of breath due to sputum production, additional breath sounds (ronchi) may occur. (Lestari & Apriza, 2024) . The use of breathing muscles can be seen from chest wall retraction. (Mardlotillah et al., 2023) . Patients who have diseases of the respiratory system, especially chronic irritation of the respiratory tract, can result in an increase in the number of globet cells that produce mucus so that there is an increase in the amount of mucus in patients experiencing respiratory problems (Fitriani et al., 2023). The results of the assessment found that Mrs. M is often exposed to air pollution and dust for years because she sells on the side of the road. Mrs. M also cooks fried food using firewood. Tobacco use and other forms of air pollution, both indoors and outdoors, are known to increase the likelihood of developing chronic obstructive pulmonary disease (COPD)(Nurfitriani & Mulia Ariesta, 2021) . The assessment results obtained from the blood gas analysis on Mrs. M were pH 7.474, pCO2 52.6 mmHg, HCO3 37.8 mmol/L with the interpretation of partially compensated metabolic alkalosis. Between 22 and 28 mmol/L (arterial) is the standard range for HCO3-. Metabolic alkalosis is indicated by values greater than normal, and metabolic acidosis is indicated by values lower than normal (Fitriani et al., 2023) . Acute metabolic alkalosis, caused by renal excretion of chloride, occurs in hyperventilated individuals with chronic obstructive pulmonary disease (COPD). Sodium overload, sensitivity to chloride, and treatment with 0.9% NaCl can cause alkalosis. (Rahman et al., 2023) . Metabolic alkalosis due to excessive diuretic administration can affect the breathing of COPD patients, hypoventilation

occurs which can exacerbate hypercapnia. (Dhillon, 2016) . Hypercapnia or elevated PaCO2 is a hallmark of respiratory failure. An increase in PaCO2 value of more than 50 mmHg is an indication of type II hypercapnia respiratory failure. (Suci & Wahab, 2024) . In this managed patient, the pCO2 result was 52.6 mmHg. Pharmacotherapy in patient Mrs.M with chronic obstructive pulmonary disease is n-acetylcystein PO 200mg/8h, Nebu combivent 1resp/8h. By dissolving phlegm, especially thick phlegm, mucolytic drugs can reduce the frequency and severity of exacerbations (Ilmi et al., 2023). The results of the study Rumampuk & Thalib, 2020 show that treatment with a nebulizer is the right choice for COPD patients to release airway blockages caused by foreign bodies and keep their airways open

The results of the assessment in the managed case, the patient's family said the patient had decreased consciousness, coughing, the patient's objective data was BP: 115/62mmHg, N: 84x/m, S: 36.8C, RR: 16x/m, SPO2 100% with NRM 8lpm, the patient is restless, there are additional breath sounds of wheezing, ronkhi, can cough but not effective, and COPD.The patient's main complaint is in accordance with the researcher's priority regarding inadequate airway clearance as a diagnosis. According to the Indonesian Nursing Diagnosis Standards, this condition falls into the physiological subcategory and is categorized as D.0001. The nursing diagnosis has been revised according to the Indonesian Nursing Diagnosis Standards (ICDS) by considering symptoms, signs, and causes. Failure to effectively remove secretions or airway obstruction to maintain a patent airway is defined by SDKI (2018). The results showed that retained secretions were associated with ineffective airway clearance. This causes problems with the patient's physiological needs, which are the basis of Maslow's hierarchy of needs. Oxygen is the most basic human physiological need, therefore this diagnosis must be addressed immediately. Patients with COPD generally have a productive cough, with sputum retention and mucus hypersecretion being the main symptoms affecting up to 22% of the population (Daynes et al., 2021) . Retained secretions leading to poor airway clearance is a nursing diagnostic used to implement Indonesian nursing outcome standards in the case at hand. The author's goal was to meet the standards set by the SLKI label, specifically Airway Clearance (L.01001), including increased respiratory rate, improved breathing pattern, reduced dyspnea, easier speaking, reduced anxiety, and more effective coughing. Patient characteristics that can be assessed through treatment and used to judge the success of intervention outcomes are called outcome criteria (A. Rahman, 2021)

The author chooses to use interventions from the Indonesian Nursing Intervention Standards (SIKI) labeled Airway Management (I.01011) which consists of observation, therapeutic, educational and collaborative actions. Observation: Monitor breathing patterns (frequency, depth, effort), Monitor additional breath sounds, Monitor sputum. Therapeutics: Keep the airway open, position the patient in semi-Fowler or Fowler position, give oxygen as prescribed, and monitor vital signs (NRM) every 8 hours or as directed by the doctor. Education: Teach effective coughing techniques, chest physiotherapy. Collaboration: Manage the administration of mucolytic N.ace PO 200mg/8h, Manage the administration of combivent therapy nebulizer 1/8h according to the doctor's advice. Findings (Lucas & Willis, 2021) analysis of pre- and post-treatment data shows that chest physiotherapy is an excellent method to help COPD patients who have difficulty emptying the airway. The combination of ipratropium found in Atrovent and salbumatol sulfate found in Ventolin, Combivent opens the airway to allow more oxygen in and out, thus reducing airway blockage. (Ikhsan & Furqan, 2023) . Acetylcisteine acts as a mucolytic due to its free sulfhydryl group, which can open disulfide bonds on mucoproteins and reduce mucus viscosity (Djuwarno et al., 2023) . Chest physiotherapy utilizes the force of gravity to help remove mucus from the lungs. If you want to get the most out of chest physiotherapy, schedule physiotherapy one hour before breakfast and before bedtime. As part of chest physiotherapy, patients suffering from respiratory system diseases are given vibration and clapping exercises. In patients with chronic obstructive pulmonary disease (COPD), chest physiotherapy has a greater impact on sputum discharge and oxygen saturation than effective coughing alone (Ristyowati & Aini, 2023) .

