

Description of The Level of Knowledge and Behavior of Non Health Students In Patients with Pulmonary Tuberculosis

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ABSTRACT

Background: Pulmonary tuberculosis is an infectious disease that remains a major public health issue in Indonesia. It is caused by the *Mycobacterium tuberculosis*, which attacks the lower respiratory tract. One of the main challenges is the low rate of early detection and poor adherence to treatment. Inadequate knowledge and inappropriate behavior in prevention and transmission further worsen the situation. The public, especially those in the productive age group such as university students, need to increase their awareness of healthy living. Both health and non-health students are expected to act as agents of change by raising awareness and participating actively. This study aims to describe the level of knowledge and behavior of non-health students toward individuals with pulmonary tuberculosis. **Method :** This study used a quantitative descriptive approach through a survey of 100 non-health students. The sampling technique employed was probability sampling using cluster random sampling. The instrument used was a questionnaire on knowledge and behavior, with data analyzed univariately. **Results:** A total of 85 respondents (83%) had good knowledge, 16 (16%) had moderate knowledge, and 1 (1%) had poor knowledge. Regarding behavior, 51 respondents (50%) demonstrated good behavior, 14 (14%) moderate behavior, and 37 (36%) poor behavior. **Conclusion:** Non-health students generally have a good level of knowledge, although their behavior toward individuals with pulmonary tuberculosis still needs improvement. Further education programs and student involvement in public health activities are needed to reinforce positive behavior.

Keywords: Non-health students, Knowledge Level, Behavior, Pulmonary Tuberculosis

1. INTRODUCTION

Pulmonary tuberculosis ranks 4th as a cause of death in Indonesia with an estimated 98,000 patients dying each year. Data shows that around 10.8 million people in the world will have pulmonary tuberculosis by 2023. Some of the countries with the highest prevalence of pulmonary tuberculosis are India 27.9%, Indonesia 9.2%, and China 7.4% (Sulistyo et al., 2022; WHO, 2023; World Health Organization, 2024). The prevalence of pulmonary tuberculosis cases in Indonesia in 2023 was found to be 821,200 cases and increased 77.5% from 2022 with 677,464 cases, which is 74.7%. According to the Health Office report in 2023 East Kalimantan reached 7,264 cases of pulmonary tuberculosis. The number of cases in Samarinda was 64.4% per 100,000 cases and at Aji Muhammad Parikesit Tenggarong Hospital in 2023 data were obtained in January there were 16 cases, in February 8 cases, in March 3 cases, and in April reached 9 cases with a total of 36 cases of pulmonary tuberculosis (Dinas Kesehatan Provinsi Kalimantan Timur, 2024; Nugraha et al., 2024; Rahmawati, 2023).

Cases of pulmonary tuberculosis in Indonesia continue to increase, possibly due to the fact that many are undetected and many patients do not complete treatment, as well as a lack of knowledge and appropriate behavior in preventing disease transmission (Sa'diah et al., 2023; Silalahi et al., 2022). Breaking the chain of spread of pulmonary tuberculosis is very important to ensure that patients undergo treatment until completion. This treatment lasts at least 6 months with daily consumption of drugs, assisted by Supervision of Taking Medication (PMO) to keep patients disciplined. The patient's recovery is also influenced by the support of the closest people and environmental conditions. Therefore, increasing public understanding and awareness about the prevention and transmission of this disease is very important (Aini et al., 2023; Purba et al., 2024).

The largest number of cases occurred at ages 15-24 years (13.7%), ages 25-34 years (14.1%), 35-44 years (14.0%) and 45-54 years (15.9%). The data shows that pulmonary tuberculosis cases are mostly suffered by adults. Therefore, good knowledge and behavior begins with changes in lifestyle and healthy behavior of the community. The younger generation, especially students, have a big role as agents of change. They can be educators, facilitators, and community representatives in raising awareness and healthy habits to prevent the spread of the disease (Nugraha et al., 2024).

Efforts to improve students' knowledge about pulmonary tuberculosis aim to involve not only students from the health field, but also from other fields. With a good understanding, non-health students can raise awareness of the importance of maintaining

personal and environmental health. Through activities in the community, students have the opportunity to provide education and counseling on the prevention of tuberculosis. They can also motivate families to utilize health facilities and act as care givers for those in need (Aini et al., 2023).

Fitriangga's (2015) study on the empowerment of former pulmonary tuberculosis patients in increasing the number of pulmonary tuberculosis case findings found that former pulmonary tuberculosis patients can be involved in detecting pulmonary tuberculosis cases and can assist during the treatment period. Meanwhile, a study by Halimatu Sa'diah et al (2023) found that the level of understanding of students about pulmonary tuberculosis was still low. Meanwhile, research by Nian Zihrul Hidayat'E (2017), which examined the relationship between perceptions and health behaviors of people with tuberculosis based on the health promotion model, revealed that most people have not implemented habits that support the recovery of patients with pulmonary tuberculosis (Fitriangga, 2020; Hidayat' E, 2017; Sa'diah et al., 2023).

2. METHOD

The type of research used is quantitative with a descriptive research design. Descriptive research aims to describe the facts or characteristics of a population systematically, factually, and accurately.

