Family Participation To Modify Home Environment of Pulmonary Tuberculosis Patients in Sikumana Health Center, Kupang City, East Nusa Tenggara Province 2017

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Abstract

Background. TB disease is a public health problem in the world and in Indonesia. The environment is one of the factors that determine the degree of public health. This study aims to determine family participation in modifying the home environment of TB patients includes families participated in maintaining the cleanliness of the home environment, participated in providing adequate ventilation, participated in providing adequate home lighting and participated in maintaining the cleanliness of the floor. Method. This research was conducted at Sikumana Health Center, Kupang City, East Nusa Tenggara Province. The type of research is a survey, cross-sectional design. The number of samples is 30 families. The study variable is family participation in modifying the home environment. Data are collected by interview using a questionnaire. Sample collection using purposive sampling technique. Data are analyzed and presented descriptively in tables and pie charts. Results. The result of this study shown 67% of families participated in maintaining the cleanliness of the home environment, 83% participated in providing adequate ventilation, 53% participated in providing adequate home lighting and 67% participated in maintaining the cleanliness of the floor. Conclusion. most of the participants had a role in modifying the home environment of pulmonary TB patients, but some participants did not participate well. Need to increase knowledge to increase participation.

Keywords: Participation, Family, Environment, Home, Tuberculosis
INTRODUCTION

Tuberculosis (TB) up to now is still one of the health problems of the people in the world even though TB prevention efforts have been implemented in many countries since 1995. According to the WHO report in 2015, at the global level it is estimated that 9.6 million new TB cases with 3.2 million cases are women. With 1.5 million deaths due to TB where 480,000 cases are women. Of the TB cases found 1.1 million (12%) HIV positive with the deaths of 320,000 people (140,000 people are women) and 480,000 TB Drug Resistance (TB-RO) with the death of 190,000 people. Of the 9.6 million new TB cases, an estimated 1 million TB cases are children (under the age of 15) and 140,000 deaths / year.

The number of TB cases in Indonesia according to the 2015 WHO report, there are an estimated 1 million new TB cases per year (399 per 100,000 population) with 100,000 deaths per year (41 per 100,000 population). An estimated 65,000 cases of HIV positive TB (25 per 100,000 population). Case Notification Rate (CNR) of all cases was reported to be 129 per 100,000 population. The total number of 324,539 cases, including 314,965 were new cases. Nationally estimated HIV prevalence among TB patients is estimated at 6.2%. The number of RO-TB cases is estimated as many as 6700 cases from 1.9% of TBRO cases from new TB cases and there are 12% of TB-RO cases from TB with re-treatment.

TB in Indonesia is still difficult to control because the disease has a social and economic dimension. Tuberculosis is related to poverty and population density. In densely populated and poor areas usually settlements are tight and do not meet the requirements of a healthy home. The public awareness of family duties for health care for TB patients is still low. one of the family functions to maintain the health condition of family members in order to have high productivity, one of which is by modifying a comfortable home environment for TB patients.

Environment is one of the important factors that determine the health status of the community. the environment must be considered: TB cases in Indonesia it still exists even
though success in treatment begins to increase. This is due to the lack of family involvement / participation in modifying the home environment so that the disease can be completely cured, no relapse or can cause death. This study aims to determine family participation in modifying a healthy and comfortable environment for TB sufferers.

METHODS
This type of research is a survey study with a cross-sectional study design.

Population and sample
The population of this study were families of TB patients who living in the Sikumana Community Health Center working area with the number of TB patients in January - December 2016 totaling 48 cases including 30 cases with positive smear, 10 cases of negative smear and 8 cases with extra lung. Sample collection using purposive sampling technique. The sample of this study was 30 families who meet certain requirements, including patients who are still stated positive, willing to be participants.

Time and place
The study was conducted in July-October 2017 in the working area of the Sikumana Health Center, Kupang, East Nusa Tenggara, Indonesia.

Variables
The research variables are family participation in modifying the environment includes families participated in maintaining the cleanliness of the home environment, participated in providing adequate ventilation, participated in providing adequate home lighting and participated in maintaining the cleanliness of the floor.

Instrument
Instruments used in this study using questionnaire sheets.

Data Analysis
Data were analyzed descriptively, namely calculating the number and percentage of answers according to the and presented descriptively in tables and pie charts.
RESULTS AND DISCUSSION

This study was conducted at the Sikumana Health Center in Kupang City, East Nusa Tenggara. The number of respondents who meet the criteria is as many as 30 people. Data was collected using the survey method using a questionnaire.

