

Empowerment of Pesantren Communities in Tuberculosis Prevention Efforts through Educational and Participatory Approaches according to Potential Needs and Local Socio-Culture

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Abstract

Tuberculosis is still a public health problem in the world, including Indonesia. One of the focuses of interventions for controlling tuberculosis in high-risk populations is Islamic boarding schools. The purpose of this community service activity is to help people in Islamic boarding schools avoid TB transmission through an educational and participatory approach according to local potential and socio-cultural needs. The activities carried out were screening, environmental health assessment and education. The results of the screening activity showed that they had close contact with TB patients, had TB symptoms, and had TB risk factors, while the results of the environmental assessment showed that there were still many components in classrooms, bedrooms, mosques, and schools that did not meet health requirements. The results of the educational activity were that there was an increase in junior high school students' knowledge about tuberculosis with an average pre-test score of 52.97 and an average post-test score of 63.75. Participants were enthusiastic in participating in this activity with an attendance percentage of 88.89%. This activity has contributed to increasing junior high school students' knowledge about tuberculosis. Commitment and support from the entire community in the Islamic boarding school environment is needed in carrying out promotive and preventive activities, including routinely assessing environmental health conditions and independent TB screening.

Keywords: Community Empowerment; Islamic Boarding School; Tuberculosis Prevention.

1. Introduction

Tuberculosis remains a health problem globally and nationally. New cases of Tuberculosis disease globally continued to increase from 2010 to 2022. There will be 7.5 million new cases of Tuberculosis in the world by 2022. Not only that, in the same year it is known that this disease ranks as the second highest cause of death in the world with 1.3 million cases [1]. The estimated incidence of Tuberculosis in Indonesia is known to have continued to decline from 2010 to 2020 but has increased in 2021 to 969 thousand cases with 144 thousand of them experiencing death [2]. East Java is one of the provinces in Indonesia that has more than 17 thousand cases of pulmonary tuberculosis and Sumenep as one of the cities in East Java Province has the highest number of cases when compared to other cities in the Madura Island region, which is around more

than 2.2 thousand cases in 2022 [3]. The increasing number of cases and the high mortality rate due to tuberculosis require strategic countermeasures.

The target population of the Tuberculosis Control Programme in Indonesia in 2020-2024 is all people suspected of Tuberculosis. One of the foci of Tuberculosis disease control interventions in high-risk populations is boarding schools [4]. Pesantren or Islamic Boarding Schools are densely populated environments that are complex and prone to the spread of infectious diseases, including Tuberculosis. Tuberculosis disease is commonly found in the boarding school environment because the communal life of boarding schools (sanitation, bedding, hand washing, studying, and garbage disposal) has the potential to be a place for widespread and rapid transmission of the disease [5]. East Java is known to be one of the provinces that has a large number of pesantren. Information from the Ministry of Religious Affairs website shows that there are more than 4 thousand pesantren in East Java. The number of resident students is known to dominate (323,293) when compared to the number of students who do not reside (241,006) [6]. One of the boarding schools in East Java is Nasyrul Ulum Islamic Boarding School Sumenep. Based on the data obtained from the situational analysis, it is known that most of the students at the Nasyirul Ulum Islamic Boarding School live in the Islamic Boarding School, which is 55.2%.

Prevention efforts that can be done are to control and reduce risky behaviours such as close contact with sufferers, smoking behaviour, implementing clean and healthy living behaviour (PHBS), and maintaining environmental hygiene [7]. In addition, further consideration is needed regarding one room occupied by dozens of students with limited ventilation and environmental sanitation because the results of the study show that there is a relationship between lighting and humidity with the incidence of pulmonary TB [8]. Boarding schools in each region have different backgrounds, habits, levels of knowledge, and awareness of healthy living so educational approaches and methods are needed to adapt to the cultural characteristics and needs of boarding school students. Research conducted by Rohmah (2021) shows that efforts to prevent and overcome problems related to Tuberculosis disease can be carried out through community service, namely using participatory methods, where santri cadres are directly involved. This method can increase the ability or capacity of santri as health cadres. Community service in the implementation agenda is also carried out through counselling, training, and evaluation. The results of the community service showed that there was an increase in knowledge after the counselling. Santri are also known to be very active and enthusiastic in participating in these activities [9].

Based on the description above, community service activities are carried out which are a synergy of students, academics and the community in the Nasyrul Ulum Islamic Boarding School Sumenep. The purpose of community service activities is to help the community in the boarding school to avoid TB transmission through an educational and participatory approach according to potential needs and local socio-culture. The benefit of this activity is to prevent and control Tuberculosis disease in the Islamic Boarding School environment.

