International Journal of Public Health Excellence (IJPHE)
Vol. 4, Issue 1, June-December 2024, pp. 303~321
Journal Homepage: https://ejournal.ipinternasional.com/index.php/ijphe
ISSN: 2809-9826, DOI: 10.55299/ijphe.v4i1.1196

The Characteristics of Patients at the Pulmonology Clinic of Dr. RM Djoelham Regional Hospital Binjai for the Period of January 2023 - June 2024

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Article Info

Article history:
Received October 17, 2024
Revised November 02, 2024
Accepted November 30, 2024

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ABSTRACT

Healthy lungs are vital in sustaining respiratory function and oxygen balance in the human body. Diseases in the lungs can cause decreased function in the lungs and result in various health problems and disruption of a person's quality of life therefore we also require certain lung diseases that often occur in the community. Diseases of the lungs have diverse causes, treatments, and measures of prevention depending on the diagnosis. In this study, various lung disorders that are regularly experienced in the community are discussed, which we need to know Method: retrospective descriptive research with a cross-sectional design with the means of data collection, namely secondary data from new patient visits for treatment and have been diagnosed with lung disease and recorded in the Medical Record of the Pulmonology Polyclinic of Dr. RM Djoelham General Hospital from January 2023 to June 2024. Results: the number of research samples was 446 patients where the prevalence of patients with the most diagnoses was pulmonary tuberculosis (TB) as many as 237 patients (53.1%), with the most age group of 51-60 years as many as 93 patients (20.9%), the most male sex as many as 266 patients (59.6%) and the most are jobs as non-ASN/private as many as 193 patients (43.3%) and the most education is high school graduates / equivalent as many as 237 patients (53.1%). Conclusion: If there is a disturbance in the respiratory system, immediately examine yourself as early as possible to get best treatment and avoid complications that might cause death.

Keywords: *Characteristics, Patient, Lung Disease*

1. INTRODUCTION

The lungs are essential organs in the human respiratory system, facilitating the intake of oxygen (O2) from the air into the bloodstream and the expulsion of carbon dioxide (CO2) from the blood, so enabling the exchange of these gases during respiration. Lung disorders or diseases can compromise lung function and result in numerous health complications. Lung diseases may arise from inhaling polluted air, personal habits, genetic factors, and other causes. Lung illnesses exhibit various etiologies and preventive measures contingent upon their classification. Data about the incidence and prevalence of lung disease indicates that Chronic Obstructive Pulmonary Disease (COPD) resulted in over 3 million fatalities in 2012, accounting for 6% of global mortality that year, according to the World Health Organization (WHO). In 2020, the prevalence of COPD is projected to position it as the fifth most common disease affecting the global population. The Global Initiative for Chronic Obstructive Lung Disease (GOLD) report (2020) indicates that in 2010, approximately

384 million individuals, or 11.7% of the global population, were afflicted with COPD, resulting in an annual mortality rate of 3 million [8]. In 2011, COPD was identified as the third leading cause of death in the United States, and projections suggest that by 2030, the mortality rate from COPD will escalate to 4.5 million annually [8]. COPD is the primary cause of chronic morbidity and is expected to rank seventh in the global disease burden [19]. Additionally, pneumonia is the eighth leading cause of death in the United States. The incidence and prevalence of pneumonia in Indonesia in 2013, according to the Basic Health Research, were 1.8% and 4.5%, respectively. In 2014, the Department of Pulmonology and Respiratory Medicine at Persahabatan General Hospital recorded 87 patients hospitalized for community pneumonia, which rose to 143 patients in 2015.

Parapneumonic effusion lung disease manifests in 20-40% of pneumonia patients, with approximately 60,000 cases of empyema arising from 1 million hospitalized pneumonia patients in the United States [39]. In Indonesia, the 2018 Basic Health Research (Riskesdas) indicated that pneumonia prevalence among all age groups was 2.21%, with specific rates of 2.5% for ages 44-64, 3.0% for ages 64-74, and 2.9% for individuals aged 75 and older [17]. Additionally, the incidence of hemoptysis in lung clinics varies between 10% and 15%, with tuberculosis accounting for 20% of massive hemoptysis cases, bronchiectasis at 45%, and tumors at 10% [5]. The prevalence of bronchiectasis lung illness in the United States is rising annually from 2000 to 2007, with an increase of 8.74% observed in those aged 80-84 years, predominantly affecting women and individuals of Asian descent [13]. Tuberculosis (TB) lung disease continues to be a global health issue and is the second biggest cause of mortality from infectious diseases globally, following Human Immunodeficiency Virus (HIV). The World Health Organization data indicates that the Southeast Asian population constitutes 26% of the global population, while accounting for 43% of pulmonary tuberculosis cases. As of 2023, around 10.6 million individuals are afflicted with tuberculosis globally, resulting in an expected 1.3 million fatalities [5]. Pulmonary tuberculosis affects approximately one-third of the global human population. According to the 2018 WHO report, there were approximately 10 million cases of tuberculosis in 2017, with Indonesia accounting for 8% of worldwide tuberculosis infections.

The Ministry of Health (2021) announced that Indonesia recorded 351,936 cases of tuberculosis in 2020. According to data from the South Sulawesi Health Office (2020), Makassar city has the greatest prevalence of pulmonary tuberculosis, with 5,421 patients, followed by Gowa Regency with 1,810 patients, and Bone Regency with 1,288 patients. Globally, the incidence of children tuberculosis (TB) amounts to 1 million cases, with Indonesia ranked as the third highest TB-affected country, following India and China. Annually, children face the risk of tuberculosis infection from interactions with adults who are BTA-positive [38]. In North Sumatra, data from 2017 across 33 districts and cities revealed that Medan reported the highest number of new tuberculosis cases at 5,206, followed by Deli Serdang with 2,090 cases, Langkat with 850 cases, and Pakpak with the lowest at 77 cases [23].

Data from the Indonesian Ministry of Health's Infodatin (2019) indicates that there are 10million cases of tuberculosis globally, resulting in 1.4 million fatalities. In 2019, Indonesia recorded 568,987 new cases of tuberculosis (TB), with 12,469 fatalities attributed to the disease in 2021 [33]. The 2020 annual Tuberculosis Report indicated that TB ranks among the top ten global causes of death, with Indonesia reporting 843,000 cases and a treatment success rate of approximately 85%, while 32% of cases remain unreported [3]. The WHO established the 'End Tuberculosis' plan, integral to the Sustainable Development Goals, aiming to eradicate the tuberculosis epidemic globally (Ministry of Health, n.d.). In Indonesia in 2014, lung cancer was the leading cause of cancer mortality among males, accounting for 21.8% of 103,100 deaths, followed by liver cancer at 12.3% and

colorectal cancer at 10.2%. In females, lung cancer ranked third, representing 9.1% of 92,200 deaths, after breast cancer at 21.4% and cervical cancer at 10.3% [10].

