

CASE RATE AND EARLY DETECTION OF PULMONARY TUBERCULOSIS DISEASE IN STUDENT AT ELEMENTARY SCHOOL 04 LEBAK BULUS

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Abstract

The age of children is an age that is very vulnerable to transmission of pulmonary tuberculosis. The highest rate of transmission is found in the 0-6 year age group and the 7-14 year age group. Various efforts were made to minimize the occurrence of tuberculosis in children, such as the program of community health center in preventing and controlling pulmonary tuberculosis. The purpose of this study was early detection of pulmonary tuberculosis in Elementary School 04 Lebak Bulus. This type of research is cross sectional. Questionnaire as a method of data collection. The total population is 270 people with a sample of 37 people with convenience sampling technique. Univariate analysis with diagram. The result showed that were students who showed symptoms that lead to pulmonary tuberculosis disease (2,7%) and had risk factors for pulmonary tuberculosis disease (2,7%) from a total sample of 37 people. It can be concluded that there are students who have symptoms and risk factors for pulmonary tuberculosis disease at Elementary School 04 Lebak Bulus. Researchers suggest that further examinations be carried out in the form of rapid molecular test with sputum samples.

Keywords: clinical symptoms; risk factors; early detection; pulmonary tuberculosis; MRT

Introduction

Globally, tuberculosis (TB) is still the main cause of morbidity and mortality, but attention to its health impacts is often underestimated. According to the WHO report in 2021, it is estimated that there will be 5.8 million TB cases in 2021, 7.6% of global TB cases are in Indonesia. The incidence of TB in children in the world reaches 1 million cases (Rosmayudi, 2007).

DKI Jakarta is one of the provinces with a high incidence of TB. It was recorded in 2018 with the number of incidents of 32,570 people or 0.3% of the total population of Jakarta. DKI Jakarta is one of the provinces with a high population density so there is a great potential for TB transmission (statistik.jakarta.go.id).

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Puskesmas is a health facility which is a government program for efforts in health services and is an organization consisting of dense human resources, technology, and service activities that are carried out so that the management of puskesmas is not only a public service institution, but also a socio-economic institution that has the authority and responsibility in the continuity of puskesmas services (Setyanto, 2013).

The increase in the number of TB cases in various places at this time is thought to be caused by various things, namely incorrect diagnosis, inadequate treatment, prevention programs are not implemented properly, HIV endemic infection, population migration, self-treatment, increasing poverty, and inadequate health services (World Health Organization, 2006).

Pulmonary tuberculosis is an infectious disease that can cause life-threatening conditions if the patient does not complete treatment (Madansein et al., 2015). The spread of the tuberculosis virus becomes quite vulnerable to people who often have direct contact with tuberculosis sufferers. Clinical symptoms experienced by patients with pulmonary tuberculosis include respiratory disorders such as coughing up phlegm, coughing up phlegm with blood, shortness of breath, and chest pain, as well as systemic symptoms such as fever, lethargy, night sweats, and weight loss (Widyasari & Sasongko, 2018).

One of the puskesmas programs is the TB Prevention and Control Program. Accurate assessment of TB disease in children is currently hampered by limited surveillance data. The difficulty of diagnosing TB in children has resulted in very limited TB data in children. The difficulty of confirming the diagnosis of TB in children has resulted in neglect of treatment for childhood TB, so that for several years childhood TB was not a public health priority in many countries. However, in recent years with research conducted in developing countries, the prevention of TB in children has received enough attention (Kemenkes RI, 2014).

UPTD Puskesmas Lebak Bulus is one of the health centers in DKI Jakarta that is committed to TB control and prevention, namely with the pillars and components of TB control such as integration of patient-centred TB services and TB prevention efforts, policies and support systems that are bold and clear, as well as the intensification of research and innovation.

According to the study, it was found that there were 12 male respondents (54.5%) and 10 female respondents (45.5%) with the highest distribution age of respondents being children aged 3 years (31.8%) (Farsida & Kencana, 2020).

The age of children is an age that is very vulnerable to transmission of tuberculosis (Newton, Brent, Anderson, Whittaker, & Kampmann, 2008). The highest rate of transmission is found in the 0-6 year age group and the 7-14 year age group. Age children are very susceptible to contracting tuberculosis and when infected they are susceptible to tuberculosis and tend to suffer from severe tuberculosis such as tuberculosis meningitis, miliary, or severe lung disease (IDAI, 2009).

One of the factors that cause tuberculosis in children, namely lack of knowledge about TB in parents or adults in their environment, wrong coughing and spitting ethics,

public ignorance of the impact that can be caused by irregularity in taking medication, lack of awareness of TB suspects to check themselves, lack of awareness of TB sufferers for treatment, poor nutritional intake, densely populated environment, slum environment, low education level, middle to lower economic level, and there are still many people who are ashamed to seek treatment and are hesitant to seek medical attention. These factors are important to be analyzed and followed up so that researchers are interested in conducting early detection of TB disease (Putri et al., 2022).

