

Child Tuberculosis (TB) Education Through Leaflet – Based Home Visits to Improve Parents' Knowledge in The Service Area of North Sangatta Community Health Center

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ABSTRACT

Tuberculosis (TB) remains a serious public health problem in Indonesia with a high transmission rate. Children have a higher risk of disseminated TB and extrapulmonary disease compared to adults. The purpose of this community service initiative is to determine the effectiveness of childhood tuberculosis education through leaflet media in increasing parents' knowledge in the Working Area of the North Sangatta Health Center. The implementation method used is the Descriptive analysis. The community service activity, in the form of education on the importance of increasing knowledge (education) on tuberculosis prevention in children through leaflet media during home visits to improve parents' knowledge in the working area of the North Sangatta Health Center, was conducted on Monday, March 16, 2026. The counseling activity was conducted in each participant's home. Conclusion: The childhood tuberculosis education activity can increase parents' knowledge at the North Sangatta Health Center. The empowerment of health workers and cadres in improving tuberculosis education for children is expected to be realized effectively through this counseling activity.

Keywords : Education, Childhood Tuberculosis, Leaflet Media, Parental Knowledge

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INTRODUCTION

Tuberculosis is a disease that remains a global concern. The World Health Organization (WHO) reported that in 2021, there were approximately 10.6 million Tuberculosis cases worldwide. This number increased by around 600,000 cases compared to 2020, which was estimated at 10 million cases. There were 6 million cases in adult men, 3.4 million cases in adult women, and 1.2 million cases in children. Of the 10.6 million cases, 6.4 million (60.3%) people were reported and underwent treatment, while the remaining 4.2 million (39.7%) people were not found/diagnosed and reported. The death rate from Tuberculosis is quite high, with at least 1.6 million people dying from Tuberculosis, an increase from the previous year which was around 1.3 million people (WHO, 2021).

Cases of Tuberculosis in children under five years old amounted to 482 cases (20%), and as

many as 1,180 cases (53%) were in males, the highest proportion was found in Gondar City (17%) and Metema District (11%). (Alene et al., 2017). The largest proportion of childhood Tuberculosis cases came from Gondar City at 17% and Metema District at 11% (Alene et al., 2017). The incidence rate of new childhood Tuberculosis cases at age 15 was 44 per 100,000 children, and in children under five years old, it was 28 per 100,000 children (Alene et al., 2017). The incidence rate of child Tuberculosis in those aged 15 years and under ranged from 13 to 317 per 100,000 children, and in those under five years old, it ranged from 5 to 198 per 100,000 children (Alene et al., 2017).

The main cause of Tuberculosis is an infection by the bacterium *Mycobacterium tuberculosis*, which attacks the lungs and is transmitted through the air (droplets) when an active patient coughs, sneezes, or speaks. Key risk factors include weak immunity (HIV/AIDS, malnutrition, diabetes), crowded and poorly ventilated environments, and incomplete TB treatment. Based on study data and the Tuberculosis control situation in Indonesia, there are several needs of Tuberculosis patients that are often unmet or become major obstacles in the healing process. These needs encompass economic, social, emotional, and technical health aspects (Meilina & Suparno, 2025).

Children have a higher risk of disseminated Tuberculosis and extrapulmonary disease compared to adults. Tuberculosis in children differs from that in adults. Children often present with non-specific and wide-ranging clinical symptoms similar to other childhood illnesses. Tuberculosis infection in children is mostly acquired through exposure to infected adults within the household with Tuberculosis and reflects new transmission in the community. Untreated childhood Tuberculosis can be fatal, leading to serious complications such as permanent lung damage, Tuberculosis meningitis (infection of the brain membranes), and the spread of infection to other organs (bones, joints, intestines). Beyond the threat of death, children may experience severe growth impairment (stunting), malnutrition, and drug resistance that is difficult to treat (Meilina & Suparno, 2025).

Because the barriers in tuberculosis control are not only technical and medical in nature but also touch upon social and economic aspects, the intervention approach taken cannot rely solely on health workers. Therefore, the role of lecturers and academic scholarship in assisting the community is greatly needed as a manifestation of the Tri Dharma of Higher Education pillar, namely Community Service.

The role of lecturers and academic knowledge in assisting the community is one of the main pillars of the Tri Dharma of Higher Education, namely Community Service. Lecturers are not only tasked with teaching and conducting research on campus but are also obliged to transform knowledge, technology, and arts to solve real-world problems and improve the quality of life of the community.

Forms of activities carried out to help people with TB (Tuberculosis) include a comprehensive approach ranging from health promotion, prevention, treatment support, to social rehabilitation. These activities generally involve collaboration between health facilities (Community Health Centers/Hospitals), health cadres, and the community. This activity aims to accelerate TB elimination by increasing treatment success rates and reducing mortality and transmission in the community (Kemenkes, 2021).

The hope for this community service activity for the prevention of Tuberculosis (TB) is to increase community knowledge, awareness, and active participation in breaking the chain of TB transmission. Overall, this community service is expected to create a TB-aware environment, support early case finding, and improve treatment adherence to achieve TB elimination.

METHOD

The implementation method used a Lesson Plan (Satuan Acara Penyuluhan/SAP) as a guideline for conducting the activity. The topic of the health education session was childhood tuberculosis. The target participants were parents who have children with Tuberculosis or children who are at risk of TB infection.