2. Methodology

The target of this community service activity is junior high school students at Nasyirul Ulum Islamic Boarding School Sumenep, totalling 144 students. The Community Service Team of the Faculty of Public Health Universitas Airlangga organised this activity in collaboration with Wiraraja University.

Community service activities consist of several stages, namely licensing and coordination, analysis

of the pesantren situation, and empowerment of the pesantren community. The activity began with the licensing process to the Head of the Nasyirul Ulum Islamic Boarding School. After that, a situation analysis of the pesantren was carried out so that potential and socio-cultural needs could be identified in the pesantren. At this stage, interviews were conducted (to managers, ustadz, and santri) and an assessment of the environmental health of the boarding school was carried out by making observations and measurements. The result of the situation analysis was the identification of potential and socio-cultural needs in the boarding school related to Tuberculosis transmission and control. The next step was to empower the pesantren community by training TB cadres for students who were expected to be able to screen symptoms and risk factors for pesantren residents by these cadres. Education and IEC activities were then conducted for boarding school residents to increase their knowledge about Tuberculosis.

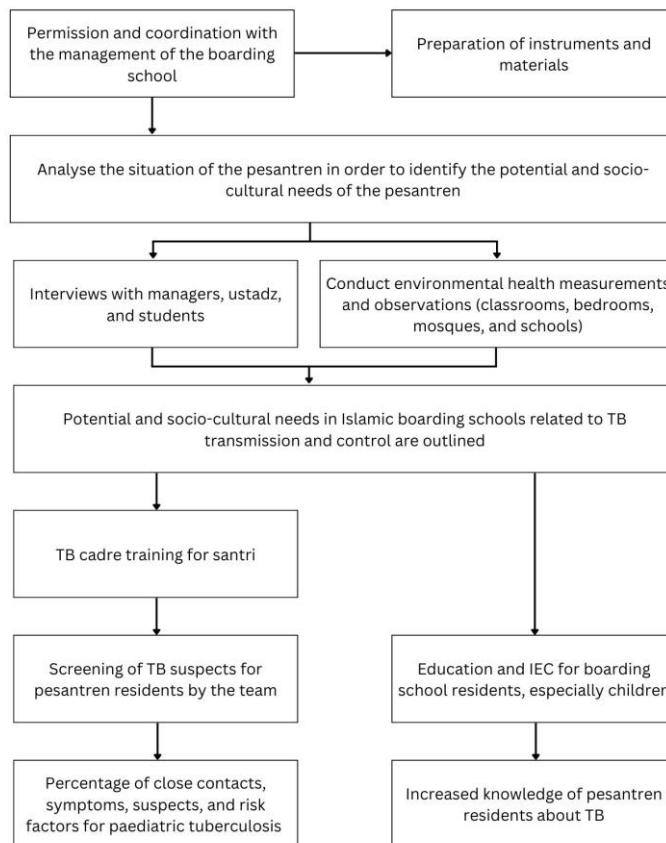


Figure 1. Stages of Community Service Implementation Activities

The pocket book in Figure 2 is an information media for TB cadres, ustadz and ustadzah, and santri.

This pocket book has illustrations that are tailored to the target audience, namely children to adolescents, the language used in this book is two, namely Indonesian and Madurese. The pocket book can be accessed through the following link <https://shorturl.at/xkiEa>. This community service activity is documented in video form. The video can be accessed via the following link <https://shorturl.at/phNL2>.



Figure 2. Tuberculosis Pocket Book

3. Findings

In community service activities targeting junior high school students at the Nasyirul Ulum Islamic Boarding School Sumenep, screening, assessment and observation of the boarding school's environmental health, and education were carried out. Training was also conducted for santri administrators to conduct independent environmental screening and assessment on 25 July 2024.

The results of screening conducted on 120 junior high school students who live in the Islamic boarding school (64%) and not living in the Islamic boarding school (56%) showed that those who did not live with TB patients were 1.8%, while those who lived in the Islamic boarding school and stated that there were TB patients in the Islamic boarding school were 7.8% and close contact with TB patients who were not at home was 8.3%. In addition, it is also known that they experienced symptoms such as coughing for more than 2 weeks (6.7%), fever for more than 2 weeks (5%), weight loss for 2 months (22.5%), weight loss for 2 months (5%), no appetite (5.8%), a lump in the neck/armpit (2.5%), and complained of dryness at night without cause (8.3%). Risk screening showed that they had close contact with TB patients (5.8%), had close contact with other lung disease patients (3.3%), had close contact with people coughing for more than 2 weeks (15%), had a smoking habit (8.3%), had tried smoking (26.7%), was frequently exposed to cigarette smoke (68.3%), suffered from diseases (cancer, corticosteroid treatment, dialysis, diabetes, and HIV) by 1.7%, was not immunised against BCG (12.5%), never had a BCG examination (98.3%), and had a history of TB treatment (0.8%).