Based on the background described above, this study was conducted with the aim of knowing the number of cases of pulmonary TB disease in students at SDN 04 Lebak Bulus Village, knowing early detection of pulmonary tuberculosis in students with clinical symptoms, and knowing early detection of pulmonary tuberculosis in students. risk factors.

This research provides benefits for institutions by adding insight into early detection of pulmonary TB disease. It is hoped that it can provide information and be followed up by socializing to students about pulmonary TB disease and the importance of getting treatment to completion, increasing school participation in achieving a tuberculosis free society.

Research Methods

The research design used in this study is descriptive with a cross sectional which aims to identify the status of pulmonary TB disease in students of SDN 04 Lebak Bulus in the 2018/2019 academic year grades 4-6. Held in August 2019 for one day. The location of this research was at SDN 04 Lebak Bulus which is included in the working area of the Lebak Bulus Health Center located in Lebak Bulus Village, Cilandak District, South Jakarta City, DKI Jakarta Province.

The population in this study were students in grades 4-6 at SDN 04 Lebak Bulus Village for the 2018/2019 academic year with a total of 270 students. The sample in this study were some students of SDN 04 Lebak Bulus Village. sampling technique used was convenience sampling, namely the search for samples by taking the most possible sample at SDN 04 Lebak Bulus Village with a total of 37 students.

In collecting data, researchers used research instruments in the form of questionnaires and pulmonary TB scoring sheets to diagnose pulmonary TB. The data that researchers take is primary data and secondary data which is quantitative data. Collecting data with TB scores and questionnaires using a questionnaire method to the respondents who were selected based on the convenience sampling technique. The variables in this study were early detection based on clinical symptoms and risk factors. For data processing is used manually and the help of data processing software using Microsoft Word and Microsoft Excel. The data that has been obtained were analyzed univariately, namely to determine the frequency distribution of the independent and dependent variables studied which were presented in the form of graphs and tables. Univariate data presentation using frequency distribution.

Result and Discussion

School Sociodemographic Data

State Elementary School 04 Lebak Bulus is located at Jalan Puskesmas, RT.1/RW.3, Lebak Bulus Village, Cilandak District, South Jakarta. The total number of students in the 2018/2019 academic year was 270 students consisting of grades 4 to 6.

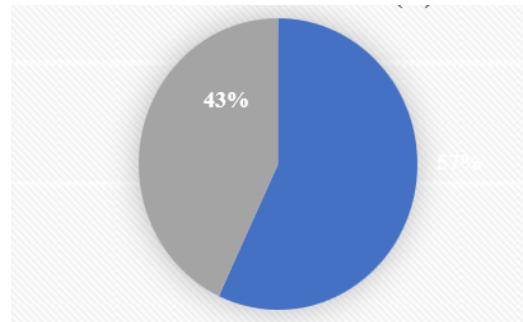


Figure 1. Characteristics of Respondents by Gender

In this study, 37 respondents were taken in the area of SDN 04 Lebak Bulus Village. Of the total number of respondents, there are 21 respondents (56.8%) with female gender and 16 respondents (43.2%) with male gender.

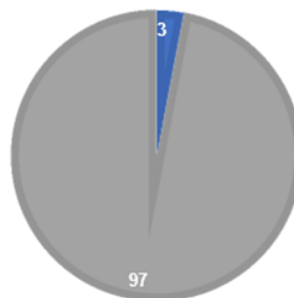


Figure 2. Number of Respondents Based on Clinical Symptoms

From the early detection of pulmonary TB that the researchers did, it was found that 1 respondent (2.7%) showed symptoms leading to pulmonary TB disease with symptoms of cough lasting more than two weeks, while 36 respondents (97.3%) had symptoms that did not lead to pulmonary TB. Pulmonary TB.

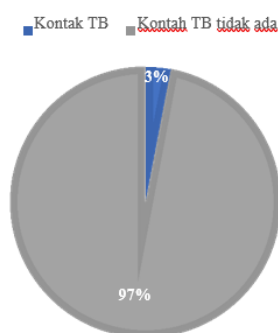


Figure 3. Number of Respondents Based on Risk Factors

From the diagram above, based on risk factors, 1 respondent (2.7%) of respondents had risk factors for pulmonary TB disease. Respondents admitted that they had long interacted with pulmonary TB patients in the last two years. Meanwhile, 36 respondents (97.3%) had no interaction with pulmonary TB patients in the last two years.

Based on gender, most of the respondents were women with a total of 21 respondents (56.8%), while men with a total of 16 respondents (43.2%). This is not in accordance with Farsida's 2020 research which states that there are more male respondents than female with a percentage of 54.5%. This is because the population of students in grades 4-6 SDN 04 academic year 2018/2019 are mostly women.

