

## Early Detection Education of Tuberculosis Children To Increase Knowledge In Kindergarten Teachers Aisyiyah amid Coronavirus Pandemic

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### ABSTRACT

*"During the COVID-19 pandemic, Indonesia's position shifted the People's Republic of China to the World's 2nd ranking for the highest TB cases. The prevalence of pulmonary TB in Indonesia reaches 8% making it a global issue in world health. The increased incidence of tuberculosis in adults has implications for the increase in cases of tuberculosis in children. Tuberculosis in children has a long-term effect on the growth and development of the child, the step taken is an early prevention effort. Kindergarten teachers are the closest people to the child after parents who have an important role in early detection of tuberculosis in children. This study aims to find out the Differences in Teacher Knowledge on Early Detection Education of Tuberculosis Children at Aisyiyah Kindergarten in DKI Jakarta. This type of research is Quasi Experimental research with one group approach pre test-post test design which is a sample group with the same subject but experienced different assessments between before and after Education. The number of samples in this study was 79 people (total population). The evaluation results showed that out of 79 participants only 50 participants completed the pre test and post test activities. The average pre test score is 57.78 and the average post test score is 72.02. There was a significant difference in the average value of knowledge of participants before and after health education (value  $p = 0.0001$ ). A total of 74% of participants found the materials provided to be very useful, but others felt constrained by networks such as less clear and resonant sounds. Similar activities need to be done by reaching a wider audience."*

*Keywords: Knowledge, Early Detection, TB, Aisyiyah, Kindergarten Teachers*

## INTRODUCTION

Tuberculosis to date is still a health problem in the world, An estimated 20 million children are exposed to tuberculosis (TB) each year, Children bear a huge burden of global tuberculosis (TB) burden, with more than one million (<15 years) falling ill each year, and 90% of the 205,000 children estimated to die of TB each year never diagnosed or treated. [1]

Tuberculosis (TB) is caused by bacteria (*Mycobacterium tuberculosis*) and most commonly attacks the lungs. TB spreads through the air when people with pulmonary TB cough, sneeze or spit. Every year, 10 million people contract tuberculosis. Despite being a preventable and cured disease, 1.5 million people die from TB each year making TB the world's top infectious killer. [2]

Tuberculosis is a pulmonary infectious disease caused by *Mycobacterium tuberculosis*. Based on data released in 2020, WHO ranked Indonesia second in the world for most TB cases, after India (WHO,2020). [3]

TB in children occurs aged 0 - 14 years. In children, TB is one of the causes of death and pain. Globally, the number of TB cases in children and adolescents aged 0–14 increased from about 400,000 in 2015 to 523,000 in 2019. [2] In Indonesia the proportion of TB in children was 10.5% or about 63,111 cases in 2019. [4]

TB situation during the Covid Pandemic, based on tuberculosis information system (SITB) data as of July 16, 2020, during January – June 2020, the number of TB cases in Indonesia experienced a considerable downward trend, in January a total of 31,216 cases while in June 11,839 cases. Compared to 2019, the difference is also very noticeable. As in January, there was a difference in the number of cases of 21,957 cases. The President said that the current government's Covid-19 treatment model can also be applied in efforts to eliminate tuberculosis. Aggressive tracking models to find sufferers can be done to look for unreported tuberculosis sufferers. [5]

The dimension of pulmonary TB transmission in general in children is as a result of the contact of adult pulmonary TB people is greater or not as a cause (transmitting to the population). This happens because in children the condition of the disease is more often paucibacillary, very difficult to detect both with sputum examination, culture, and molecular tests. If the disease is undetected and untreated, the child will be at high risk of death. [6]

From the results of the study Ernirita et al, [7]. The results showed a significant association between contact history and nutritional status of tuberculosis in children in the Puskesmas area of Central Jakarta and East Jakarta. Children with a contact history will be at risk of tuberculosis 1.33 times, OR 1.33 (95% CI 0.95-1.693). and children with malnutrition were at 18.5 times greater risk of tuberculosis, OR 18.5 (95% CI 1,158-108.37). From the results of the

study Ernirita et al, [8] Statistical test results obtained a value of OR 4.44 , 95% CI (1.52 - 12.94) , with a p-value of 0.011 means there is an age relationship of children < 5 years with the incidence of Pulmonary TB in children.

Rusliana Apriliasari et al research, The results of the analysis for contact history variables showed a relationship with the incidence of pulmonary TB in children, this was indicated by a p value of 0.018 and an OR value of 3.143 (95% CI = 1,291 – 7,653), meaning that respondents who had a history of contact with adult pulmonary TB patients had a 3.1 times greater risk of being infected with pulmonary TB compared to respondents who did not have a history of contact with adult pulmonary TB patients. [9]

Marques et al research [10] explains tb disease in children if not treated immediately and treated properly will cause prolonged suffering and will usually develop in a worse direction e.g. tb milier and meningitis, and of course will inhibit the growth of the child . Therefore, it is necessary to make early detection of TB in children.

