

Empowering Community Health Workers in Tuberculosis Prevention Through Settlement Sanitation Improvement

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Abstract

Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. The purpose of this Community Service activity is to improve healthy houses and healthy settlements in the prevention of TB disease in the Lempuing and Sawah Lebar Baru Health Center areas. Based on the analysis of the situation above, the problems in the working area of the Lempuing and Sawah Lebar Baru Health Centers can be identified as follows: the high number of TB cases in the working area of the Lempuing and Sawah Lebar Baru Health Centers, the low knowledge about residential sanitation, the dangers and health impacts caused, the low knowledge about the dangers of TB disease transmission, the low level of knowledge about PHBS. This method of community service activities uses the method of community empowerment and community participation with a family nursing approach through problem recognition, deciding to take care of, take care of it, modify the environment and utilize health facilities. Evaluation of activities and monitoring is carried out formatively and summatively through the instruments that have been prepared. The results of the Wilcoxon Ranked Test statistical test showed a p value of 0.000 ($p \text{ value} \leq \alpha = 0.05$), meaning that there was an influence of knowledge and skills after community service.

Keywords: Community Service, Prevention, Environmental Sanitation, Tuberculosis

A. INTRODUCTION

Tuberculosis is an infectious disease caused by the *Mycobacterium tuberculosis* bacteria. Tuberculosis is spread through the air in the form of phlegm droplets when coughing or sneezing. According to Mandal et al. (2004), tuberculosis is the most common infectious disease in the world, with an estimated one-third of the population infected with tuberculosis and 2.5 million people dying each year. TB can affect all age groups and genders, and is starting to spread not only to low socioeconomic groups. The whole world shows that morbidity and mortality increase with age. According to the Indonesian Ministry of Health, (2016) globally, it is estimated that TB in the world occurs in developing countries and deaths in women due to TB are greater than deaths due to pregnancy, childbirth, and postpartum.

Transmission of this disease is due to contact with phlegm or inhalation of water droplets from sneezing or coughing from people infected with tuberculosis germs, children often get infections from adults around the house or when in public facilities such as public transportation, hospitals and from the environment around the house. Therefore, people in Indonesia need to be aware that if they are diagnosed with tuberculosis, be careful when interacting with others so as not to cough and spit carelessly and it is highly recommended to be willing to wear a mask or at least a handkerchief or tissue (Crofton, 2016).

According to the World Health Organization (WHO), Indonesia is the country with the third largest number of TB cases in the world, after China and India. WHO estimates that in

Indonesia there are 539,000 new cases of TB every year with deaths due to TB of around 101,000 people. TB is the third largest cause of death after cardiovascular and respiratory diseases, and is the number one largest disease in the group of infectious diseases (Izzati, 2018). TB cases mainly occur in the productive working age, namely the age group of 15 to 49 years which has an impact on human resources, so that it can disrupt the economy of families, communities and the country (Ministry of Health, 2017).

The Global Tuberculosis Report 2019 states that the world is not on track to achieve the END TB Strategy goal of 2020, which is to reduce TB by 20 percent from the number of cases in 2015-2018. However, between 2015 and 2018, Sawah Lebar Baru cumulative TB cases were only 6.3%. Likewise, in Sawah Lebar Baru the total number of deaths due to TB between 2015 and 2018 globally was 11%, which is less than a third of the target of 35 percent in 2020. The CDR achievement figure in Bengkulu Province from the estimated absolute tuberculosis incident based on modeling in 2020 of 3,929, the CDR of TB in Bengkulu Province is 42% and the coverage of tuberculosis case detection in children aged 0-14 years is 28%. This achievement is still very low when compared to the target of the Pulmonary TB control program (Bengkulu City Health Office, 2021).

In addition, the community considers this TB disease as a cursed disease so that people sometimes do not want to check themselves at the Health Center/Hospital, they prefer to take regular cough medicine or ignore it (Fewtre, 2019). It is hoped that with socialization to the community, the knowledge gained can change the community's paradigm regarding tuberculosis (Fahreza, 2018).

Community empowerment efforts for target groups (TB patients), health cadres and communities who are active and ready to work together to improve sanitation in settlements in the Lempuing Health Center work area. In addition, this effort is also expected to create conditions that lead to the realization of healthy homes in accordance with the Decree of the Minister of Health No. 829 of 1999, namely clean and healthy home conditions that guarantee health and provide comfort and peace for its residents and the community.

B. METHODS

The methods used in the implementation of community service in the Lempuing Health Center work area of Bengkulu City include:

1. Handing over physical assistance in the form of transparent zinc

The handover of physical assistance in the form of transparent zinc to TB patients, starting with a survey through medical records of TB cases at the Lempuing Health Center, Bengkulu City, and a survey of the location of the TB patient's house.

2. Training/Counseling (Lectures and discussions)

This method is used when delivering counseling materials about the dangers of TB disease and how it is transmitted, PHBS (Personal Hygiene for TB Patients) and CTPS delivered by resource persons from the Bengkulu Ministry of Health Polytechnic.

