

Medical Surgical Nursing Care For Mr. L With Respiratory System Disorders Due To Pulmonary Tuberculosis In The Cenderawasih Ward, Vita Insani Hospital Pematangsiantar

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Abstract

Pulmonary tuberculosis is an infectious disease caused by Mycobacterium tuberculosis. According to the WHO (2024), an estimated 10.7 million people suffer from pulmonary tuberculosis worldwide. The purpose of this study is to address the nursing problem of ineffective airway clearance associated with sputum hypersecretion in pulmonary tuberculosis through nursing care. This research employed a descriptive qualitative method with a case study approach. The sample consisted of one respondent, a pulmonary tuberculosis patient at Vita Insani Hospital in Pematangsiantar. The study was conducted over three days from April 2 to 4, 2026. The research instruments included an informed consent form, an assessment form, an effective cough standard operating procedure (SOP), and a semi-Fowler's position. Meanwhile, the partially resolved problem was ineffective airway clearance, characterized by the patient being able to cough effectively and producing thinner sputum, but additional rhonchi were still heard thinly in both lung fields. The implementation of nursing care for patients with pulmonary tuberculosis through effective coughing exercises, airway management, and energy management has proven effective in overcoming respiratory disorders and physical weakness in patients.

Keywords: Medical - Surgical Nursing Care, Respiratory System, Pulmonary Tuberculosis

INTRODUCTION

Tuberculosis lungs is disease chronic frequent contagious relapse, usually caused by bacteria mycobacterium that attacks Lungs (Huang et al., 2022). Disease tuberculosis lungs is



disease infectious disease caused by mycobacterium tuberculosis and is still become global attention with various effort control done For prevent incident death consequence factors that can increase risk from transmission disease like tuberculosis lungs. The height poverty and lack of knowledge about symptoms and transmission various type disease is also one of the factors that can increase risk transmission disease like tuberculosis lungs (Polit & Beck, 2022).

According to the World Health Organization (Tiew & Drury, 2012) in 2024, an estimated 10.7 million people will suffer from tuberculosis lungs worldwide, including 9.5 million adults, and 1.2 million children. A total of 8.3 million people were reported as case newly diagnosed tuberculosis lungs found in all countries and groups age, there is around 1.23 million death consequence tuberculosis lungs. Globally, tuberculosis lungs is reason death major in the world due to One agent infection and including in 10 causes death top. The eight highest countries contributor case tuberculosis lungs are India as many as 2.7 million people (0.19%), Indonesia as many as 1.06 million people (0.38%), Philippines as many as 741,000 people (0.64%), China as many as 800,000 people (0.06%), Pakistan as many as 620,000 people (0.26%), Nigeria as many as 500,000 people (0.22%), Republic of Democratic Republic of Congo with 359,219 people (0.32%) and Bangladesh with 361,000 people (0.21%). In 2024, cases tuberculosis The number of lung cancer cases in Southeast Asia is 3.6 million people (34%), the number of lung cancer cases in the West Pacific is 2.9 million people (27%), and the number of lung cancer cases in Africa is 2.62 million people (25%), with more parts small in the Eastern Mediterranean as many as 920,000 people (8.6%), America as many as 350,000 people (3.3%), and Europe as many as 204,000 people (1.9%).

According to The Ministry of Health of the Republic of Indonesia (2025), stated that more from 1.09 million cases and 125,000 deaths every year. Tuberculosis lungs become threat health Serious society. Currently, Indonesia occupies ranking second case tuberculosis lungs the most in the world, with a number of provinces in Java as many as 570,000 people (0.38%), North Sumatra as many as 60,000 people (0.39%), and South Sulawesi as many as 30,000 people (0.32%) as contributor case highest, each recorded more of 40,000 cases (Alcusky et al., 2019).

Based on the results survey the beginning of what was done through interview with nurse in the room care stay disease in, known that patient with tuberculosis lungs Still Enough often treated in the room said. Nurse state that part big patient tuberculosis new lungs diagnosed come with complaint longer cough from two Sunday, cough phlegmy sometimes accompanied by blood, fever especially Evening day, sweat at night day, decline weight and appetite decreased appetite. Some patients also experience weakness physique so that need help in activity daily (Hegney et al., 2019).