Direct application of the established care plan is what happens during the nursing implementation stage of patient care. The semi-Fowler's position is used as a therapeutic on the patient. It is a way to lift the body at a 45˚ angle, which allows gravity to expand the lungs and reduce tension on the diaphragm from the abdomen. (Almubarok & Putra, 2024). Providing chest physiotherapy to patients and instructing families to perform chest physiotherapy using media. One type of printed promotional material is a two- or three-fold brochure containing health-related information.

The results of Wulandari's research in 2020 showed a considerable change in understanding between before and after health counseling using leaflets, so researchers used leaflets as a medium for health counseling. Efforts to socialize and change people's perspectives through leaflet distribution have been successful. (Pratiwi et al., 2022) in the implementation of chest physiotherapy health education in families, demonstrations are also carried out, both of which provide different results if used for health education. Since the subject pays close attention to the content provided, the demonstration approach can eliminate verbalism and make the learning process easier to understand. This is different from lectures, where communication is only one-way (Sari et al., 2018) . Collaborative administration of mucolytics and combivent nebulizers was also carried out for four days when providing care to managed patients. Chest physiotherapy is more effective than coughing alone in improving sputum discharge. In addition, Priadi's research found that chest physiotherapy helps clear the airways of excess secretions and mucus. (Ristyowati & Aini, 2023) .

The final evaluation of nursing in managed cases after carrying out nursing actions for 4x24 hours, the nursing problem of ineffective airway clearance related to retained secretions has not been resolved but the patient's condition shows a progress characterized by an effective cough increasing from an initial scale of 1 (decreased) to a scale (moderately decreased), sputum production decreased from an initial scale of 1 (increased) to a scale of 2 (moderately increased), dyspnea decreased from scale 1 (increasing) to scale 2 (moderately increasing), difficulty speaking decreased from scale 2 (moderately increasing) to scale 3 (moderate), restlessness decreased from scale 1 (increasing) to scale 2 (moderately increasing), breathing frequency improved from scale 1 (worsening) to scale 3 (moderate), breathing pattern improved from scale 1 (worsening) to scale 3 (moderate). This shows the results that the nursing problem of airway clearance has not been resolved because of the predetermined outcome criteria, it has not reached the formulated outcome criteria. This shows that the research is in accordance with the purpose of palliative care, namely End Of Life care.

End Of Life care is a form of palliative or hospice care that describes the support and medical care provided during the period leading up to death, with a focus on providing symptomatic relief for people who are dying by identifying, assessing, and treating pain and other disturbing physical signs and symptoms, along with emotional, social, and spiritual support tailored to the needs and wishes of the dying and their loved ones (Ijaopo et al., 2023) . End Of Life care in this managed patient shows the results that the care period tries to reduce disturbing symptoms in the patient, namely from subjective data the patient's family said the patient's breathing was still grok grok, anxiety was reduced, maximizing family support for the patient with the family saying they would do chest physiotherapy to the patient to help remove phlegm in the patient and provide support for the patient. From the objective data the patient looks calmer, wants to talk, can speak per word but not a long sentence, additional breath sounds, there is no chest retraction, BP: 160/90mmHg, N: 93x/m, S: 36.5C, RR: 21x/m, SPO2; 98% with NK 3lpm, the problem of ineffective airway clearance has not been resolved. Continuous interventions are planned, such as NK oxygenation of 3 liters per minute, chest physiotherapy instructions, management of mucolytic administration (n.ace po 200 mg/8 hours), and management of nebulizer therapy (combivent 1/8 hours).

The results of this study are in line with research Yudianti, 2020 that chest physiotherapy is an excellent therapy to help COPD patients who have difficulty emptying their airways. The patient obtained pCO2 results of 52.6 mmHg, but the patient's family refused intubation so that NRM was used to preoxygenate the patient before induction and intubation and was not used as long-term oxygen therapy because it resulted in carbon dioxide retention and irritation of the nasal and oral mucosa because excess supplemental oxygen can increase mortality in critically ill patients due to oxygen poisoning which was then continued with 3 lpm nasal cannula oxygenation (Li et al., 2021) .

4. Conclusion

The conclusion of this study is that from the results of the implementation carried out for 4x24 hours the nursing problem of ineffective airway clearance in COPD patients was not resolved but the patient showed progress which proved that chest physiotherapy interventions, collaborated with pharmacological therapy mucolytic n.ace and combivent nebulizer proved effective in reducing the problem of ineffective airway clearance in palliative patients with copd. Suggestions for further researchers can use other health education methods with other appropriate topics to reduce the problem

of ineffective airway clearance in COPD patients with palliative conditions who experience decreased awareness, it is also hoped that hospitals can improve the application of nursing implementation which each year is more developed in accordance with nursing care theories.

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