THE RELATIONSHIP BETWEEN THE LEVEL OF KNOWLEDGE OF PULMONARY TB PATIENTS AND HEALING RATE THROUGH DOTS TREATMENT STRATEGY AT PKM SUKAINDAH BEKASI REGENCY IN 2024

Eli Nurhayati [*]**, Asep Barkah**
Sekolah Tinggi Ilmu Kesehatan Abdi Nusantara
Jl. Swadaya No.7, RT.001/RW.014, Jatibening, Kec. Pd. Gede, Kota Bks, Jawa Barat 17412, Indonesia
Email: *elinurhayati2305@gmail.com*

Abstract

A global health problem that is still relevant today is pulmonary tuberculosis (TB). Pulmonary tuberculosis, better known as TB, is a disease that has been around for a long time, triggered by pathogenic bacteria, and has never received adequate treatment. One effort in treating pulmonary TB is the DOTS strategy. The results of interviews with 5 pulmonary TB patients, most of whom stated that they did not know enough about pulmonary TB disease and did not regularly take their medication. Objective: to determine the relationship between the level of knowledge of pulmonary TB patients and the rate of recovery through the DOTS treatment strategy at PKM Sukaindah, Bekasi Regency in 2024. Quantitative research design with a descriptive correlational (cross-sectional) approach. The sample was 75 pulmonary tuberculosis patients who had received treatment for at least 6 months. The analysis used is univariate and bivariate analysis with the chi-square test. The results showed that the majority of respondents had good knowledge about pulmonary TB (73.3%), and the majority of respondents were declared cured of TB disease through the DOTS treatment strategy (65.3%). The results of the chi-square test show that there is a relationship between the level of knowledge of pulmonary TB patients and the cure rate through the DOTS treatment strategy (p-value: 0.001) and the OR value (6.000). Conclusion: there is a relationship between the level of knowledge and the cure rate for pulmonary TB patients. so it is hoped that health workers will pay attention to the condition of patients with insufficient knowledge/understanding about the importance of the pulmonary TB treatment process by providing further health services.

Keywords: DOTS strategy, Knowledge, TB patients

Introduction

A global health problem that is still relevant today is pulmonary tuberculosis (TB). Tuberculosis is a type of disease that can be transmitted and is caused by the bacterium Mycobacterium tuberculosis. This disease can infect the lungs or other body organs. This disease is spread through patients suffering from tuberculosis, especially those who have tuberculosis germs in their phlegm. When someone coughs or sneezes, they expel germs into the air as droplet nuclei (Ministry of Health of the Republic of Indonesia, 2019).

Pulmonary tuberculosis, better known as TB, is a disease that has been around for a long time, triggered by pathogenic bacteria, and has never received adequate treatment, according to the Indonesian Minister of Health. During the 77 years since Indonesia's independence, various efforts have been made to resolve this problem. Vaccines and medicines were discovered several decades ago, but until now it is still difficult to treat them well. It is estimated that there are around 824 thousand individuals suspected of being infected with Tuberculosis (TBC) in Indonesia. The Indonesian Minister of Health, Budi Gunadi Sadikin, hopes that 90% of the total number can be detected by 2024 (Indonesian Ministry of Health, 2022).

395

Based on the Global TB Report 2021, the number of TB cases in Indonesia is estimated to reach 824,000. However, only 393,323 TB patients were found, treated, and reported to the national information system, which is equivalent to 48% of the total number of cases. Currently, there are still around 52% of the total TB cases that have not been detected or may have been detected but have not been reported. In 2022, September data shows that the TB discovery and treatment rate reached 39% (one-year target 90%) and the success rate of TB treatment reached 74% (SR target 90%). Indonesia commits to achieving TB elimination by 2030 with a target of an incidence rate of 65/100,000 population and a death rate of 6/100,000 population (Ministry of Health of the Republic of Indonesia, 2022).

According to the West Java Provincial Health Service, the number of new TB cases will continue to increase over time, namely. 92,000 in 2021, to 159,000 in 2022, and January-April 2023 the number of new TB cases was 47,000 (West Java Provincial Health Service, 2023).

Pulmonary tuberculosis cases in Bekasi Regency increased from 2019 to 2023, namely in 2019 there were 1,592 cases, in 2020 there were 4,373 cases, in 2021 there were 4,895 cases, and in 2022 there were 8,379 cases. This may happen because it has been going on for years. The outbreak of the coronavirus disease (COVID-19) in Indonesia has caused an increase in cases of pulmonary tuberculosis. In 2023, the number of pulmonary tuberculosis cases will still be around 10,000 cases, the fourth highest in West Java. The cure rate for patients affected by pulmonary tuberculosis is 68.50% in 2022, higher than in 2021 at 65.27% (P3M Bekasi District Health Service, 2023).