Lung diseases can consequently impact the airways, alveoli, lung interstitium, blood vessels, pleura, and chest wall. Understanding the types of lung diseases, their characteristics, causes, and prevention is crucial for maintaining lung health and taking appropriate measures for prevention and treatment based on diagnosis. The following are significant types of lung illnesses commonly encountered in the community:

1. Community-acquired pneumonia is an acute inflammation of the lung parenchyma induced by microorganisms, including bacteria (e.g., Streptococcus pneumoniae), viruses, fungi (e.g., Pneumocystis jirovecii), parasites, and protozoa, excluding Mycobacterium tuberculosis. This condition results in the inflammation and swelling of the alveoli, often termed "wet lung" due to the accumulation of fluid or pus. It is classified as an acute lower airway infection. Pneumonia can impact anybody; however, children, the elderly, and persons with compromised immune systems are particularly susceptible to infection [30]. Pneumonia is an acute lower respiratory tract infection affecting the lung parenchyma, occurring in approximately 15-20% of cases [30]. It is a primary cause of hospitalization and mortality globally, and patients with community-acquired pneumonia in hospitals significantly strain healthcare systems worldwide [26]. Methods for diagnosing this disease: 1). Anamnesis reveals a cough with purulent, viscous sputum, frequently yellow or green, followed with high fever, chills, night sweats, influenza, and sore throat. Dyspnea disrupts daily activities, accompanied by fatigue and weakness. 2) Physical examination revealed: body temperature exceeding 38°C, fever, elevated respiratory rate, chest pain, signs of consolidation (swelling or hardening of normally soft tissue), bronchial breath sounds, and rales. 3) Diagnostic criteria are corroborated by supporting examinations alongside clinical symptoms, including cough, purulent sputum, and body temperature exceeding 38°C. Fever, thoracic discomfort, constriction. Indicators of consolidation (diminished breath sounds, heightened fremitus), bronchial breath sounds, and rhonchi, with leukocyte counts exceeding 10,000 or below 4,500 [2].

Two. Pulmonary tuberculosis (TB) is an infection of lung tissue caused by Mycobacterium tuberculosis. A tuberculosis (TB) patient is an individual exhibiting complaints or clinical manifestations of TB, specifically a cough persisting for two weeks or longer, potentially accompanied by additional symptoms such as hemoptysis, dyspnea, fatigue, thoracic pain, anorexia, weight loss, malaise, nocturnal diaphoresis without exertion, and fever lasting over one month. If the patient is HIV +, coughing is not typically a symptom of tuberculosis, hence it does not necessarily need to persist for two weeks or longer. Bacteriologically confirmed tuberculosis patients are those who have tested positive through bacteriological examinations, such as sputum, bodily fluids, and tissues, via direct microscopic inspection, TB Rapid Molecular Test (TCM), or culture. This category of patient is: I. Patients with positive BTA for pulmonary tuberculosis. Section II. Patients with culture-positive pulmonary tuberculosis caused by Mycobacterium tuberculosis (MTB) III. Patients with pulmonary tuberculosis exhibiting positive results on the MTB rapid test. Section IV. Bacteriologically verified extrapulmonary tuberculosis patients, identified using bacterial tissue analysis, culture, or quick testing of afflicted tissue samples. Childhood tuberculosis identified using bacteriological analysis [2].

Additionally, TB patients identified through clinical diagnosis are those who do not fulfill the requirements for bacteriological confirmation but are classified as active TB patients by a physician and thereafter receive TB therapy, as follows: I. BTA-negative pulmonary tuberculosis patients, however thoracic imaging corroborates tuberculosis. II. Patients with BTA-negative pulmonary tuberculosis who exhibit no clinical improvement following the administration of non-OAT

antibiotics and possess risk factors for tuberculosis. III. Patients with clinically and laboratory confirmed extrapulmonary tuberculosis and histopathological findings lacking bacteriological results. Section IV. Paediatric tuberculosis detected using the scoring system. Clinically diagnosed tuberculosis patients subsequently confirmed bacteriologically should be classed as bacteriologically confirmed tuberculosis patients [2]. Methods for diagnosing this condition include: 1). Anamnesis: presenting with the primary symptom of productive cough persisting for over two weeks, accompanied by additional symptoms including hemoptysis, dyspnea, asthenia, anorexia, involuntary weight loss, malaise, nocturnal hyperhidrosis without exertion, subfebrile temperature for over one month, and thoracic pain.

These symptoms may not manifest typically in patients with HIV co-infection. Furthermore, it is essential to consider additional histories to identify risk factors, including close contact with tuberculosis patients, residence in slum or densely populated areas, and employment in situations prone to exposure to pulmonary infections, such as healthcare professionals or tuberculosis advocates. 2). Physical examination: Depending on the severity of structural lung abnormalities, there are typically no, or very few, abnormalities detected in the early stages of the disease. Lung abnormalities are typically found in the superior lobe, particularly in the apex and posterior segments (S1 and S2), as well as at the apex of the inferior lobe (S6). Bronchial breath sounds, amphoric noises, diminished breath sounds, moist rales, indicators of pulmonary retraction, diaphragm, and mediastinum. Supporting examinations include radiological assessments, thoracic imaging, bacteriological tests (BTA, Gene-Xpert, or culture), histopathological analysis in specific cases, prior tuberculosis treatment history, and HIV status if applicable [2]. Tuberculosis relapse refers to a patient who has previously undergone tuberculosis treatment, been declared cured or completed treatment, and is subsequently re-diagnosed with a positive BTA. Tuberculosis recurrence is characterized by a new occurrence of the disease following recovery from a prior episode. This may arise from either endogenous or external reactivation of reinfection [12].

3. Bronchial asthma is a heterogeneous condition characterized by chronic airway inflammation, manifesting as symptoms such as wheezing, chest tightness, heaviness, and coughing, which fluctuate in frequency and severity, accompanied by expiratory airflow limitation. This form of asthma, occurring in the lungs, is a chronic respiratory disorder resulting from inflammation that narrows the air passages and leads to wheezing or swelling, along with excessive mucus production, thereby impairing lung function, with an unknown etiology. Diagnostic establishment methods: 1). Anamnesis: several symptoms are present (wheezing, tightness, coughing, and chest heaviness), particularly in adults. Symptoms typically exacerbate during the night or early morning and fluctuate based on timing and severity. This condition may be precipitated by viral infections (influenza), physical exertion, allergen exposure, climatic variations, emotional states, and irritants such as tobacco smoke or potent odors. 2). Physical examination of the lungs: may appear normal; extended expiration; wheeze may be audible during expiration alone or absent (in cases of severe asthma). 3). Examination findings: normal/hyperinflated chest imaging, diminished peak expiratory flow (APE) (raised by >20% post-bronchodilator), spirometry: VEP1/KVP < 75% (with bronchodilator rise ≥ 12% and 200 ml). Diagnostic criteria are based on primary symptoms: dyspnea, cough, chest tightness, and episodic wheezing, along with variable and ancillary symptoms such as rhinitis or other atopic conditions. Physical examination may appear normal until obstruction signs manifest, including prolonged expiration, wheezing, hyperinflation (characterized by a widened rib cage, convex chest, hyperresonance, and diminished breath sounds) [2].