Impact tuberculosis lungs If No treated with Correct can cause damage permanent in the lungs and interferes with function respiratory infections. Infections that are not under control can cause complications serious, including pulmonary fibrosis, respiratory disorders breathing chronic, and even death. In addition tuberculosis lungs that are not treated with appropriate can cause resistance medicine, which makes treatment become more difficult and requires more therapy intensive. Therefore Therefore, early diagnosis and appropriate treatment are very important. For reduce impact term long and tuberculosis lungs (Shi et al., 2023)

The journal written by Afandi MS & Nurman (Hunter, 2008) shows that implementation care nursing care for patients tuberculosis lungs covering stages assessment, enforcement diagnosis nursing, planning, implementation, and evaluation nursing in a way systematic. Diagnosis nursing found including cleaning airway is not effective, pain acute, and deficit nutrition, which is further handled through intervention nursing in the form of monitoring breathing patterns, exercises cough effective management pain, fulfillment need nutrition, as well as education health to patients and families. Evaluation results show that care nursing care provided capable repair condition clinical patients and overcome problem emerging nursing.

The role of nurses give care nursing care for patients tuberculosis lungs aim For support recovery patients, prevent distribution infection, as well as increase quality life patient. In the context of nursing, nurse own role important in monitoring condition patient, administration therapy in accordance standard treatment, as well as education about importance compliance to treatment. Success therapy tuberculosis is highly dependent on the level of compliance patient in undergo treatment term long (Salzmann-Erikson & Eriksson, 2023)

According to Aprilia & Hidayat's research (2024) states that results assessment patient say shortness of breath, vital signs: BP: 120/90 mmHg, N: 92x/ minute, CRT $\geq$ 2 seconds, cough No effective, rhonchi breath sounds, there is excess sputum colored rather greenish, patient say pain in the chest when a day before enter House sick, patient say scale pain felt by 6 patients say difficult For sleeping, visible bag eyes, diagnosis nursing that is cleaning airway is not effective relate with excessive secretion, pain I relate with agent injury physical and disorders pattern Sleep relate with sleep control, intervention in accordance with SIKI PPNI book (Shorey & Ng, 2022) implementation in accordance with interventions that have been arranged and adjusted with condition patient, and stage evaluation all problem resolved and intervention stopped (Yao et al., 2023).

The results of Rahman's research (2022) stated that that problems that occur is cleaning airway is not effective resulting there is a secret in the channel airway then appear cough phlegm, with objective data client covering cough reduced, secretion reduced and clients





Already capable do cough effective in a way independent, client assessment with tuberculosis lungs that have problem cleaning airway is not effective need done implementation mentoring to cough effective with use application chest physiotherapy for excretion secret more optimal (Kassabry, 2023).

Based on the phenomenon above, researchers interested take title work write scientific with title " Foster Care Nursing Care for Patients with Disturbance System Respiratory Tract Infection in Pulmonary Tuberculosis at Vita Insani Hospital Pematangsiantar ”.

METHOD

The research used in this scientific paper is qualitative with a descriptive research type, with a case study approach. Qualitative research is an in-depth research method to understand phenomena, experiences, or human behavior holistically in their natural context, not through numbers, but through verbal descriptions (text, audio, video) to explore the meaning, perceptions, motivations, and reasons behind something, with the researcher as a key instrument that interacts directly (Daryaswanti, 2024). Descriptive research is conducted with the aim of describing or depicting facts about the population systematically and accurately (Nurazizah & Rantesigi, 2023)

A case study is a descriptive study that conducts intensive investigations of individuals, and or social units that are carried out in depth by finding all important variables about the development of the individual or social unit being studied (Sarin & Bhargavi, 2022). This research was conducted in the Cenderawasih Room of Vita Insani Hospital, Pematangsiantar. The research was conducted on April 2, 2026 to April 4, 2026. Research informants are a very central and fundamental element. Informants can be described as individuals or groups of people who are deliberately selected by researchers to be interviewed or invited to interact because they have unique and specific knowledge, experience and depth of understanding regarding the phenomena, problems, or social contexts being studied (Jaggi et al., 2018).

RESULT

This research conducted at Vita Insani Hospital Pematangsiantar which is located at Jalan Merdeka No. 329, Pahlawan Subdistrict East Siantar, Pematangsiantar City, North Sumatra 21132. Vita Insani Hospital Pematangsiantar is a private hospital class B which stand since August 14, 1982. Vita Insani Hospital Pematangsiantar give service health services supported by doctor specialists and sub- specialists, as well as supported with facility adequate medical including installation Emergency Emergency (ER) 24 hours, Outpatient Installation, Inpatient



Installation, Laboratory, Radiology, Polyclinic, Intensive Care Unit (ICU), Installation Medical, and Operating Room (Jang & Park, 2025). The research was conducted in the operating room. Bird of Paradise with problem patient tuberculosis lungs. Building on the 4th floor (Rozveh et al., 2023).