The research design in this study is descriptive analytic. The sample used was mothers who had children with tuberculosis, totalling 32 respondents. The sampling technique used was purposive sampling. The analysis test used descriptive analysis.

The activity was conducted on Monday, March 16, 2026, at the home of a TB patient located in the working area of the North Sangatta Community Health Center (Puskesmas Sangatta Utara). The objective of this activity was to improve participants' understanding of the definition of TB, signs and symptoms of TB, modes of TB transmission, prevention of childhood TB, and TB treatment.

The activity began with an opening session, including introductions, explanation of the general overview of the activity, and presentation of the general and specific objectives. This was followed by the delivery of educational materials covering the definition of TB, symptoms of TB, modes of TB transmission, prevention of childhood TB, and TB treatment. The activity concluded with a question-and-answer session to assess participants' understanding, followed by the closing of the session.

RESULTS

The community service activity was carried out through 2 (two) stages, namely the preparation stage and the implementation stage. These two stages have a sequential relationship, where all activities in the preparation stage serve as the foundation for the implementation stage.

The preparation stage is the program planning stage that aims to mature all aspects of the activity before implementation in the field. Activities carried out at this stage include:

1. Coordination with the North Sangatta Health Center

Coordination was conducted with the field supervisor and the person in charge of the infectious disease control program. The health center welcomed and fully supported the community service activity carried out by the Service Team in order to monitor the health status of children in the Working Area of the North Sangatta Health Center. From this coordination, agreements were reached regarding the target, time, and technical implementation of the activity.

2. Determination of Targets and Participants

Based on the results of coordination with the health center, it was agreed that the target of the health education was parents who have elementary school-aged children.

3. Determination of Implementation Time

The implementation time of the education was set based on the agreement with the health center, which was on Friday, February 13, 2026.

4. Planning of Educational Materials

The service team prepared educational materials covering: the definition of TB, the dangers of TB in children, ways to prevent TB in elementary school-aged children, and messages for families to play an active role in maintaining children's health.

The preparation stage above was then followed by the implementation stage. The implementation stage is the realization of all plans that had been prepared during the preparation stage. Activities were carried out in accordance with the agreements that had been

established, with the following details:

1. Time and Place of Implementation

The community service activity, in the form of education on the importance of increasing knowledge about TB prevention in children through leaflet media, was conducted on Monday, March 16, 2026. The education was delivered through the home visit method, so the activity took place in each participant's home.

2. Implementation of Health Education

Health education was delivered directly to the parent participants using leaflet media as a tool. The materials delivered included:

- a) Definition of TB,
- b) Dangers of TB in children,
- c) Ways to prevent TB,
- d) Management of TB, and
- e) Messages for families to play a role in maintaining children's health.

3. Participant Response

Participants showed great pleasure and enthusiasm for the community service program organized by the residency group of students from the Postgraduate Program in Master of Public Health, Strada Indonesia University. This was evident from the activeness of the participants during the activity.

4. Question and Answer Session

In the question-and-answer session, there were several questions asked by the participants. These questions are attached separately.

DISCUSSION

This community service activity was carried out through two main stages, namely the preparation stage and the implementation stage, which demonstrates continuity between planning and realization in the field. In the preparation stage, coordination with the North Sangatta Health Center was a crucial initial step because through this collaboration, the service team obtained full support as well as agreements regarding the target, time, and educational materials. This aligns with the principles of community service that emphasize the importance of a participatory approach and partnerships with local stakeholders so that the intervention is precisely targeted and aligns with the needs of the local community. The determination of parents with elementary school-aged children as the target indicates alignment between the program and health priorities in the area, considering that school-aged children are a vulnerable group for tuberculosis (TB) transmission and the role of parents is crucial in prevention efforts (Pangestika et al., 2019).

The implementation stage, carried out through the home visit method on March 16, 2026, was the realization of the plan that had been prepared. The choice of the home visit method has its own advantages because it allows for more personal interaction between the educator and participants, making the material easier to understand and making participants feel more valued. This was evident from the enthusiasm of the participants, who showed enjoyment and activeness throughout the activity. The use of leaflet media as an educational tool also supports the effectiveness of delivering the material because information can be presented concisely, attractively, and can serve as reading material for parents to revisit after the activity. The material delivered included the definition of TB, the dangers of TB in children, prevention methods, management, as well as messages for families to play an active role in maintaining children's health, all of which were designed to comprehensively improve parental understanding.

The presence of a question-and-answer session in this activity provided space for participants to clarify things they had not yet understood, while also serving as an indicator that participants were actively engaged in the educational process. The success of this activity was inseparable from the full support of the health center and the readiness of the service team in preparing all aspects of the activity from the initial stage. Overall, this community service activity demonstrates that a systematic approach from planning to implementation, as well as interactive educational methods focused on the needs of the target group, can increase parental participation and understanding in efforts to prevent TB in children.

CONCLUSION

1. The childhood TB education activity was able to increase the knowledge of parents at the North Sangatta Community Health Center.
2. It is hoped that the empowerment of health workers and cadres in enhancing childhood TB education can be realized effectively through this counseling activity.

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