4. Acute bronchitis is an inflammation of the trachea and bronchial tubes, resulting from an airway infection, characterized by a cough that may be dry or productive, persisting for little longer than three weeks. Diagnostic procedures include: 1). Anamnesis reveals a cough (with sputum or

phlegm) persisting for no longer than 3 weeks, characterized by clear, white, yellowish, or greenish coloration, potentially accompanied by hemoptysis. Additionally, shortness of breath and chest heaviness may occur (if the airways are obstructed), frequently accompanied by wheezing, particularly post-coughing, and typically associated with mild fever. Physical examination may reveal indications of hypoxia (airway distress) and symptoms of upper respiratory tract infection (such as nasal congestion or pharyngeal discomfort). Lung auscultation reveals obstructive symptoms, such rales or wheezing. 3). Conducting an examination, specifically sputum analysis with direct Gram staining and culture (to identify bacterial infection), together with thoracic imaging (acute bronchitis presents with an increased lung pattern). Spirometry and non-routine lung function testing are conducted. This assessment is typically conducted in cases of recurrent acute bronchitis in patients with underlying obstructive problems [2].

5. Chest wall tumors encompass both benign and malignant neoplasms of the thoracic region. Diagnosis involves: 1) Anamnesis: respiratory symptoms, including a chest wall mass, thoracic pain, persistent cough, hemoptysis, dyspnea, and hoarseness. Systemic symptoms: weight loss, lethargy, reduced appetite, fever, paraneoplastic syndrome. Complaints arising from metastasis or tumor dissemination, include cancer-related pain, bone discomfort, superior vena cava syndrome, headache, paralysis, and the existence of patient risk factors. 2). Physical examination: Inspection revealed thoracic asymmetry, a chest wall mass, and venectasias/damage marks. Palpation: fremitus may be diminished, absent, or increased. Percussion: may diminish. Auscultation reveals the presence of additional or absent breath sounds. General status examination reveals abnormalities based on the site of metastasis. The criteria for a conclusive diagnosis are established through ancillary examinations: anatomical pathology/histopathology, staging from physical examination, radiological imaging, and/or surgical findings [2].

Chronic obstructive pulmonary disease (COPD) is a preventable and treatable pulmonary condition characterized by progressive airflow restriction linked to an augmented chronic inflammatory response of the airways and lungs to noxious gases or particles. This disease progresses over an extended duration, characterized by persistent airflow obstruction from the lungs due to inflammation and mucus accumulation, leading to respiratory difficulties and resulting in irreversible damage to the lung airways. It typically manifests gradually, causing airway narrowing and is chronic. The condition is marked by a persistent cough and intermittent shortness of breath, particularly during physical exertion [2]. COPD is characterized as a heterogeneous pulmonary disorder marked by chronic respiratory symptoms, including dyspnea, cough, and sputum production, stemming from abnormalities or inflammation of the airways or bronchial walls (bronchitis, bronchiolitis) and/or disorders or inflammation of the alveoli (emphysema), leading to persistent and often progressive airflow obstruction, which may result in a conical chest configuration and, in cases of significant fluid accumulation, pleural effusion. The definition of COPD has evolved, indicating that it is not solely attributable to cigarette smoke inhalation but also to other factors, including biomass exposure, infections like tuberculosis, and asthma, with the manifestation varying according to the cause. Traditional COPD is primarily linked to smoking and predominantly affects women globally [4].

The features of COPD arise from a combination of minor airway blockage and parenchymal injury. The extent of minor airway blockage and parenchymal damage varies significantly; however, these two phenomena do not necessarily occur concurrently and may progress independently over time. Chronic inflammation, which causes structural alterations that narrow the small airway lumen, and lung parenchymal destruction, which results in the loss of alveolar attachment to the small airways and diminished lung elasticity, lead to the inability of the airway to remain patent during expiration. The impairment of the small airways will lead to airflow obstruction and diminished mucociliary clearance, which are hallmark features of COPD. COPD exhibits significant systemic

effects indicative of various comorbid conditions, which are not solely attributable to the extent of airflow obstruction but are also affected by the severity of symptoms (particularly dyspnea and diminished exercise tolerance), exacerbations, systemic repercussions, and additional comorbid manifestations. Currently, emphysema and chronic bronchitis are excluded from the definition of COPD because emphysema is a pathological diagnosis characterized by the destruction of alveolar surfaces, the site of gas exchange, whereas such destruction is merely one of numerous structural abnormalities present in COPD patients. Chronic bronchitis is a clinical and epidemiological diagnostic defined by persistent cough and sputum production for a minimum of three months over two consecutive years, occurring in a limited subset of patients and not consistently indicating airflow obstruction. Chronic respiratory issues may commence prior to the onset of airflow obstruction. They are frequently observed in patients with normal spirometry outcomes. A significant proportion of smokers exhibit structural problems, including emphysema, airway wall thickening, and gas trapping, despite the absence of airflow obstruction [4].

Methods for diagnosing COPD include: 1). Anamnesis: At over 40 years of age, the patient experiences persistent shortness of breath that progressively worsens, particularly during physical exertion. Symptoms include a chronic cough with sputum production, potentially accompanied by intermittent wheezing and unproductive cough. Relevant history includes exposure to toxic particles and gases (notably cigarette smoke and biomass fuel), a family history of COPD, and childhood conditions such as low birth weight and recurrent airway infections. Physical examination of the lungs reveals symptoms of hyperinflation and respiratory insufficiency, with aberrant auscultation findings including wheezing, crackles, clicks, and belching. Diagnostic assessment: spirometry, indicating persistent airflow limitation with a VEP1/KVP ratio <0.70 following bronchodilator administration [2].

Seven. Pleural effusion refers to the accumulation of fluid in the pleural cavity, the space between the lungs and the chest wall, which functions to reduce friction on the lungs and to lubricate the pleura. Diagnostic approach: 1) Anamnesis: dyspnea, cough, and sharp, stabbing chest pain that intensifies with deep inhalation or coughing. A cough may be present with phlegm or blood in the presence of pulmonary diseases, however a cough without phlegm is also possible. Increased fluid in the pleural cavity results in shortness of breath and a sensation of constriction, akin to heaviness in the chest. Patients exhibit increased comfort when resting on their side adjacent to the lesion, accompanied with hypoxemia and mild pyrexia. Physical examination of the lung: Inspection reveals diminished respiratory movement in the affected hemithorax; in the presence of significant pleural effusion, the chest exhibits a convex shape and the intercostal spaces are expanded. Palpation reveals diminished vocal fremitus on the afflicted side. The trachea and mediastinum may be displaced towards the unaffected side. Percussion: diminished at the impacted region. Auscultation reveals diminished to nonexistent breath sounds on the afflicted side. Pleural friction rub is audible when fluid accumulation is limited [2].

