

NURSING CARE FOR PNEUMONIA PATIENTS

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KEYWORDS	ABSTRACT
Shortness of Breath, Pneumonia, Pursed Elevator Breathing, Deep Breathing Exercise.	Pneumonia is an acute infectious disease that affects the alveoli and is caused by specific microorganisms, characterized by symptoms of coughing and shortness of breath. In the case of 2019, WHO recorded the most deaths in the world caused by pneumonia, reaching a total of 62,782 cases. In Indonesia alone, in 2021, there were 2.56 million confirmed cases of pneumonia. The prevalence of pneumonia in West Java reached 2.6%. This study aims to provide an overview of nursing care for pneumonia patients admitted to the emergency room of Gunung Jati Hospital. The method used is a descriptive method with a case study design. The results of this study indicate that the intervention carried out for 1 x 7 hours with the cooperation of the emergency room nurse had a positive impact. The author has carried out actions by the nursing plan that has been made. The implementation of Evidence-Based Practice (EBP) Pursed Lift Breathing (PLB). Deep Breathing Exercise (DBE) affects the patient's breathing frequency. Before the implementation of the intervention, the patient's breathing frequency (Respiratory Rate / RR) was 28 x/min. After implementing the intervention, the patient's breathing frequency dropped to 26 x/min. It can be concluded that the pursed lift breathing intervention can significantly reduce shortness of breath in patients with pneumonia. The implication of this study is the importance of applying appropriate and measurable interventions in nursing care for pneumonia patients to improve the quality of care and minimize the risk of complications.

INTRODUCTION

The most common lung infection is pneumonia. Pneumonia is known as wet lung (Annashr et al., 2023). According to the Ministry of Health (2019), pneumonia is an acute infection caused by microorganisms such as viruses, bacteria, or fungi that damage the alveoli. (FIRDAUZA, 2022). Pneumonia is particularly sensitive when the immune system is weakened, making the body susceptible to contracting the virus (Ocrospoma & Restrepo, 2024). Usually, the infection spreads from people directly exposed to the surrounding environment, direct contact with infected people, through hands or splashes from coughing or sneezing. (Wulandari & Iskandar, 2021).

Pneumonia cases (WHO) in 2019 were the most deaths in the world, with a total of 62,782 cases (Herlina, 2020). There were 2.56 million confirmed cases of pneumonia in Indonesia in 2021. The prevalence of pneumonia in West Java was 2.6%. Signs and symptoms

of pneumonia can range from mild to severe (Annashr et al., 2023). Common signs and symptoms in pneumonia patients are fever, cough with sputum or mucus, sweating or chills, shortness of breath, chest pain when breathing or coughing, no appetite, nausea, vomiting, and headache (Waterer, 2021). In addition, pneumonia patients also have rakhi and infiltrate images on thoracic X-rays (Mani, 2018).

Pneumonia is an infectious respiratory disease with symptoms of cough, runny nose, and shortness of breath (Novitasari & Putri, 2022). One of the nursing interventions used to overcome ineffective breathing patterns is pursed lips breathing (PLB) and deep breathing exercises (DBE) (Gugnani & Mehandiratta, 2020). Nursing interventions are used to overcome ineffective breathing patterns, including pursed lips breathing (PLB) and deep breathing exercises (DBE) breathing exercises (Gugnani & Mehandiratta, 2020). A study shows that deep breathing exercises can impact or influence reducing shortness of breath (Ali et al., 2022). The pursed lips breathing (PLB) intervention can reduce shortness of breath in patients with pneumonia; this intervention was carried out for three days (Sadat, 2022). This combination of interventions reduces dyspnea in pneumonia (Santoso et al., 2022).

Pneumonia is quite common in developing countries, especially in Indonesia, and can cause various complications, so the role of nurses in nursing is needed to reduce the incidence of pneumonia and prevent complications. Nurses have a role in caring for pneumonia patients; the first role is promotion, which can be done by motivating patients to exercise, maintain food, avoid tobacco smoke, and maintain health. Another role is preventive, where nurses can educate patients about the definition, etiology, clinical manifestations, and complications of pneumonia. The third role is therapeutic, where nurses work with other healthcare teams to administer medications such as Combivent inhalation and ceftriaxone injections. In addition, the fourth role is rehabilitative, where nurses advise patients to take a short break to improve the recovery process and lead a healthy and good lifestyle (Herlina, 2020).

In addition to the roles of nurses above, this case study aims to apply nurses' independent actions in dealing with shortness of breath problems in patients with pneumonia. This study will provide independent health support with pursed lips breathing (PLB) and deep breathing exercises (DBE). Based on the phenomena previously described, this study aims to provide a comprehensive description of nursing care for patients with pneumonia so that it can improve the patient's quality of life and accelerate the healing process of pneumonia.