The instrument used in this research is a survey approach, where data is collected by distributing questionnaires via a google form link to all students who are respondents. The sample size was 100 students selected using probability sampling technique with cluster random sampling, which is a method that gives each member of the population the same opportunity to be selected. The research population consists of students of non-health faculties at Mulawarman University which are considered homogeneous and divided into 10 faculties. With cluster random sampling, the number of samples taken from each faculty will be evenly distributed.

3. RESULT AND DISCUSSION

The results of this study describe the level of knowledge and behavior of non-health students in patients with pulmonary tuberculosis. Data collection was carried out through a survey or questionnaire in the form of a google form with a total of 102 respondents who fit the inclusion criteria. The results of data collection that have been obtained are then tabulated and analyzed. The results of the data in this study are presented in tabular form

and then will be interpreted in narrative form.

Table 3.1 Frequency Distribution Based on the Knowledge Level of Non-Health Students About Pulmonary Tuberculosis

No.	Category	F (n=102)	Percentage (%)
1.	Good (76-100%)	85	83%
2.	Fair (56-75%)	16	16%
3.	Poor (<56%)	1	1%
Total		102	100%

Source: Primary data, 2025.

Based on the results above, the majority of respondents had a good level of knowledge about pulmonary tuberculosis, as many as 85 (83%) respondents. While as many as 16 (16%) respondents had a sufficient level of knowledge, and only 1 (1%) respondent had a poor level of knowledge. These results indicate that most non-health students in this study have a good level of knowledge.

The survey results show that non-health students have a good level of knowledge about pulmonary tuberculosis. Knowledge is very influential in shaping a person's actions. When a person receives information about preventing pulmonary tuberculosis, it creates new knowledge that affects their attitude. If it is well understood, the knowledge will encourage real action to prevent pulmonary tuberculosis (Nisa et al., 2024).

The results of previous research conducted by (Aminudin, 2021) are in line with this study that non-health students have a high level of knowledge about pulmonary tuberculosis and its treatment. The results of research conducted by (Merani et al., 2021) show that health, quality of life, attitudes and behavior of a person are influenced by the level of knowledge. Another study conducted by Wardeningsih (2019) showed that knowledge partially influences a person in preventing tuberculosis transmission. A high level of knowledge will create the right behavior in preventing the spread of pulmonary tuberculosis. Vice versa, the level of prevention of pulmonary tuberculosis transmission will decrease as the level of knowledge decreases (Wardeningsih, 2019).

The survey results showed that students of the Faculty of Teacher Training and Education had the highest level of good knowledge, totaling 23 out of 85 respondents who had good knowledge compared to other faculties. This is in accordance with the results of research conducted by (Syaharuddin et al., 2025) that among non-health students, students who are in certain faculties such as education and engineering have the potential to have

better knowledge about the prevention of pulmonary tuberculosis compared to other non-health students. This conclusion was drawn from a study that showed varying levels of pulmonary tuberculosis awareness and knowledge across different academic backgrounds.

Table 3.2 Frequency Distribution Based on the Behavior of Non-Health Students Towards Pulmonary Tuberculosis Patients

No	Category	F (n=102)	Percentage (%)
1.	Good 23 - 30	51	50%
2.	Fair 15 - 22	14	14%
3.	Poor 7 - 14	37	36%
Total		102	100%

Source: Primary data, 2025.

Based on the table above, most respondents had good behavior in patients with pulmonary tuberculosis, as many as 51 (50%) respondents. Meanwhile, as many as 14 (14%) respondents had adequate behavior, and 37 (36%) respondents with poor behavior. These results indicate that the majority of non-health students in this study have good behavior towards patients with pulmonary tuberculosis.

This study showed that although most respondents had a good level of knowledge, the results showed that non-health students behaved well in patients with pulmonary tuberculosis, but only 51 (50%) respondents. This shows that there is a mismatch between the level of knowledge and the applied behavior. Good knowledge does not always correlate with good behavior. Factors such as laziness, self-focus, and motivation unrelated to adherence can influence behavior. This shows that knowledge and behavior can differ significantly (Sitompul, 2020).

A good level of knowledge and behavior of non-health students plays an important role in realizing the breaking of the chain of disease spread and acting as a care giver for family members, relatives or friends undergoing treatment for pulmonary tuberculosis. As part of the community, an understanding of the disease and prevention of pulmonary tuberculosis will be very much needed, especially when student activities require going directly to the community. This role will greatly impact the decrease in the prevalence of pulmonary tuberculosis in Indonesia (Aini et al., 2023).

The results of another study conducted by Ekastuti (2022) showed that a person's behavior will affect the reduction of tuberculosis prevalence. Behavior in preventing pulmonary tuberculosis based on understanding will create good behavior (Ekastuti, 2022).

4. CONCLUSIONS

The results of the study on the level of knowledge and behavior of non-health students toward individuals with pulmonary tuberculosis showed that most non-health students at Mulawarman University had good knowledge, with 85 respondents (83%) categorized as having good knowledge, 16 respondents (16%) with moderate knowledge, and 1 respondent (1%) with poor knowledge. Regarding behavior, 51 respondents (50%) demonstrated good behavior, 14 respondents (14%) showed moderate behavior, and 37 respondents (36%) were categorized as having poor behavior.

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