Based on clinical symptoms and risk factors in early detection of pulmonary TB disease in grade 4-6 students of SDN 04 Lebak Bulus Village, 1 respondent (2.7%) of 37 respondents with symptoms led to pulmonary TB. This is because the respondent has a long cough for more than two weeks that does not go away, other symptoms such as night sweats, fever for more than two weeks, and weight loss for no apparent reason. Patients have risk factors in the form of contact with TB patients who have been on treatment for more than two months.

According to the 2014 National TB guidelines, all coughs that exceed two weeks are an indication for sputum examination for the discovery of pulmonary TB disease. Respondents who have symptoms leading to TB are given an introduction to the puskesmas for further examination in the form of a Molecular Rapid Test (TCM) with a sputum sample (Kemenkes RI, 2014).

Of all the risk factors and clinical symptoms obtained in respondents, they cannot be directly included in the category of suspected pulmonary TB disease because not all symptoms and risk factors for pulmonary TB are found. With the results obtained, the researchers educated on how to cough in patients who were detected early, this factor is important because if in one room there is a pulmonary TB patient who coughs or sneezes and does not cover his mouth, the bacteria that cause pulmonary TB can easily spread in that room.

In addition, the bacteria that cause pulmonary TB (*Mycobacterium tuberculosis*) can be easily killed by sunlight, so ventilation is an important factor in the spread of

pulmonary TB disease. At SDN 04 Lebak Bulus school, classroom ventilation is adequate.

Conclusion

Based on the research data that the researchers conducted on students of SDN 04 Lebak Bulus Village, it was found that the number of pulmonary TB cases was one respondent who had symptoms that lead to pulmonary TB disease based on clinical symptoms and risk factors. Based on clinical symptoms in early detection of pulmonary TB disease in grade 4-6 students of SDN 04 Lebak Bulus Village, 1 respondent (2.7%), while 36 respondents (97.3%) did not have clinical symptoms of pulmonary TB. Early pulmonary TB disease in grade 4-6 students of SDN 04 Lebak Bulus Village found 1 respondent (2.7%), while 36 respondents (97.3%) had no risk factors for pulmonary TB.

BIBLIOGRAFI

- Farsida, Farsida, & Kencana, Ratu Manik. (2020). Gambaran karakteristik anak dengan tuberkulosis di Puskesmas Pamulang Tangerang Selatan. *Muhammadiyah Journal of Midwifery*, 1(1), 12–18. <https://doi.org/10.24853/myjm.1.1.12-18>
- IDAI. (2009). Pedoman Pelayanan Medis hal: 323.
- Kemendes RI. (2014). Pedoman Nasional Pengendalian Tuberkulosis. Kementerian Kesehatan Republik Indonesia Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan.
- Madansein, Rajhmun, Parida, Shreemanta, Padayatchi, Nesri, Singh, Nalini, Master, Iqbal, Naidu, Kantharuben, Zumla, Alimuddin, & Maeurer, Markus. (2015). Surgical treatment of complications of pulmonary tuberculosis, including drug-resistant tuberculosis. *International Journal of Infectious Diseases*, 32, 61–67. <https://doi.org/10.1016/j.ijid.2015.01.019>
- Newton, Sandra M., Brent, Andrew J., Anderson, Suzanne, Whittaker, Elizabeth, & Kampmann, Beate. (2008). Paediatric tuberculosis. *The Lancet Infectious Diseases*, 8(8), 498–510. [https://doi.org/10.1016/S1473-3099\(08\)70182-8](https://doi.org/10.1016/S1473-3099(08)70182-8)
- Putri, Anna Tasya, Lubis, Nisa Mahfira, Hasibuan, Sera Hayati Br, Lingga, Suci Ramadhani, Surianti, Surianti, & Sabillah, Vanny Silvia. (2022). *Pemahaman Dan Pemecahan Isu Masalah Kesehatan Terkini*.
- Rosmayudi. (2007). Diagnosis dan Pengobatan Tuberkulosis pada Bayi dan Anak.
- Setyanto, D. B. (2013). Tantangan diagnosis TB pada anak. *Dalam: Trihono PP, Djer MM. Indawati W, Penyunting. Peningkatan Kualitas Pelayanan Kesehatan Anak Pada Tingkat Pelayanan Primer. Jakarta: Ikatan Dokter Anak Indonesia*, 16–17.
- Widyasari, Lina Annisa, & Sasongko, Priyo Sidik. (2018). *Sistem Deteksi Dini Penyakit Tuberkulosis Paru Menggunakan Learning Vector Quantization 2*. Universitas Diponegoro.
- World Health Organization. (2006). Guidance for national tuberculosis programmer on the management of tuberculosis in children.

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