Classroom and sleeping room assessment training was conducted for ustadz and ustadzah of the

pesantren with a total of eight participants. Each participant did the assessment practice, and the results of the environmental health assessment of classrooms and bedrooms are described in the following narrative:

Based on the self-assessment in the santri special classroom, the air quality of the room has met the healthy criteria because it does not smell and includes a smoke-free area. The condition of the classroom, roof, ceiling, walls, floor, and ventilation meet the healthy criteria. However, the condition of classroom cleanliness still does not meet the healthy criteria, there are no hand washing facilities in each classroom and also trash bins are not always available in the classroom. For the santriwati special area classrooms, the conditions are similar. Based on the self-assessment of the santri special sleeping area, the condition of the walls, floors, lighting, ventilation, and cleanliness of the sleeping room have met the healthy criteria. However, the sleeping area is less than 9m² per person, there is still the use of Asbestos hazardous chemicals on the ceiling of the room. There are no beds, so santri use mats or folding mattresses placed on the floor as sleeping mats. The sleeping area for santriwati has similar conditions, but the ventilation does not meet the healthy criteria because the air circulation is poor and humid due to santriwati drying clothes in the sleeping area.

The educational materials are 1) strengthening santri awareness in preventing TB in Islamic Boarding Schools and 2) culture in Madura which is a risk factor for TB. Education was held on 6 August 2024. Participants in the educational activities totalled 128 santris. Pre-test and post-test were given to participants to measure the knowledge of santri before and after being given education about TB. Educational materials were provided in the form of PowerPoint. The resource person emphasised that 'A strong/healthy believer is better and more loved by Allâh swt than a weak/sick believer' (HR Muslim) Not only that, a pocket book was also given as reading material for students and teachers (ustadz and ustadzah) at Pondok Pesantren Nasyirul Ulum Sumenep. The pocket book provides information about tuberculosis, how tuberculosis is transmitted, tuberculosis risk groups, symptoms of tuberculosis, tuberculosis examination, tuberculosis treatment, how to use a mask, and how to wash hands properly. This pocket book is also accompanied by hadith and jargon in Madurese to prevent Tuberculosis. The results showed that books using local languages can improve knowledge, attitudes, and skills of educational targets [10], [11].

The number of students is increasing every year. This condition causes the occupancy of the boarding school to be denser and can increase the risk of Tuberculosis (TB) disease transmission. Islamic boarding schools are known to have different backgrounds and habits as well as low knowledge and awareness about health [9]. Meanwhile, prevention of Tuberculosis disease in various efforts must continue to be carried out to break the chain of transmission [13].

Tuberculosis (TB) management has been regulated in Permenkes number 67 of 2016, which contains

risk control, one of which is health promotion as a prevention effort [12]. One of the risk factors for tuberculosis disease is low knowledge about the disease, so increasing promotive and preventive efforts through counselling is the right method to do as an effort to increase knowledge about the disease [14]. If the knowledge and understanding of Tuberculosis disease is good, the community can make prevention efforts independently [12]. Therefore, efforts to increase knowledge is the right step in preventing and controlling Tuberculosis.

Community Empowerment of Nasyirul Ulum Islamic Boarding School Sumenep in Tuberculosis prevention efforts is carried out through educative and participatory approaches that suit potential needs and local socio-culture. According to Sugiritama et al. (2021), education with the counselling method is carried out because students are very vulnerable to health problems at school and outside school. The counselling or lecture method can be well received by students. The students were very enthusiastic in listening to the presentation of material interspersed with questions and answers. The extension or lecture method, which is then followed by a question and answer session, is known to be effective in changing students' views on the importance of implementing health behaviour in the school environment and at home [15].



Figure 3. Educational activities for junior high school students at Nasyirul Ulum Islamic Boarding School Sumenep

The characteristics of junior high school students at Pondok Pesantren Nasyirul Ulum Sumenep in educational activities are mostly female (55.5%) and those from grade IX are more numerous when compared to other grade levels (38.9%).

Table 1. Distribution of Characteristics of Junior High School Students in Nasyirul Ulum Islamic

Boarding School Sumenep		
Variables	Frequency	Percentage (%)
Gender		
Female	71	55.5
Male	57	44.5
Total	128	100.0
Grade		
VII	44	34.4
VIII	35	27.3
IX	49	38.3
Total	128	100.0

The post-test sheet was given after the provision of educational materials to determine changes in the knowledge of junior high school students at the Nasyirul Ulum Islamic Boarding School Sumenep about Tuberculosis. The results of the pre-test and post-test showed an increase in the average knowledge between before and after education. The average pre-test score was 52.97 and the average post-test score was 63.75. This condition is similar to the results of research showing that providing education through PowerPoint with lecture methods can improve student knowledge [16]. Not only that, the results of community service activities for adolescent students on the transmission and prevention of pulmonary TB using PowerPoint media are known to increase knowledge after counselling [12]. If the knowledge value is categorised, the results are as follows.