8. Tuberculous pleurisy is an inflammation of the pleura, comprising both the parietal and visceral layers, induced by Mycobacterium tuberculosis, resulting in fluid accumulation within the pleural cavity. Diagnosis can be established through: 1) Anamnesis: the patient experiences acute, stabbing chest pain that may radiate to the shoulders and back, exacerbated by deep breathing or coughing. A cough may occur without phlegm; however, it can also present with phlegm or blood when associated with pulmonary diseases. Shortness of breath is observed; increased fluid in the pleural cavity correlates with heightened tightness. Dyspnea is experienced as a constriction in the thoracic region. The patient exhibits increased comfort in a sleeping position inclined towards the lesion and presents with a mild fever. Physical examination of the lung reveals: Inspection: respiratory movements are observable on the left side of the affected hemithorax; in cases of significant pleural

effusion, the chest appears convex and the intercostal spaces are widened. Palpation reveals diminished vocal fremitus on the afflicted side. The trachea and mediastinum may be displaced towards the unaffected side. Percussion: detected faintly in the afflicted region. Auscultation reveals diminished to nonexistent breath sounds on the afflicted side. Pleural friction rub is audible when fluid accumulation is modest. 3). Diagnostic support includes bacteriological analysis of pleural fluid (identifying tuberculosis bacilli in pleural fluid and tissue is particularly challenging), radiological assessment (which aids in diagnosis), histopathological evaluation of pleural biopsy (pleuroscopy reveals a pattern of tuberculosis granuloma nodules uniformly distributed in the pleura, referred to as sagolike nodules), Mantoux test/tuberculin test, Polymerase Chain Reaction (PCR), Adenosine Deaminase (ADA), and/or Interferon Gamma (IFN-γ) testing [2].

9. Pneumothorax: there is free air accumulated in the pleural cavity, either from chest traumaor a rupture of the lung parenchyma, which may occur spontaneously or as a consequence of an underlying condition. In women, it may arise from endometriosis, specifically catamenial pneumothorax, as well as from iatrogenic factors such as trans thoracic needle aspiration (TTNA), central venous pressure (CVP), pleural puncture, pleural biopsy, and bronchoscopy, among others. Methods for establishing a diagnosis include: 1). Patient history: dyspnea, cough, and thoracic pain. 2). Physical examination of the lung: Inspection reveals asymmetry, both static and dynamic, along with a wider rib cage. Palpation reveals an expanded rib cage and diminished vocal fremitus. Percussion indicates hyperresonance. Auscultation: vesicular sounds diminished, Rh -/- wh -/- [2].

10. Bronchiectasis is a chronic and persistent abnormal dilation of the bronchi, characterized by bronchial wall destruction resulting from congenital or acquired conditions, such as chronic airway infections [13];[2]. The diagnostic process includes: 1) Anamnesis revealing respiratory symptoms: chronic cough with sputum production, hemoptysis, dyspnea, and variable chest pain, ranging from asymptomatic to severe, depending on the extent of the lesions. Occasionally, it is identified during a medical examination. The initial cough results from bronchial discomfort, followed by coughing to evacuate mucus. Systemic manifestations encompass persistent fever. 2). Physical examination: lung assessment may reveal no abnormalities; nevertheless, in severe cases, digital clubbing may be observed. Auscultation reveals wet rales, with wheezing present solely in cases of bronchial blockage. 3). Diagnostic evaluation: thoracic imaging reveals rings with or without fluid levels, resembling a wasp's nest (honeycomb) in the afflicted region, alongside bronchography and/or High Resolution CT (HRCT). The diagnostic criteria are predicated on a history of recurrent and productive chronic cough, recurrent fever, hemoptysis, and bronchography and/or High Resolution CT (HRCT) [2].

11. Haemoptysis, or the expectoration of blood from the lower respiratory tract, may present as blood streaks in sputum or as the expulsion of significant volumes of blood without sputum. Massive hemoptysis is a potentially fatal cough that expels blood. Massive haemoptysis is defined as the expectoration of blood over 100 ml per hour or more than 600 ml within 24 hours [2]. The anamnesis reveals the quantity and duration of hemoptysis. Productive cough with purulent expectoration. Age. History of tobacco use. Prior history of hemoptysis. Medical history of pulmonary, cardiac, or renal illness. Manifestations of lung illness and indicators of infection. Family history of hemoptysis and gastrointestinal hemorrhage. Previous treatment history. History of OAT. Diagnostic approach: 1). Anamnesis: hemoptysis, which may occur with or without sputum. 2). During physical examination: assess vital signs and examine the upper airway to identify the cause of bleeding (nasal cavity, oral cavity, posterior pharynx, and larynx). Lung examination reveals extra breath sounds maybe resulting from airway constriction due to thrombi [2]. 3). Conducting examinations such as sputum analysis to ascertain potential causes. A. Laboratory evaluations including total blood count, hematocrit to assess the chronicity of hemorrhage, blood gas analysis,

liver function tests, and renal function tests to exclude the potentiality of pulmonary-renal syndromes such as Goodpasture's syndrome or granulomatosis with polyangiitis (Wegener's).

B. Radiological assessment: a. Chest X-ray for malignancy, infections (tuberculosis, aspergilloma), and heart problems including mitral stenosis. b. High-resolution computed tomography (HRCT) of the lungs for the diagnosis of bronchiectasis and aspergilloma. Bronchoscopy serves a diagnostic purpose to identify the source of bleeding and visually assess endobronchial disease processes that may induce bleeding, while also possessing therapeutic capabilities. Flexible bronchoscopy is conducted in individuals with normal chest X-rays to rule out endobronchial cancers that are not detectable on X-rays. C. Additional examinations: including haemostatic function assessment in patients suspected of having blood clotting problems or other haematological anomalies. The dsDNA or ANA test is conducted on patients suspected of having systemic lupus erythematosus (SLE). Transthoracic echocardiography to identify heart anomalies. Bronchial and pulmonary arteriography may be conducted if alternative procedures fail to identify the cause of hemorrhage. Arteriography may potentially serve as a therapeutic instrument. The diagnostic criteria include: initial anamnesis, physical examination, sputum analysis, chest imaging, HRCT (High-Resolution Computed Tomography), and bronchoscopy [2].

Various diagnostic examinations conducted in the pulmonology department include: 1. Radiological assessment of PA thoracic images. 2. Examination of sputum/purulent sputum using direct Gram staining and culture (BTA or Gene-Xpert or culture). 3. Laboratory assessment of arterial blood gas analysis and routine hematology: eosinophils and blood leukocytes. 4. Bronchography and/or High-Resolution CT (HRCT) imaging to detect pulmonary alterations not evident on thoracic radiographs. 5. Bacteriological analysis of pleural fluid or histopathological evaluation of pleural biopsy. Mantoux test, often known as the tuberculin test, is utilized to identify tuberculosis in an individual. Examination of Polymerase Chain Reaction (PCR), Adenosine Deaminase (ADA), and/or Interferon Gamma (IFN-γ) 8. Pleuroscopic evaluation to identify anomalies in the pleural cavity. Assessment of peak expiratory flow (PEF) to evaluate airflow from the lungs. 10. Spirometry assessment to evaluate lung function in terms of inhalation and exhalation capacity.