This research done through studies case with objective that is do care nursing care for patients with tuberculosis lungs in 1 patient in the room Vita Insani Hospital Bird of Paradise Pematangsiantar. Foster Care nursing care for patients done for 3 days treatment. Patient get implementation care nursing counted from April 2, 2026.

Table 1. Data analysis

Data	Etiology	Problem
DS: 1. Patient say cough phlegm that has ongoing quite long and difficult For emit phlegm, cough Keep going continuously felt especially at night day and time weather cold 2. When reviewed patient complain cough accompanied by difficult phlegm issued DO: 1. There is voice rhonchi in both roomy lungs 2. Patient looks cough Keep going continuous and difficult emit his phlegm BP: 130/85 mmHg Temperature : 37.1°C HR : 92 x / minute RR: 29 x / minute before installed O₂ 3 liters / minute	Reaction infection / inflammation and damage parenchyma lungs ↓ Increased sputum production ↓ Productive cough, cough bleeding, excessive sputum, or rhonchi dry ↓ Cleaning airway is not effective	Cleaning airway is not effective

RR: 27 x / minute after installed O ₂ 3 liters / minute SPO ₂ : 94 % after installed O ₂ 3 liters / minute		
DS : Patient sigh shortness of breath and chest tightness No comfortable on the chest DO : 1. Irregular breathing rhythm 2. There is breathing lobe nose 3. There is voice rhonchi in both roomy lungs 4. There is use muscle assist breathing 5. Patient looks hard to breathe 6. Patient looks O₂ 3 liters / minute installed 7. Patient looks given semi-Fowler position BP: 130/85 mmHg Temperature : 37.1°C HR : 92 x / minute RR: 29 x / minute before installed O₂ 3 liters / minute RR: 27 x / minute after installed O₂ 3 liters / minute SPO₂: 94 % after installed O₂ 3 liters / minute	Reaction infection / inflammation and damage parenchyma lungs ↓ Change fluid intrapleural ↓ Shortness of breath, use muscle help breathing, phase expiration prolonged, abnormal breathing pattern ↓ Breathing pattern is not effective	Breathing pattern is not effective
DS : Patient say body felt weak, easy tired, and activity disturbed Because tightness felt DO : 1. Patient looks weak	Reaction systemic ↓ Weakness ↓	Intolerance activity

2. Activity patient looks like it's being helped family 3. Strength muscle extremities right on decrease with scale 4 4. Patient looks experiencing partial care RR: 29 x / minute before installed O₂ 3 liters / minute RR: 27 x / minute after installed O₂ 3 liters / minute SPO₂ : 94 % after installed O₂ 3 liters / minute	Feel weak, dyspnea moment activity ↓ Intolerance activity	
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Research Discussion

Researchers do care nursing care for Mr. L with diagnosis nursing cleaning airway is not effective, breathing pattern is not effective, and intolerance activities. Care nursing held for 3 days, starting April 2, 2026 until April 4, 2026 in the Cenderawasih Room, Vita Insani Hospital Pematangsiantar. Researcher will discuss suitability between theory and results care nursing that has been performed on patients as following :

Assessment

Based on the results interviews and examinations The physical examination carried out on Mr. L obtained data that patient 62 years old with diagnosis medical tuberculosis lungs and patients come with complaint cough phlegm that has lasted 2 weeks and was difficult For emit phlegm. Patient say cough felt continuously especially at night day and time weather cold. In addition to coughing, the patient also complained of shortness of breath that causes patient feel No comfortable on the chest and difficult do activity like usually. Patient say body felt weak, easy feel tired, and activity daily become disturbed Because shortness of breath felt, the patient also said often night sweats day BP: 130/85 mmHg, Temperature : 37.1°C, HR: 92 x / minute, RR: 29 x / minute before O₂ installed 3 liters/ minute, RR: 27 x/ minute after O₂ installed 3 liters/ minute, SPO₂: 94% after O₂ 3 liters/ minute installed (Smeltzer, 2020).