RESEARCH METHOD

This research design is descriptive with a case study approach. The location of data collection for this scientific paper case study is in the emergency room of Gunung Jati General Hospital. The time data collection was carried out on March 12, 2024, at 15:00. The subject of this case study research was one patient diagnosed with pneumonia with airway clearance problems, hypovolemia, and acute pain. The research process included participants willing to volunteer to become research subjects without coercion. The instrument used in the data collection process was the nursing care format for pneumonia patients. The data collection process used anamnesis, physical examination, and documentation studies for other data sources. The author has carried out the stages of data analysis since the emergency room of Gunung Jati General Hospital, which starts from data collection to data presentation.

RESULT AND DISCUSSION

Mr. A, 62 years old, came to the emergency room on 12-03-2024 at 15:00 WIB with complaints of shortness of breath and coughing up phlegm for the past five days; the patient had difficulty coughing up phlegm, shortness of breath had felt since morning at 07:00 WIB, the patient complained of chest pain when coughing, pain like stabbing, pain scale 6 (1-10) moderate, the pain was felt to be intermittent, the patient also said that it had been three days since the patient could not swallow food, nausea had vomited once this morning, urination was not smooth which came out only a little. Obs TTV: BP: 120/59 mmHg, Pulse: 110 x/min, RR: 36 x/min, SPO2: 86%, Temperature: 36,7 °C. The patient's previous health history has a history of heart and lung disease consul at Ciremai Hospital; the patient takes ofloxacin and salbutamol. In the family health history, the patient's father has a history of the same disease as the patient, namely, lungs and heart. In the primary survey assessment and resuscitation, the patient's level of consciousness was compos mentis with GCS: 15 (E4M6V5), patient breathing tachypnea with RR: 36 x / min. The patient uses breathing muscles; there is secretion/sputum on the way of breathing, Ronchi breath sounds, CRT <3 Second, blood pressure is 120/59 mmHg, the radial pulse is 110 x / min, and the peripheral acral is warm.

The supporting assessment obtained the following data: The results of the ECG Electrocardiogram on 12-03-2024 with the impression of Sinus Tachycardia. There are also X-ray results with the impression of Bilateral Pneumonia. The therapy obtained by the client is Nacl 20 TPM given through IV to restore electrolyte balance, Ventolin 3X1 Amp inhalation is given using a nebulizer to treat or prevent bronchospasm or narrowing of the airways in the lungs, NAC 3X1 Tab peroral to dilute sputum so that sputum is easier to remove when coughing, NRM 10 LPM oxygenation is used in emergencies to prevent hypoxemia, or also known as low blood oxygenation levels, dexametashon 3X1 Amp given by IV to reduce or relieve inflammation in allergic conditions or autoimmune diseases, cefoperazon 2X1 g by IV antibiotic drug to treat various bacterial infections omeprazole 2X1 g by IV to treat excessive stomach acid and complaints that follow, genexpert to detect TB cases and rifampicin resistance.

In theory, pneumonia is an acute infectious disease that affects tissue (lungs) precisely in the alveolus caused by several microorganisms such as viruses, bacteria, fungi, and other microorganisms in this disease are more susceptible to men than women (Damanik et al., 2023). This is because men have smoking and alcoholic behavior and also age greatly influences because at an older age the immune system has been reduced in the body, so it is easily infected (Herlina, 2020). There is a correspondence between the assessment and the existing theory because the patient's age and gender are often susceptible to pneumonia (Azar, 2024).

Based on the results of the assessment conducted on Mr. "A" with a medical diagnosis of pneumonia, the authors raised nursing diagnoses based on the priority of the problem as follows:

- 1) Ineffective airway clearance is associated with airway hypersecretion. The author raises this diagnosis because, from the assessment results, the author gets data that supports the establishment of this diagnosis. Namely, the patient entered with shortness of breath, breathing frequency 36x/minute, coughing with phlegm, Ronchi sound, SPO2 86%, and accompanied by a supporting examination, namely the results of bilateral pneumonia thorax photos.

- 2) Hypovolemia is associated with insufficient fluid intake. The author raises this diagnosis because, from the results of the assessment, the author gets data that supports the establishment of this diagnosis, namely, the patient's family said the patient had not eaten and drank for three days, nausea had vomited once in the morning, urination was not smooth which came out only a little, pulse frequency increased, dry mucous membranes, the patient looked weak.
- 3) Acute pain associated with physiological injury agents. The research raised this diagnosis because, from the results of the assessment, the authors obtained data that supported the establishment of this diagnosis, namely, the patient complained of chest pain when coughing with a pain scale of 6 (1-10) moderate, the patient appeared to grimace, the pulse frequency increased.

Interventions prepared by the author are tailored to the patient's diagnosis and needs, including the expected things, interventions, and rationales for action. Nursing interventions that the author raises in real cases are tailored to the patient's needs by focusing on independent, therapeutic, educational, and collaborative actions. It also follows the Indonesian Nursing Diagnosis Standards (SDKI, *Standar Diagnosis Keperawatan Indonesia*), Indonesian Nursing Intervention Standards (SIKI, *Standar Intervensi Keperawatan Indonesia*), and Indonesian Nursing Outcome Standards.