11. Body plethysmography assessment to determine the lung capacity or the volume of air the body can accommodate. CT examination with ventilation-perfusion scanning to assess embolism or perfusion of pulmonary blood vessels and ventilation of both lungs. Anatomical pathology and biopsy assessment, encompassing both cytology and histopathology, together with staging derived from the analysis of radiographic imaging and/or bronchoscopy for seeing the lungs and airways; throat swab analysis; and blood chemistry evaluation. ECG (Electrocardiography), 17. Anti-HIV, 18. HbSAg, 19. Comprehensive fecal examination, comprehensive peripheral blood analysis, 20. Electrolytes, blood glucose level, diffusion capacity (DLCO), BAL fluid analysis (cellular and mineral composition), six-minute walk test, cardiopulmonary exercise test (CPET), bronchial provocation test, immunological assessment. 28. Quantification of serum IgG, IgM, or IgA antibodies 29. Laboratory-specific antigen inhalation assay 30. Microbiological analysis 31. and others [2]

The treatments for lung illness administered to patients are contingent upon the patient's diagnosis, specifically: A. Pharmaceutical: Control drugs, lozenges, inhaled bronchodilators, intravenous bronchodilators, systemic corticosteroids, anti-inflammatory/inhaled corticosteroids, antipyretics, antibiotics, mucolytics, expectorants, antifungals, hypertonic NaCl inhalation, immunomodulators, antivirals, and others. Non-pharmacological interventions include isolation, exercise, allergen and air pollution avoidance, smoking cessation, allergen immunotherapy, oxygen therapy, vaccination, mechanical ventilation, proper nutrition, rehabilitation through physical activity and breathing exercises, weight reduction, continuous positive airway pressure (CPAP), chest

physiotherapy, increased fluid intake to facilitate secretion mobilization, respiratory bronchoscopy, postural drainage, percutaneous drainage, chest tube insertion, open drainage via thoracotomy and decortication, surgical procedures, respiratory care, physiotherapy, pain management, nutrition, supportive and symptomatic therapy, and additional measures [2]

Numerous initiatives can be undertaken in the realm of education, specifically: 1. Thoroughly cleanse hands, particularly after urine, defecation, and other activities, using soap for a minimum of 20 seconds, followed by rinsing under running water. Refrain from contacting the face, mouth, and nose with hands after handling materials that may harbor bacteria. Exhibit proper manners when coughing by covering the mouth and nose with a tissue, handkerchief, or the sleeve. Dispose of used tissues or handkerchiefs in a sealed receptacle. Don a mask when unwell to avert transmission to others and safeguard the body from pollutants, dust, viruses, or bacteria. Utilize a mask composed of a minimum of three layers of material and replace it every four hours, as its efficacy is approximately limited to this duration. Vaccination fortifies the immune system, generates antibodies against the virus, enhances immunological response, and diminishes the likelihood of severe illness.

Facilitate the enhancement of the patient's capacity to perform daily tasks following their lifestyle. 6. Encourage the patient to refrain from smoking and other inhalable irritants, regulate environmental temperature and humidity, maintain proper nutrition, and ensure appropriate hydration. Recognize symptoms of pharmacological side effects; for instance, bronchodilators may induce palpitations, weakness, tremors, and diaphoresis. Engaging in a series of diagnoses and treatments, including chest physiotherapy, management of comorbidities, and scheduled follow-ups at the pulmonary clinic. Consumption of nutritious food and sufficient drinks, proper relaxation and sleep, and stress avoidance. Proper administration of pharmaceuticals, identification of exacerbation symptoms, and management. Engagement in physical activity and the execution of daily tasks by one's condition. Encouraging patients to refrain from smoking, eliminate other inhalable irritants, and regulate environmental temperature and humidity. Recognizing symptoms of pharmacological side effects, such as those from bronchodilators, may include palpitations, weakness, trembling, and cold sweat. Awareness of transmissible lung diseases. Maintain a clean and healthy lifestyle while avoiding known triggers, and seek counseling and HIV testing if necessary [2].

The prognosis for lung disease is contingent upon the individual's illness status, specifically regarding survival and recovery against mortality, the degree of lung function impairment, and the presence or absence of comorbidities associated with the lung disease [2]. This study aimed to ascertain the diagnosis of lung disease in new patients seeking treatment at the Pulmonology Polyclinic of Dr. RM Djoelham Binjai Hospital from January 2023 to June 2024, categorizing patient samples based on the type of lung disease diagnosis, gender, age, occupation, and education level.

2. METHODS

This research is a retrospective descriptive analysis of new patients seeking treatment at the Pulmonology Polyclinic, diagnosed with lung disease by a pulmonary expert, over the period from January 2023 to June 2024. The data collection involved secondary data sourced from medical records at the Pulmonology Polyclinic of Dr. RM Djoelham Binjai Hospital. Patient samples categorized by the parameters of lung disease diagnosis, gender, age, occupation, and education level.

3. RESULTS AND DISCUSSION

Results

Sample Distribution Based on Lung Disease Diagnosis

Table 1. Frequency Distribution Based on Diagnosis of Lung Disease

No	Diagnosis	N	%
1	Bronchial Asthma	24	5.4
2	COPD	27	6.1
3	Pulmonary TB	237	53.1
4	Bronchitis	93	20.9
5	Pneumonia	17	3.8
6	Emphysema	5	35.5
7	Tumor	8	1.8
8	Pleural Effusion	21	4.7
9	Hemoptysis	14	3.1
Total		446	100

Based on table 1 above, the results showed that the incidence of pulmonary disease based on diagnosis in the period January 2023 to June 2024 from a total of 446 patients, the most was pulmonary tuberculosis as many as 237 patients (53.1%).

Table 2 Frequency Distribution of Lung Disease Based on Gender

No	Year	Male N	Male %	Female N	Female %	Total
1	2023	170	63.9	96	36.1	285
2	June-2024	115	63.9	65	36.1	161
Total		266	100	180	100	446

Based on table 2 above, the results showed that the incidence of lung disease based on gender in the period January 2023 - June 2024 from 446 patients showed the most with male gender as many as 266 patients (59.6%).

Table 3. Frequency Distribution of Lung Disease by Age Group

No	Age Group (Years)	N	%
1	0-10	0	0.0
2	11-20	29	6.5
3	21-30	75	16.8
4	31-40	71	15.9
5	41-50	72	16.1
6	51-60	93	20.9
7	61-70	83	18.6
8	>70	23	5.2
Total		446	100

Based on table 3 above, the results showed that the incidence of lung disease based on age groups in the period January 2023 - June 2024 out of 446 patients the most occurred in the age group 51-60 years as many as 93 patients (20.9%).