The World Health Organization (WHO) has developed a tuberculosis control strategy known as the Directly Observed Treatment Shortcourse (DOTS) strategy. The focus of DOTS is finding and healing sufferers. This strategy will interrupt the transmission of tuberculosis and thereby reduce the incidence of tuberculosis in the community. One of the components of DOTS is treatment with a short-term combination of anti-tuberculosis drugs (OAT) with direct supervision of a Drug Ingestion Monitor (PMO) (Ministry of Health of the Republic of Indonesia, 2019).

In Indonesia, TB control is implemented nationally through public health service units (UPK), especially community health centers that are integrated with primary health services. The anti-tuberculosis drug (OAT) used is a standard combination of INH (isoniazid), PAS (paraaminosalicylate), and streptomycin for one to two years. Short-term OAT guidelines consisting of INH (isoniazid), rifampicin, and ethambutol for 6 months have been used since 1977 (Ministry of Health of the Republic of Indonesia, 2019).

The DOTS strategy is direct supervision of short-term therapy, namely therapy with a predetermined combination of OAT for at least 6 months. This strategy is a comprehensive strategy implemented throughout the primary care setting to identify and treat TB with the hope of reducing the incidence of TB in the community. The DOTS strategy has 5 key components, namely: 1) political commitment to funding, 2) case finding with quality sputum microscopy, 3) standard treatment with patient monitoring and support, 4) effective management system and access to OAT, 5) registration and reporting systems, which can evaluate patient outcomes and program effectiveness. Direct control of drug intake through Drug Monitor (PMO) is a differentiating factor and the most important part of this method. Direct monitoring of drug consumption is expected to increase TB cure rates and reduce TB incidence and death rates (Ministry of Health of the Republic of Indonesia, 2019).

According to research by Liria (2017), the relationship between knowledge of pulmonary tuberculosis sufferers and the level of compliance in pulmonary TB treatment programs is proven. The successful recovery of pulmonary TB patients is influenced by their level of compliance with the treatment program. The research results showed that the majority of respondents, namely 29 people (96.67%), had good knowledge about tuberculosis treatment and as many as 27 people (90%) complied with the treatment program. There is also support from Putri's research (2014), where the results of her research show that there is a correlation between the success of healing and the use of the DOTS method in treatment. Based on this research, it was found that the cure rate reached 90.6% when using the DOTS method.

In 2018, Notoatmodjo stated that a person's knowledge about a health problem will influence the actions a person takes regarding that problem. In this situation, the higher an individual's understanding of the benefits of treatment and the risks of making mistakes or stopping taking medication, the more compliant they will be in following the treatment program and undergoing regular visits according to the schedule set by health workers.

The results of a preliminary survey in the field conducted by researchers through observation and interviews as well as recording case reports in the PKM Sukaindah medical records unit for the period January-September 2023 were 75 cases. The results of interviews with 5 pulmonary TB patients, most of whom stated that they did not know enough about pulmonary TB disease and did not regularly take their medication.

Based on the description above, researchers are interested in conducting research with the title "The relationship between the level of knowledge of pulmonary TB patients and the rate of recovery through the directly observed Treatment Short Course (DOTS) strategy at PKM Sukaindah, Bekasi Regency."

Method

A quantitative approach with descriptive correlational (cross-sectional) methods was used as the research plan. Cross-sectional research is a type of research where the emphasis is on measuring/observing data on independent variables and dependent variables only once so that there is no follow-up (Nursalam, 2017). Correlational descriptive research is research that examines the relationship between the independent variable (patient knowledge about pulmonary tuberculosis) and the dependent variable (frequency of treatment with the DOTS treatment strategy).

The research was conducted at PKM Sukaindah, Bekasi Regency. The sample used in the research was 75 people. The data collection technique was carried out through interviews and was guided by the questionnaire created by the researcher attached in Appendix 2. The questionnaire consisted of two parts, the first part contained questions about the patient's knowledge about pulmonary tuberculosis. and another section about the speed of patient treatment recovery through the DOTS strategy. The data analysis used is univariate analysis and bivariate analysis with the chi-square test.

Results

Table 1. Distribution of Respondents according to patient knowledge about Pulmonary TB

Patient knowledge about pulmonary TB	Frequency (n)	Percentage (%)
Good	55	73.3
Not good	20	26.7
Total	75	100

Table 1 shows the distributionThe frequency of respondents with good knowledge was 55 people (73.3%), while respondents with poor knowledge were 20 people (26.7%).