- 1) Ineffective airway clearance is associated with airway hypersecretion. The interventions prepared by the author are monitoring breathing patterns, monitoring additional breath sounds, monitoring sputum, positioning a semi-fowler, teaching effective coughing techniques, and collaborative bronchodilator administration (Working Group Team, 2018). Effective coughing is expected to be moderately improved, dyspnea is moderately improved, sputum production is moderately improved, breathing frequency is moderately improved, and breathing patterns are moderately improved (Working Group Team, 2018).
- 2) Hypovolemia is associated with a lack of intake. The interventions prepared by the author are checking for signs and symptoms of hypovolemia (e.g., increased pulse, dry mucous membranes, weakness), monitoring intake and output, giving oral intake, encouraging increased oral fluid intake, and collaborating on IV fluid administration (e.g., NaCl). (Working Group Team, 2018). Pulse frequency is expected to be moderately improved, mucous membrane is moderately improved, and fluid intake is moderately improved (Pokja Team, 2018).
- 3) Acute pain is associated with physiological injury agents. The interventions prepared by the author are the identification of location, characteristics, duration, frequency, quality, and intensity of pain, identification of pain scales, identification of non-verbal pain responses, identification of factors that aggravate and alleviate pain, facilitation of rest and sleep, teaching non-pharmacological techniques to reduce pain, and collaborative administration of analgesics, if necessary (PPNI, 2018). Pain complaints are expected to decrease, pulse frequency will improve, and grimace will decrease (PPNI, 2018).

For 1 x 7 hours, the author acted according to the nursing plan made according to the Indonesian Nursing Intervention Standard (SIKI). Implementing EBP Pursued lift breathing (PLB) and deep breathing exercise (DBE) affects the frequency of breathing, namely pre-implementation of the patient's breathing frequency RR: 28 x/min, post-implementation RR: 26 x/min.

One of the non-pharmacological therapies provided is the Pursed Lips Breathing exercise. Pursed Lips Breathing is given to help overcome the ineffectiveness of airway clearance in patients with pneumonia by increasing alveolus development in each lung lobe so that alveolus pressure increases and can help push secrets in the airway during expiration and induce standard breathing patterns (Meilani & Zulaikha, 2020). Pursed lip breathing (PLB) is a breathing exercise in which a person inhales air as usual with a closed mouth and then exhales slowly through the mouth in a position similar to whistling the evaluation carried out by the author during the nursing process on the patient for 1 x 7 hours is as follows:

- 1) The first diagnosis is ineffective airway clearance associated with airway hypersecretion. Based on the results of the evaluation carried out by the author before the patient was transferred to the room, the author concluded that the problem of ineffective airway clearance was partially resolved, as evidenced by the patient saying the shortness of breath was slightly reduced and could remove sputum/phlegm after the nebulizer was performed, the patient was installed with NRM oxygen 10 ml, BP: 100/68 mmHg, N: 102 x/min, RR 26 x/min, SPO2: 96%, S: 36,8
- 2) The second diagnosis is hypovolemia, associated with a lack of intake. Based on the results of the evaluation carried out by the author before the patient was transferred to the room, the author concluded that the problem of hypovolemia was partially resolved, as evidenced by the patient being attached to NaCl 0.9 20 tpm.
- 3) The third diagnosis is acute pain associated with physiological injury agents. Based on the results of the evaluation carried out by the author before the patient was taken to the room, the author concluded that the pain problem was partially resolved, as evidenced by chest pain when coughing slightly reduced, a pain scale of 4, and grimacing expression reduced.

CONCLUSION

The conclusion of the results showed that from the assessment conducted on clients with complaints of dyspnea and a history of heart and lung disease, three nursing diagnoses emerged, namely ineffective airway clearance, acute pain, and hypovolemia. To overcome these problems, several interventions were carried out, such as monitoring breathing patterns, pain management, and hypovolemia management. The methods used included Pursed Lift Breathing and Deep Breathing Exercises. The client's response was evaluated during 1x7 hours of treatment by recording the results in SOAP format.

Research advice that can be given is the need for further research to evaluate the effectiveness of the interventions that have been carried out, especially in using the Pursed Lift Breathing and Deep Breathing Exercise methods in clients with a history of heart and lung disease. This can provide a deeper understanding of the effectiveness of these methods in handling complex health conditions.

This study implies that the results can be used as a basis for developing more effective intervention protocols in dealing with breathing problems and pain in clients with a history of heart and lung disease. Implementing methods such as Pursed Lift Breathing and Deep Breathing Exercises may also improve the quality of nursing care in clients with similar conditions, providing more optimal benefits in managing these specific health conditions.

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