Table 4 Frequency Distribution of Lung Disease Based on Education

No	Education	N	%
1	No education	0	0.0
2	Completed Primary School	64	14.3
3	Completed Middle School	105	23.6
4	Completed High School	237	53.1
5	University Student	1	0.2
6	Bachelor's Degree	39	8.8
7	Did not attend school	0	0.0
Total		446	100

Based on table 4 above, the results showed that the incidence of lung disease based on education for the period January 2023 to June 2024 from 446 patients showed that the most were high school / equivalent education as many as 237 patients (53.1%).

Table 5. Frequency Distribution of Lung Disease Based on Occupation

No	Job	N	%
1	Unemployed	21	4.7
2	Laborer	20	4.5
3	Farmer	37	8.3
4	Government Employee (ASN)	35	7.9
5	Non-Government Employee/Private	193	43.3
6	Housewife	119	26.6
7	Not working	21	4.7
Total		446	100

Based on table 5 above, the results showed the incidence of lung disease based on the type of work for the period January 2023 - June 2024 from 446 patients showed the most with not ASN / Private as many as 193 patients (21.8%).

Discussion

This study is based on retrospective descriptive research involving new patients at the Pulmonology Polyclinic of Dr. RM Djoelham Binjai Hospital from January 2023 to June 2024, encompassing a total sample of 446 patients. According to Table 1, the analysis of pulmonary illness diagnoses from January 2023 to June 2024, involving 446 patients, revealed that the predominant diagnosis was pulmonary tuberculosis (TB), affecting 237 patients (53.1%). Research conducted in North Sumatra in 2017 across 33 districts and cities revealed that Medan reported the largest number of new positive tuberculosis cases at 5,206, followed by Deli Serdang with 2,090 cases, Langkat with 850 cases, and Pakpak with the lowest at 77 cases [23]. Geographically, tuberculosis cases are most prevalent in Southeast Asia (45.6%), Africa (23.3%), and the Western Pacific (17.8%), while they are least prevalent in the Eastern Mediterranean (8.1%), the Americas (2.9%), and Europe (2.2%). Ten nations represented two-thirds of the overall tuberculosis cases: India (27.9%), Indonesia (9.2%),

China (7.4%), Philippines (7.0%), Pakistan (5.8%), Nigeria (4.4%), Bangladesh (3.6%), Democratic Republic of the Congo (2.9%), South Africa (2.9%), and Myanmar (1.8%) (MOH, n.d.).

Among the 446 patients studied, pulmonary tuberculosis was the predominant diagnosis. Tuberculosis (TB) is one of the oldest infectious diseases in human history and remains a significant public health issue globally (Ministry of Health, n.d.). The prevalence of this disease may continue to rise due to contributing factors such as the host, agent, and environment. The environment is an external factor comprising two components: the interior and external environment. Environmental components encompass physical, biological, and social contexts. Physical environment includes elements such as water, air, soil, climate, nutrition, temperature, illumination, radiation, and shelter, among others. The physical environment is intrinsically linked to the sanitation of residential areas, as it significantly influences disease transmission [36]. Disruptions in the host (including bodily resistance, nutritional status, and immunization), the agent (pathogens), and the environment (including housing density, duration of contact, ventilation, and lighting) invariably lead to disease onset [36]. Furthermore, the presence of communal activities and work environments among adults interacting with individuals afflicted by tuberculosis, or environments conducive to the transmission of pulmonary tuberculosis, exacerbates this issue [16].

According to Table 2, the analysis of pulmonary illness by gender from January 2023 to June 2024, involving 446 patients, indicated a predominance of males, with 266 individuals (59.6%). Several studies indicate a predominance of male patients among various cohorts. Research by Mila Triana Sari et al. (2020) involving 42 patients revealed that 24 were male, constituting 57.1% of the sample (Sari et al., 2020). Similarly, a study by Ni Kadek Kumara Aida et al. (2022) with 73 patients identified 41 males, representing 56.2% [1] Ardhitya Sejati et al. (2015) reported that out of 70 patients, 36 were male, accounting for 60% (Sejati & Sofiana, 2015). Finally, research by Aris Josua Mahulae et al. (2020) found that among 100 patients, 66 were male, which is 66% of the sample (Mahulae & Suandy, 2020). A study by Asmirat Yakob et al. (2023) involving 80 patients diagnosed with pulmonary tuberculosis revealed that the predominant gender was female, comprising 42 individuals (52.5%). Conversely, research conducted by Desto Arisandi et al. (2023) among 261 pulmonary tuberculosis cases indicated that the majority were male, totaling 153 patients (58.62%). Additionally, a study by Dian Wahyu Laily et al. (2015) found that out of 196 patients, the most prevalent gender was male, accounting for 108 patients (55.1%). A study by Emma Novita et al. (2017) involving 40 patients with pulmonary tuberculosis revealed that the majority, 28 patients (70%), were male [16]. In research conducted by Wa Ode Nur Hikmah Arif et al. (2022) with a sample of 49 individuals diagnosed with TB, 32 patients (65.3%) were male [6]

Additionally, a study by Setyo Dwi Widyastuti et al. (2018) involving 141 individuals with pulmonary tuberculosis indicated that the predominant age group was between 15-64 years, comprising 66.1% (Widyastuti et al., 2018). Furthermore, M. Zaki Rahmani et al. (2020) examined 61 cases of pulmonary tuberculosis and found that 37 cases (60.7%) were male [31]. In a study conducted by Silvia Indra, et al (2022) from a total sample of 90 cases of pulmonary tuberculosis disease of the sex found the most males as many as 58 cases (64.4%) (Indra et al., 2020).In a study conducted by Novia Permata Rahmasari, et al (2022) from a total sample of 366 cases of pulmonary tuberculosis disease of the sex found the most males as many as 207 cases (56.5%) (Rahmasari et al., 2022).In a study conducted by Novia Permata Rahmasari, et al (2022) from a total sample of 366 cases of pulmonary tuberculosis disease of the sex found the most males as many as 207 cases (56.5%), In a study conducted by Prita Nanda (2020) from a total sample of 201 cases of pulmonary tuberculosis disease of the sex found the most were men as many as 150 cases (74.6%) (Nanda, 2020).In a study conducted by Erni Herawati, et al (2018) from a total sample of 72 cases of pulmonary tuberculosis disease of the sex found the most were men as many as 40 cases (56.0%) (Herawati & Purwanti, 2018), (Bakhtiar et al., 2021), 2021).Meanwhile, according to the research of Martha Katarina Silalahi et al (2021), out of a total of 120 patients, 63 people (52.5%) were found to be male [25]. Men have heavy workloads and unhealthy lifestyles such as smoking and alcohol

(Sunarmi & Kurniawaty, 2022), (Bakhtiar et al., 2021). Research conducted by Nysa Ro Aina Zulfa et al. (2021) revealed that among 6302 patients, the predominant age group was 18-40 years [42]