Intervention nursing

Plan action nursing care provided to Mr. L, refers to the Standards Intervention Indonesian Nursing (SIKI) and Standards External Indonesian Nursing (SLKI). In the diagnosis

cleaning airway is not effective, expected output is cleaning increased airway clearance with intervention main in the form of exercise cough effective which includes identification ability cough, monitor for presence of sputum retention, monitor signs and symptoms respiratory tract, monitor fluid input and output, regulate semi-fowler position, put on a plastic sheet and bend over on your lap patient, dispose of the secretions in the sputum container, explain objectives and procedures cough effective, recommend taking a deep breath through nose for 4 seconds detained for 2 seconds Then take it out from mouth with lips washing for 8 seconds, recommend repeat take a deep breath up to 3 times, recommended cough strong direct after take a deep breath, collaboration giving mucolytic (Basri et al., 2022). Planning technique exercise cough effective This based on the results study Arahmi and Apriza (Konwar et al., 2022) stated in their research done intervention exercise cough effective.

Implementation nursing

Implementation nursing care carried out on diagnosis cleaning airway is not effective covering identify ability cough, monitor existence sputum retention, monitoring signs and symptoms infection respiratory tract, monitoring fluid input and output, regulating semi-fowler position, installing perlak and crooked in the lap patient, throw away the secret in the sputum container, explain objectives and procedures cough effective, recommend taking a deep breath through nose for 4 seconds, hold for 2 seconds, then issued from mouth with lips washing for 8 seconds, recommend repeat Deep breath up to 3 times, recommend cough with strong direct After the 3rd deep breath, collaboration giving ambroxol 30 mg and Ventolin 2.5 mg. This action in harmony with study Arahmi and Apriza (2025), in their research done action monitor breathing pattern, monitoring additional breath sounds, monitor sputum, maintain patent airway, semi-Fowler position, giving drink warm, giving intake fluid, teaching technique cough effective.

Implementation nursing care carried out on breathing patterns is not effective covering monitor frequency, depth, and pattern of breathing, monitoring additional breath sounds, monitor ability cough effective, monitoring amount, color, and viscosity of sputum, monitor signs obstruction, positioning semi-Fowler's patient, maintaining patent airway, providing exercise cough effective, providing sufficient fluids For help thinning secretions, teaching sputum removal techniques, educating avoid exacerbating factors breathing such as cigarette smoke and dust, collaboration giving oxygen. This is supported by research Saputri, Saifudin, and Susanti (Mardhiyah et al., 2023) in their research done action monitor frequency, depth, and pattern of breathing, monitoring additional breath sounds, monitor ability cough effective,



monitoring amount, color, and viscosity of sputum, monitor signs obstruction, positioning semi-Fowler's patient, maintaining patent airway, collaboration giving oxygen (Erawan & Basar, 2023)

Implementation nursing care carried out on intolerance activity covering monitor fatigue physical and emotional, monitoring sleep patterns and hours, providing environment safe and low stimulus, providing activity soothing distraction, encouraging bed rest, recommend do activity gradually. This is supported by research by Syah (2025) and Afandi and Nurman (2024) in their research done action monitor fatigue physical and emotional, monitoring sleep patterns and hours, providing environment safe and low stimulus, providing activity soothing distraction, encouraging bed rest, recommend do activity gradually.

Evaluation nursing

Evaluation nursing done in a way periodically by researchers from day First until day third (02–04 April 2026) using method SOAP approach in the Cenderawasih Room of Vita Insani Hospital Pematangsiantar with results as following (Halter, 2018). This is supported by research Syah (2025) and Afandi and Nurman (Nomura et al., 2018) stated that that problem nursing intolerance activity after done action nursing complaint tired and weak reduced and can do activity in a way independent so that intervention stopped

CONCLUSION

Based on care nursing that has been carried out on Mr. L with disturbance system breathing in tuberculosis lungs at Vita Insani Hospital Pematangsiantar during three day care, obtained results that at this stage the study found to Mr. L is patient say cough phlegm and difficult to expel, shortness of breath RR 27 x/ minute, SPO2 94%, activity assisted by the family. Based on the results assessment of Mr. L is upheld three diagnosis nursing, namely cleaning airway is not effective relate with increased sputum production, irregular breathing pattern effective relate with obstacle respiratory effort, and intolerance activity relate with weakness physique.

Plan action nursing or intervention nursing arranged in a way systematically based on SIKI and SLKI guidelines with do exercise cough effective management airway, as well as management energy. Implementation nursing care provided to Mr. L for 3 days start April 2 to April 4 according to with intervention planned nursing care. The evaluation results obtained for Mr. L were problem nursing resolved is breathing pattern is not effective and intolerance activities. While problem solved part is cleaning airway is not effective.



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