Table 2. Distribution of Pre-Post Test Results of Junior High School Students at Nasyirul Ulum Islamic Boarding School Sumenep

Knowledge	Pre-Test		Post-Test	
	n	%	n	%
High	31	24,2	24	18,8
Medium	73	57	89	69,5
Low	24	18,8	15	11,7
Total	128	100,0	128	100,0

The categories in the table above use the average value (M) and standard deviation (SD) on the pre-test and post test scores. There are 3 categories, namely low ($X < M - 1SD$), medium ($M - 1SD \leq X < M + 1SD$) and high ($M + 1SD \leq X$) [17]. The pre-test category is low (< 27), medium (27 to < 79), and high (≥ 79). The post-test categories were low (< 37), medium (37 to < 91), and high (≥ 91). The materials used in the pre-test and

post-test evaluations to junior high school students at the Nasyrul Ulum Islamic Boarding School Sumenep on Tuberculosis are in table 3 below.

Table 3. Distribution of Pre-Test and Post-Test Answers about Tuberculosis among Junior High School Students in Nasyirul Ulum Islamic Boarding School Sumenep

Question Substance	Pre-Test		Post-Test	
	n	%	n	%
The following statements about TB are not true				
a. TB is also known as Tuberculosis/TBC	29	23,0	14	10,9
b. TB is an infectious disease	25	19,8	12	9,4
c. TB does not only affect the lungs	15	11,9	14	10,9
d. TB is a hereditary disease	57	45,2	88	68,8
TB germs can be transmitted through the following exceptions				
a. Exposure to saliva/sputum droplets	26	20,5	18	14,1
b. Talking too closely to people with TB	11	8,7	5	3,9
c. Sleeping in the same room with a TB patient with inadequate ventilation	20	15,7	15	11,7
d. Sitting next to a coughing person wearing a mask	70	55,1	90	70,3
Which age groups are at risk of developing severe TB				
a. Child age	49	39,5	52	40,6
b. Adult	25	20,2	25	19,5
c. Elderly age	18	14,5	19	14,8
d. All ages	32	25,8	30	23,4
The following are some of the common signs of TB in children				
a. Cough and fever for more than 2 weeks, decreased appetite, lethargy (not active in play/activity as usual)	79	64,8	82	64,1
b. Cough and fever for more than 2 weeks, increased appetite, lethargy (not active in play/activity as usual)	1	0,8	0	0
c. Cough and fever for more than 3 weeks, decreased appetite, lethargy (not active in play/activity as usual)	23	18,9	19	14,8
d. Cough and fever for more than 3 weeks, no weight gain within 2 months despite improved nutrition	19	15,6	27	21,1

Prevention of childhood TB can be done by				
a. Refusing BCG vaccination in infants	8	6,6	11	8,6
b. Adult TB patients treated up to halfway	18	14,8	11	8,6
c. Keeping the windows of the house closed and rarely opened	11	9,0	10	7,8
d. Keep the home and school environment clean	85	69,7	96	75,0

4. Conclusion

The results of the screening activities showed that they had close contact with TB patients, had TB symptoms, and had TB risk factors, while the results of the environmental assessment showed that there were still many components in classrooms, bedrooms, mosques, and schools that did not meet health requirements. Educational activities using lecture or counselling methods are known to increase the knowledge of junior high school students about Tuberculosis disease. Commitment and support from all managers, administrators, and communities in the boarding school environment are needed in implementing promotive and preventive activities. Participants were enthusiastic in participating in this activity which can be proven by the number of questions during the discussion session and the number of participants who answered correctly during the quiz session and the percentage of attendance which was 128 out of 144 junior high school students (88.89%).

The community health centre is expected to provide assistance to the boarding school on a regular basis related to Tuberculosis disease prevention efforts. Further community service activities are expected to be carried out monitoring and evaluation to administrators and students about the application of their increased knowledge in the form of behaviour to prevent Tuberculosis disease in the pesantren environment.

Acknowledgements

Thank you to the Faculty of Public Health Universitas Airlangga for providing RKAT funds for this activity. Community Service activities at Pondok Pesantren Nasyrul Ulum Sumenep were carried out by the Community Service team of the Faculty of Public Health, Universitas Airlangga in collaboration with the Community Service team from Wiraraja University as a partner in implementing activities. There is no conflict of interest with the parties involved in this community service activity.

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