This study revealed a predominance of male participants, consistent with findings from several other studies. This prevalence may be attributed to the smoking habits prevalent among men, which can diminish physical endurance and increase susceptibility to diseases, alongside other behaviors such as alcohol consumption (Sejati & Sofiana, 2015; Mahulae & Suandy, 2020). Men are also 2.07 times more likely to develop pulmonary tuberculosis compared to women [7]. Furthermore, detrimental habits such as smoking and alcohol consumption can impair the body's immunity, rendering men, particularly those who smoke and consume alcohol, more vulnerable to illness [24]. Moreover, men experience a greater workload alongside an unhealthy lifestyle characterized by smoking and alcohol consumption. In contrast, women prioritize their health more than men, resulting in a lower susceptibility to pulmonary tuberculosis. Additionally, men are more frequently exposed to environmental factors, increasing their likelihood of contracting various infectious diseases, including pulmonary tuberculosis. Some women, due to their domestic responsibilities, often delay seeking medical attention and exhibit less interest in visiting health service centers compared to men when they feel unwell [21].

According to Table 3, the results pertaining to age groups in lung illness from January 2023 to June 2024 indicate that out of 446 patients, the predominant age group is 51-60 years, comprising 93 patients (20.9%). Research by Mila Triana Sari (2020) involving 42 patients indicated that the majority, 23.8%, were aged 36-45 years (Sari et al., 2020). A study by Ni Kadek Kumara Aida et al. (2022) involving 73 patients revealed that the predominant age group was over 65 years, comprising 22 patients (30.1%). Conversely, research by Ardhitya Sejati et al. (2015) with 70 patients identified the most prevalent age groups as 21-30 years and 51-60 years, each consisting of 21 patients (35%). A study by Aris Josua Mahulae et al. (2020) revealed that among 100 patients, the predominant age group was 15-65 years, comprising 96.6% of the sample (Mahulae & Suandy, 2020). In another investigation by Asmirat Yakob et al. (2023), which included 80 patients diagnosed with pulmonary tuberculosis, the most prevalent age group was over 48 years, totaling 41 individuals (51.2%) (Yakob et al., 2023). Additionally, research conducted by Dian Wahyu Laily et al. (2015) indicated that within a sample of 196 patients, the most common age group was 26-45 years, accounting for 78 patients (39.8%) (Dian Wahyu Laily, 2015). A study by Emma Novita et al. (2017) involving 40 patients with pulmonary tuberculosis revealed that the majority were aged 12-35 years and 49-61 years, with each age group comprising 10 patients (25%) [16].

Research by Wa Ode Nur Hikmah Arif et al. (2022) involving a sample of 49 individuals with tuberculosis revealed that the predominant age group was 15-35 years, comprising 32 patients (65.3%). A study by Setyo Dwi Widyastuti et al. (2018) with a sample of 141 individuals with pulmonary tuberculosis indicated that the majority were aged 15-64 years (66.1%). M. Zaki Rahmani et al. (2020) conducted a study with a sample of 61 pulmonary tuberculosis cases, finding that adolescents constituted the largest group, with 14 cases (23%). Lastly, research by Silvia Indra et al. (2022) involving 90 pulmonary tuberculosis cases identified the most prevalent age group as 15-50 years, accounting for 63 cases (70.0%). In a study by Novia Permata Rahmasari et al. (2022), among a total sample of 366 pulmonary tuberculosis cases, the predominant age group was 15-50 years, comprising 212 cases (57.9%) (Rahmasari et al., 2022). Additionally, research by Prita Nanda (2020) identified 201 cases of pulmonary tuberculosis, with the highest incidence occurring in the 15-24 age group, comprising 40 cases (19.9%). In a study by Erni Herawati et al. (2018), among 72 cases of pulmonary tuberculosis, the majority were found in individuals under 55 years old, totaling 68 cases (94.0%). Research conducted by Martha Katarina Silalahi et al. (2021) indicates that among 120 patients, the predominant age group was adults aged 25-45 years, comprising 108 individuals (90.0%) (Mujahidah et al., 2023). Similarly, a study by Nysa Ro Aina Zulfa et al. (2021) involving 6302 patients revealed that the most prevalent age group was 18-40 years, accounting for 3497 individuals (56%) [42]

Each study yielded distinct outcomes; in this particular investigation, researchers identified that the predominant age group was 51-60 years old. This age group remains industrious, engaging in various activities. The productive age refers to a demographic characterized by heightened activity, when individuals allocate substantial time and energy to work. Consequently, the reduction in rest periods may pose a risk to overall endurance. The work environment significantly contributes to the transmission of pulmonary tuberculosis, as individuals encounter a greater number of people with varying health statuses and physical conditions (Arisandi et al., 2023). In Indonesia, the highest incidence of pulmonary tuberculosis occurs within the productive age demographic, particularly among those aged 45-54 years (Yakob et al., 2023). The prevalence of tuberculosis is highest among young adults in Indonesia, with an estimated 75% of patients belonging to the productive age demographic (Sejati & Sofiana, 2015; MAR'IYAH1 & ZULKARNAIN2, 2021). During this stage of life, individuals dedicate significant time and energy to work, leading to fatigue and insufficient rest, which subsequently weakens their immune systems (Sunarmi & Kurniawaty, 2022). Individuals over 45 years of age are primarily exposed to pulmonary tuberculosis from community sources, including their workplace (LESTARI, n.d.). According to data from the Indonesian Ministry of Health in 2022, tuberculosis affects all age groups; however, the most affected demographic is the productive age group of 15-54 years. The majority of pulmonary tuberculosis cases occur in individuals of productive age. The productive age is a period characterized by a heightened susceptibility to pulmonary tuberculosis infection. This is due to the high mobility of persons at a productive age, which increases the likelihood of exposure to pulmonary tuberculosis pathogens (Latifah et al., 2023).

According to Table 4, the findings about the educational background of patients with pulmonary disease from January 2023 to June 2024, derived from a sample of 446 individuals, indicate that the predominant level of education was high school or equivalent, represented by 237 patients (53.1%). According to research by Mila Triana Sari (2020), among 42 patients, the majority, 17 patients (40.5%), had an elementary school education (Sari et al., 2020). A study conducted by Asmirat Yakob et al. (2023) including 80 patients diagnosed with pulmonary tuberculosis revealed that the majority, 49 individuals (61.3%), had low educational attainment (Yakob et al., 2023). In a study by Emma Novita et al. (2017), among 40 patients with pulmonary tuberculosis, the predominant level of education was elementary school, with 28 patients (70%) having attained this level (Ismah & Novita, 2017). Research by Wa Ode Nur Hikmah Arif et al. (2022) indicates that among a sample of 49 individuals with pulmonary tuberculosis, the predominant educational level is from elementary to high school, comprising 36 patients (73.5%). In a separate study by Setyo Dwi Widyastuti et al. (2018), which included 141 individuals with pulmonary tuberculosis, the majority had not attended school, accounting for 61.3%. M. Zaki Rahmani et al. (2020) found that among 61 cases of pulmonary tuberculosis, the highest educational attainment was secondary school, with 29 cases (47.5%). Additionally, Erni Herawati et al. (2018) reported that in a sample of 72 pulmonary tuberculosis cases, the most common educational level was elementary school, with 24 cases (32.0%). According to the research conducted by Martha Katarina Silalahi et al. (2021), among the 120 patients studied, the majority, 90 individuals (75.0%), had education levels exceeding high school (Mujahidah et al., 2023).