Hendrawati Research. S.et al [11] states Early screening and detection of tuberculosis should be encouraged in the community. During this time, a child will be known and diagnosed with tuberculosis only if the parents take their child to the Puskesmas, so early detection is more passive and sometimes too late. Teachers as the second closest person to the child have an important role in early detection of TB in children. The involvement of school teachers is important in the process of early detection and screening of tuberculosis in children. Approx. 52 (5.2%) students are suspected of tb through early detection programs provided to school teachers.

The purpose of this study is to find out "Analysis of Differences in Knowledge of Kindergarten Teachers Aisyiyah Early Detection of Tuberculosis Children in the middle of the Coronavirus Pandemic.

## **METHOD**

The design of this study is Quasi Experimental research with one group pre test post test design approach which is a sample group with the same subject but undergo different assessments between before and after treatment. This research was conducted with simulation and case exercises on child TB detection as well as video playback through online systems. This research was conducted from June to August 2020. The population is 79 teachers of Aisyiyah Kindergarten in DKI Jakarta. The sample is 50 people.

## **RESULT and DISCUSSION**

Educational activities, health runs relatively smoothly secure virtual using zooms meeting platform. Obstacles that occur due to signal interference in some participants, but do not hinder activities. The response of the participants was quite good, as seen from the discussion process that occurred in each material submitted.

The evaluation of participants was seen from the increase in pre-test and post-test scores. The number of participants who filled in the pre-test question as many as 79 people and the number of participants who filled out the post-test question as many as 63 people. However, there are some participants who only fill the pre-test or fill the post-test only, so the number of participants who fill the pre-test and also post-test as many as 50 participants.

The total number of participants was 79 teachers of Aisyiyah Kindergarten, 63.3% educated in S1 and the rest varied from high school to diploma III and 2.5% had a master's degree. The average age of participants was 43.1 years, the youngest age was 20 years and the oldest was 60 years. Average working time of 11.5 years and longest working for 40 years. In research obtained distribution of characteristics of Education, age, and length of work respondents can be seen in table 1 and table 2.

Table 1  
Distribution of Education participants in health education in the detection of child TB in Aisyiyah kindergarten teachers in DKI Jakarta

Education	Sum	Percentage
SMA	9	11,4
D1/D2	12	15,2
D3	6	7,6
S1	50	63,3
S2	2	2,5
Total	79	100,0

Table 2  
Distribution of Age and Duration characteristics of Health Education Participants in The Detection of Child TB in Aisyiyah Kindergarten Teachers in DKI Jakarta

Variable	Mean Median	SD	Minimal- Maximum
Age	43,1 45	9,52	20 – 60 years
Length of work	11,5 10,0	9,61	3 months– 40 years

The average value of knowledge of participants before health education activities was 57.78 and the average value of knowledge after health education activities was 72.02. There is a significant difference in the average knowledge value of health education participants before and after health education (value  $p=0.0001$ ) (table 3). Participants' ability in early detection of TB in children is carried out in simulation by providing cases to participants and evaluated the

success of participants in conducting early detection of TB cases in children in the community.

Table 3

Wilcoxon Signed Ranks T Statistical Test Results

Variable		Mean	SD	Different mean	P value
Knowledge	Before	57,78	12,6	14,24	0,0001
	After	72,02	16,4		

Primary data sources 2020

Education is an effort to persuasion or learning to the community so that the community will take actions to maintain and improve its health. Another theory states that health education is a learning experience designed to shape healthy behaviors [12] One of the healthy behaviors is early detection of TB in children.

TB detection in children is one of the prevention efforts that can be done by involving community participation, one of which is the teachers. Teacher involvement in early detection of child TB is an active family and community-based effort capable of identifying risk factors and contact history with adult TB sufferers [13]

The results of health education provided to teachers are able to improve the knowledge of kindergarten teachers about TB and able to improve the ability of teachers in early detection of children's TB cases with case simulations. Various studies have also shown that providing health education is able to increase knowledge in early detection of TB [14], also mentioning that teachers have an important role in early detection of TB in children. [11]

## CONCLUSION

This study concluded that there are differences in knowledge before and after education or health education about child TB detection. The average value of knowledge of participants before health education activities was 57.78 and the average value of knowledge after health education activities was 72.02. There is a difference that is different mean 14.24, and the value of P value = 0.0001.

This study suggests creating a resilient TB school program to detect and prevent tuberculosis transmission. this program seeks to provide an understanding of TB disease, the signs and symptoms of TB in general and in children, tb prevention, how to detect TB and tb treatment. Hopefully, TB disease can be eradicated early so as to create a resilient school in the face of TB

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