3. Practice

In improving skills for TB patients in the Lempuing Health Center area of Bengkulu City, this practice method is carried out both in the field and in the laboratory by inviting cadres in the activities carried out. The practice material provided is the practice of washing hands properly based on WHO.

The stages of activities carried out are:

1. Preparation

- a) Exploration to Lempuing Village and the health center.
- b) Direct exploration to the implementation location
- c) Coordinating with the parties related to the activity including health centers, villages, health cadres and community leaders.
- d) Preparation and development of instruments including preparation for making pre- and post-test instruments for cadres, teaching activity plans, educational materials.
- e) Socialization and signing of commitment to support community service activities for the Regional Partnership Program (PKW) in Lempuing Village.

2. Execution

a) Phase 1: Problem Identification

- 1) At this stage of recognizing the problem, the team will identify the problems faced by cadres, TB sufferers and the community related to the problem of TB spread. The identification process will also be carried out to determine the extent to which cadres have provided assistance to TB sufferers and their families in carrying out appropriate and appropriate prevention.
- 2) At this stage, the role of cadres will also be identified in efforts to improve TB education capabilities in the community.

b) Phase 2: Decision-Making

At this stage, a commitment will be signed for cadre empowerment activities in the prevention and treatment of TB in the community. The activity begins with the signing of the MoU and the management of PKW activity permits.

c) Phase 3: Empowerment Activities

To implement this empowerment activity, lecture, question and answer, discussion and practice methods are used. The lecture method is used at the beginning of the activity, where the speaker presents materials relevant to the guidance including materials that need to be known by the cadres. The discussion method will be used in order to provide an opportunity for cadres to express their experiences, opinions, problems, and efforts that have been made related to the guidance material so that all problems and obstacles faced so far and during guidance can be resolved.

d) Phase 4: Environment Modification

The next step is to provide guidance to families and TB sufferers. The guidance steps are:

- 1) Understanding and skills of TB sufferers and families can be improved by providing prevention with personal hygiene and environmental cleanliness.
- 2) Specifically, this activity will train TB sufferers and families independently to prevent TB transmission.

e) Monitoring and Evaluation

Surveys and observations during and after sessions.

C. RESULTS

The implementation of the activity took place from May to June 2024, which began with an exploration activity to the Lempuing and Sawah Lebar Baru sub-districts of Bengkulu City in May 2024. Based on the results of the exploration, it was found that Lempuing Sub-district had 20 cadres and Sawah Lebar Baru Sub-district had 20 cadres. This Community Service was carried out at the Cadre's house in the Lempuing and Sawah Lebar Baru areas. To see the influence between the independent variables of increasing children's knowledge and behavior with the dependent variable (efforts to improve TB prevention and treatment), data collection used a Knowledge and Skills Questionnaire sheet.

This activity was attended by 40 participants according to the initial target. Participants were always present at every stage of the activity held. This activity was also strongly supported by the Head of Lempuing and Sawah Lebar Baru Villages of Bengkulu City.

Tabel 1. Overview of Average Knowledge and Skills

No	Variables	Mean	SD	Min-Max	CI
1.	Pre test knowledge	61.88	6.858	45-70	59.68-64.07
	Post test knowledge	94.88	4.998	85-100	93.28-96.47
2.	Pre test Skills	31.23	5.308	25-42	29.53-32.92
	Post test Skills	86.75	5.669	70-100	84.94-88.56

Table 1. shows that the average value of knowledge and skills towards the TB prevention program through improving residential sanitation before was 61.88 and after was 94.88. The average value of skills before training was 31.23 and after was 86.75. This community service illustrates that skills before the intervention were on average at 31.23. The value of skills about healthy homes and healthy settlements in preventing TB before the intervention was in the less category. In line with the research of Anisa et al., (2022), the results of the study showed that the skills of respondents before providing health education using the simulation method were less skilled, as many as 60 respondents (100%). After being given the intervention, the average skill value became 86.75. The action value after this intervention was still in the good category. This is in line with the results of research from Fitriah et al., (2023) after health education was carried out with simulation showed changes in skills. The results of the study by Anisa et al., (2022), it was found that the skills of respondents after being given health education using the simulation method were skilled with 55 respondents (91.7%).

Table 2. Effect of Knowledge and Skills Training

No.	Variable	N	Mean (Min-Max)	P Value
1.	Pre test knowledge	40	61.88(45-70)	0.000
	Post test knowledge		94.88(85-100)	
2.	Pre test Skills	40	31.23(25-42)	0.000
	Post test Skills		86.75(70-100)	

Table 2 above shows the results of statistical analysis using the Wilcoxon Signed Rank Test showing a p value of $0.000 < \alpha 0.05$, which means that there is an influence of knowledge and skills on the pulmonary TB prevention program through improving residential sanitation in Lempuing and Sawah Lebar Baru Villages. The intervention carried out in this community service is through counseling and simulation. One of the factors that can influence a person's skills in improving healthy homes and healthy settlements in preventing TB is the level of knowledge.

D. CONCLUSION

This community service initiative effectively enhanced the knowledge and competencies of community health workers in TB prevention through sanitation and healthy housing practices in Bengkulu. Continued support and integration with local health systems are recommended to ensure sustainability and community-wide impact.

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