This analysis revealed that the predominant educational group identified was high school graduates or their equivalents. A person's income influences their choice of residence for their family, and if the living conditions are inadequate, it may adversely affect the health of all inhabitants (Ismah & Novita, 2017). Effective transmission prevention measures involve enhancing behaviors through the dissemination of information, thereby augmenting an individual's knowledge. This, in turn, is anticipated to elevate awareness, ultimately leading to behavior that aligns with the acquired knowledge or education (Sari et al., 2020). The greater the education or understanding of an individual or family regarding a specific issue, the more favorable their attitude towards that issue, such as the behavior associated with limiting the transmission of pulmonary tuberculosis. Knowledge can be influenced by factors such as educational attainment and the accessibility of information, whether directly from healthcare professionals or indirectly through social media; an increase in

information obtained correlates with an enhancement in knowledge (Mujahidah et al., 2023). Knowledge and education contribute to health behavior. Knowledge, shaped by educational attainment, is a predisposing element that influences an individual's decision to adopt a clean and healthy lifestyle (Nur'aini et al., 2021). For instance, in the case of pulmonary tuberculosis, increased educational attainment facilitates an individual's comprehension of information regarding the disease's origin and transmission methods. Patients with higher education possess a superior comprehension of pulmonary tuberculosis compared to those with intermediate and lower education levels (RAHMANI, 2020).

Nevertheless, a lack of education does not diminish their aspiration for recovery from pulmonary tuberculosis, as they consistently adhere to health workers' recommendations regarding medication compliance. Despite their lower educational attainment, these patients frequently acquire information from television, radio, newspapers, and other media, thereby enhancing their knowledge. Research indicates that patients with a low level of education may possess greater awareness of the risks associated with pulmonary tuberculosis, as the majority of pulmonary tuberculosis patients hold a high school education (Nurhalisah et al., 2023). Moreover, additional factors include an individual's lack of awareness regarding the prevention of pulmonary tuberculosis, despite possessing adequate knowledge. This can lead to infection, as the community often fails to promptly report suspected tuberculosis cases to local health authorities. Furthermore, individuals frequently expectorate indiscriminately, neglect to cover their nose or mouth with a tissue or handkerchief when coughing, and do not dispose of tissues properly (La Rangki & Arfiyan Sukmadi, 2021).

According to Table 5, the findings regarding the type of employment in lung illness for the period from January 2023 to June 2024, derived from 446 patients, indicated that the majority were not ASN (State Civil Apparatus) or private sector employees, totaling 193 patients (43.3%). Research conducted by Mila Triana Sari (2020) including 42 patients revealed that the predominant occupation was housewife, with 13 patients (31.0%) identified as such (Sari et al., 2020). A study by Asmirat Yakob et al. (2023) involving 80 patients diagnosed with pulmonary tuberculosis revealed that the predominant occupation was housewife, comprising 26 individuals (32.5%) (Yakob et al., 2023). Another investigation by Desto Arisandi et al. (2023) examined 261 cases of pulmonary tuberculosis, identifying Non ASN/Private as the most frequent occupation, with 84 patients (32.18%) (Arisandi et al., 2023). Additionally, research by Emma Novita et al. (2017) involving 40 patients with pulmonary tuberculosis indicated that the most prevalent occupational status was unemployed, accounting for 15 patients (37.5%) (Ismah & Novita, 2017). While research by Wa Ode Nur Hikmah Arif1, et al (2022) from a total sample of 49 people with TB disease, the most was self-employed work as many as 25 patients (51.0%) (Arif et al., 2022).Research by Setyo Dwi Widyastuti et al (2018), from a total sample of 141 people with pulmonary TB according to the most work was not working (32.2%) (Widyastuti et al., 2018), 2018).In a study conducted by M.Zaki Rahmani, et al (2020) from a total sample of 61 cases of pulmonary tuberculosis disease from the type of work found the most were as labourers as many as 12 cases (19.7%) (RAHMANI, 2020).In a study conducted by Silvia Indra, et al (2022) from a total sample of 90 cases of pulmonary tuberculosis disease found the most were patients who worked as many as 47 cases (52.2%) (Indra et al., 2020), In a study conducted by Erni Herawati, et al (2018) from a total sample of 72 cases of pulmonary tuberculosis disease from the type of work found the most were self-employed as many as 39 cases (54.1%) (Herawati & Purwanti, 2018). Research conducted by Martha Katarina Silalahi et al. (2021) indicates that among 120 patients, those employed constitute the largest group, totaling 72 individuals (60.0%) (Mujahidah et al., 2023). Additionally, a study by Nysa Ro Aina Zulfa et al. (2021) reveals that out of 6302 patients, the predominant occupational category is 'others,' comprising 3414 patients (54.2%) (Zulfa & Prihartono, 2023).

This study revealed that the group receiving the greatest therapy was employed in non-ASN/private occupations. The primary risk of tuberculosis transmission in occupations is associated with health workers who have direct patient contact; however, other professions, such as

manufacturing workers, may also pose a risk (Sejati & Sofiana, 2015; MAR'IYAH1 & ZULKARNAIN2, 2021). Non-ASN/private work entails a heightened risk of tuberculosis exposure due to indoor environments characterized by inadequate sunlight and poor ventilation, coupled with socio-economic factors (Arisandi et al., 2023). Low-income occupations can facilitate tuberculosis transmission, as insufficient earnings hinder individuals from maintaining proper health standards (Sejati & Sofiana, 2015; MAR'IYAH1 & ZULKARNAIN2, 2021). Furthermore, certain jobs are intrinsically linked to poverty, where limited family income results in diminished purchasing power for nutritional needs, ultimately leading to frequent malnutrition, which compromises the immune system and increases susceptibility to diseases such as tuberculosis (Nurhalisah et al., 2023).

4. CONCLUSIONS

The characteristics of pulmonary disease research samples with a diagnosis of pulmonary tuberculosis, most in the type of age group 51-60 years, most in gender are male, with the highest level of education is graduating high school / equivalent, with the most occupations are not State Civil Apparatus / private.

Advice

Lung disease is one of the health problems often encountered in the community. Knowing the types of lung diseases is important, because each has different characteristics, causes, and ways of prevention and treatment. Lung health encompasses a wide range of conditions that can affect an individual's quality of life and life expectancy. Prevention of lung diseases is possible and do not hesitate to see a doctor for a quick and proper examination and treatment.

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