Table 2. Distribution of Respondents according to patient recovery rate with DOTS strategy

Patient recovery rate with DOTS strategy	Frequency (n)	Percentage (%)
Healed	49	65.3
Not cured	26	34.7
Total	75	100

Table 2 shows the frequency distribution of the patient recovery rate variable using the DOTS strategy. It shows that the majority of respondents who were declared cured through the DOTS strategy were 49 people (65.3%), while the respondents who were declared not cured through the DOTS strategy were 26 people (34.7%).).

Table 3. The relationship between patient knowledge about pulmonary TB andpatient recovery rate with the DOTS strategy at PKM Sukaindah Bekasi Regency in 2024

Patient knowledge about pulmonary TB	Patient recovery rate with DOTS strategy				Total		*p value*	OR (95% CI)
	Healed		Not cured					
	n	%	n	%	n	%		
Good	42	76.4	11	23.6	55	100		6,000 (1,978-18,199)
Not good	7	35.0	13	65.0	20	100	0.001	
Total	49	65.3	26	34.7	75	100		

Based on table 3, the relationship between patient knowledge about pulmonary TB and the patient's recovery rate using the DOTS strategy shows that of the 55 respondents with good knowledge, there were 42 people (76.4%) who were declared cured using the DOTS strategy and there were 13 people (23, 6%) were declared not cured through the DOTS strategy, while of the 20 respondents whose knowledge was poor, there were 7 people (35%) who were declared cured through the DOTS strategy and there were 13 people (65%) who were declared not cured through the DOTS strategy.

The results of statistical tests (chi-square) show pvalue= 0.001 (≤ 0.05), so it can be concluded that there is a relationship between patient knowledge about pulmonary TB and the patient's recovery rate using the DOTS strategy. An OR value of 6,000 means that respondents who have good knowledge about pulmonary TB have 6 times the chance of being declared cured through the DOTS strategy compared to respondents whose knowledge is less good.

Discussion
Patient knowledge about pulmonary TB
The results showed that the majority of respondents had good knowledge about pulmonary TB (73.3%), but there were still respondents who had poor knowledge (26.7%). The difference in respondents' knowledge is based on the education they have completed/completed, where this influences a person's ability to follow instructions from health workers to understand the conditions they are experiencing and the actions taken to deal with a problem.

This is in line with researchLiria (2017), where the research results showed that the majority of respondents, namely 29 people (96.67%), had good knowledge about tuberculosis treatment and as many as 27 people (90%) complied with the treatment program.

This is supported by Notoatmodjo's (2018) statement that a person's knowledge about a health problem will influence the actions a person takes regarding that problem. In this situation, the higher an individual's understanding of the benefits of treatment and the risks of making mistakes or stopping taking medication, the more compliant they will be in following the treatment program and undergoing regular visits according to the schedule set by health workers.

Patient recovery rate with DOTS strategy
The results of the study based on the patient recovery rate variable using the DOTS strategy showed that the majority of respondents were declared cured of TB disease using the DOTS treatment strategy (65.3%), while the remainder were declared not cured (34.7%).

This is in line with researchLiria (2017), where the research results showed that the majority of respondents, namely 27 people (90%) complied with the treatment program. from Putri's research (2014), where the results showed that there was a correlation between the success of healing and the use of the DOTS method in treatment. Based on this research, it was found that the cure rate reached 90.6% when using the DOTS method.

The DOTS strategy is direct supervision of short-term therapy, namely therapy with a predetermined combination of OAT for at least 6 months. This strategy is a comprehensive strategy implemented in all primary care settings to identify and treat TB with the hope of reducing the incidence of TB in the community (Ministry of Health of the Republic of Indonesia, 2019).

The relationship between patient knowledge about pulmonary TB and the level of patient recovery with the DOTS strategy at PKM Sukaindah Bekasi Regency in 2024

The results of the analysis of the relationship between patient knowledge about pulmonary TB and the patient's recovery rate using the DOTS strategy showed that of the 55 respondents with good knowledge, there were 42 people (76.4%) who were declared cured using the DOTS strategy and there were 13 people (23.6%) who were declared cured using the DOTS strategy. %) who were declared not cured through the DOTS strategy, while of the 20 respondents with poor knowledge, there were 7 people (35%) who were declared cured through the DOTS strategy and there were 13 people (65%) who were declared not cured through the DOTS strategy. The results of this study show that the patient recovery rate is mostly seen in patients who have good knowledge, where they understand what to do to recover, namely following the treatment program/method with the DOTS strategy recommended by health workers (government) in treating pulmonary TB.

The results of the analysis show that there is a relationship between patient knowledge about pulmonary TB and the patient's recovery rate using the DOTS strategy (pvalue= 0.001), this is supported by the odds ratio value (OR=6), meaning that respondents who have good knowledge about pulmonary TB have a 6 times greater chance of who were declared cured through the DOTS strategy compared to respondents whose knowledge was less good.

Knowledge is the result of knowledge and occurs after humans perceive a certain object. Sight, hearing, smell, taste and touch are the five human senses that form perception, namely (Notoatmodjo, 2018). Cognitive or knowledge is a very important area in the development of human activity (open-minded behavior). Based on experience, it seems that knowledge-based behavior is more sustainable than behavior without knowledge-based behavior (Notoatmodjo, 2018).

Siagian (2016) emphasized that the level of education influences the level of knowledge of the person concerned. People with higher education have better performance because they have broader knowledge and understanding than people with low education. The higher a person's level of education, the more knowledge they have. On the other hand, low education hinders a person's attitude towards newly adopted values (Notoatmodjo, 2018).

According to researchers, there is a relationship between respondents' knowledge about pulmonary TB and the recovery rate of pulmonary TB patients with the DOTS strategy, indicating that respondents' knowledge influences behavior or decisions taken in the current treatment process. Their decision to undergo treatment with the DOTS method/strategy is complete because they know the positive impact of this treatment method and they also know the risk of disease suffered if the treatment program with the DOTS method/strategy is not completed properly. Apart from that, the DOTS strategy has advantages in the treatment program for pulmonary TB patients where the chain of treatment is supported by interrelated elements (factors) such as the availability of drugs, supervision and support from health workers and families.

Conclusion

1. Based on the knowledge variable, it is known that the majority of respondents have knowledgepeople who have good knowledge about pulmonary TB (73.3%), but there are still respondents who have poor knowledge (26.7%).

2. Based onThe patient recovery rate variable using the DOTS strategy shows that the majority of respondents were declared cured of TB disease using the DOTS treatment strategy (65.3%), while the remainder were declared not cured (34.7%).

3. There is a relationship between the level of knowledge of pulmonary TB patients and the rate of recovery through DOTS strategy treatment at PKM Sukaindah Bekasi Regency in 2024 with p-value (0.001) and OR value (6.000).

References

[1] Arikunto, S. 2019. Research Procedures: A Practical Approach. Jakarta: Rineka Cipta.

[2] Bekasi District Health Office. 2022. Bekasi District Health Profile in 2022. Sub-Coordinator of P3M Bekasi District Health Service.

[3] Bekasi District Health Office. 2023. Bekasi Regency Tuberculosis Case Report 2023. Sub-Coordinator of P3M Bekasi District Health Service.

[4] West Java Provincial Health Office. 2023. West Java Province Tuberculosis Case Report 2023. West Java Provincial Health Service P3M Sub-department.

[5] Hastono, SP 2016. Statistical Analysis for the Faculty of Health. FKM UI

[6] Indonesian Ministry of Health. 2019. National Guidelines for Tuberculosis Control. Jakarta: Indonesian Ministry of Health.

[7] Indonesian Ministry of Health. 2022. 4th Indonesia Tuberculosis International Meeting (INA Time) 2022. Jakarta: Directorate General of P2P Ministry of Health of the Republic of Indonesia. Jakarta

[8] Liria C. Bawihu. 2017. The Relationship between Knowledge of Pulmonary Tuberculosis Sufferers and the Level of Compliance in the Pulmonary Tuberculosis Treatment Program at the Bahu Community Health Center, Malalayang District, Manado. Department of Pharmacy, FMIPA, Sam Ratulangi University, Manado, 95115. Pharmaceutical Scientific Journal – UNSRAT Vol. 6 No. 4 NOVEMBER 2017 ISSN 2302 – 2493.

[9] Notoadmojo, Soekidjo. 2018. Health Research Methodology. Jakarta: Rineka. Create.

[10] Notoatmodjo, Soekidjo. 2018. Health Behavior Science. Jakarta: Rineka Cipta.

[11] Nursalam. 2017. Nursing Science Research Methodology: A Practical Approach 4th Edition. Jakarta: Salemba Medika.

[12] Putri, GFS 2014. Relationship between cure rates for adult pulmonary tuberculosis and treatment with dots and non-dots methods. JKKI, Vol.6, No.2.

[13] Sugiyono. 2017. Management Research Methods. Bandung: Alphabeta.

[14] Sukaindah PKM Team. 2023. Sukaindah Health Center's annual report of infectious disease cases 2023. Sukaindah Health Center, Bekasi Regency