Characteristics of Respondents

<table>
<thead>
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<th>Characteristics</th>
<th>Groups</th>
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<th>%</th>
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<tbody>
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<td>Age</td>
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<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td></td>
<td>&gt; 40</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>Employment</td>
<td>Farmers/laborers</td>
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<td>10</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>PNS</td>
<td>8</td>
<td>26.7</td>
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<tr>
<td>Education</td>
<td>No school</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td></td>
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<td>9</td>
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<td>3</td>
</tr>
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</table>

The percentage of participants under 40 years and over 40 years is not too different. Most participants work in the private sector. The majority of junior high school education participants are below.

The cleanliness of the home environment

The environment is one of the factors that influence the health status of the community. A clean environment can support the healing process of the disease and prevent transmission of the disease. Likewise, the success of treatment and treatment of TB patients is strongly influenced by the environment. The family has a very important role. The results showed that families of TB patients participated in maintaining the home environment to remain clean and healthy for TB patients (67%).
One of the family functions is the function of health care or maintenance, namely maintaining the health of family members in order to maintain high productivity. Related to this, what can be done by the family, one of which is always to maintain the cleanliness of the home environment. For people with TB, a clean environment strongly supports the healing process and prevents the emergence of other diseases. When the patient is diagnosed with TB, the family should have started thinking and acting to make environmental modifications. Attention to a clean and healthy environment is an important point for families in addition to treatment and care. However, in the Murinin District showed that there were no differences in physical characteristics of houses in TB patients and non-TB homes. Many home sanitation facilities do not meet the requirements.

A person’s participation can be influenced by many factors, including the level of education and knowledge. The study showed that people with a high education had more knowledge of TB in comparison to illiterate people. Income levels and types of work may affect people in taking actions related to disease prevention. The study in Beijing region suggested that socio-economic predictors influence TB incidence.
**Good ventilation**

Ventilation is very important to guarantee air exchange in the house, so that the availability of clean air can be met. The results showed that the family already had a house that had adequate ventilation for the circulation process for TB patients (83%).

![Figure 2. Participation in Providing Ventilation](chart.png)

The area of ventilation should be in accordance with the area of the room in the house. The wider the house, the more extensive ventilation is also needed. Ventilation that does not meet the requirements causes air quality in the house to not meet the requirements and cause health problems, especially diseases related to the respiratory tract including tuberculosis.

Various studies have shown that the spread of TB is related to environmental risk factors, one of which is indoor air pollution\(^5\). Several studies in South Korea have suggested that water pollution is a risk factor for respiratory infection, especially TB. Previous studies linked smoking and indoor or outdoor water pollution with elevated risk for TB\(^4\). Thus it is very important to maintain air quality inside the house by providing ventilation that meets health requirements.

**Home lighting**

Enough lighting can support home residents to do all the activities well. Lighting that does not meet the requirements causes the occupants to be unable to move comfortably and can cause fatigue, accidents or health problems. The results showed that some
families already had homes with adequate lighting for TB sufferers (53%), but there were still many who did not have lighting that met the requirements.

![Figure 3. Participation in Providing Lighting](image)

The condition of the room in the house must be bright enough. Lighting sources can be sourced from nature (sunlight) and artificial lighting sources. Sunlight is one of the factors that can kill germs. This if the lighting in the house is adequate, transmission and proliferation of germs can be prevented. Many types of bacteria can be turned off if the bacteria get direct sunlight, as well as tuberculosis bacteria can die due to ultraviolet light from sunlight entering the room.

Various diseases caused by various types of pathogenic bacteria can be transmitted by air. Sunlight and natural ventilation play a role in controlling disease infections. When making a house it is necessary to consider building construction that allows morning sunlight to enter the house.

**Floor cleanliness**

Floor cleanliness is one of the parameters of a healthy home. A healthy home certainly supports its residents to live comfortably and healthily. The results showed that some families had participated in keeping the floor clean / not dusty (67%).
The results of the study show that not all families make maximum environmental modifications. This can affect the health of all family members, the risk of transmission can occur to other family members. Family involvement to modify the environment needs to be supported by several important factors including family knowledge about the resources owned around the home environment, knowledge of the importance of environmental sanitation and its benefits, and togetherness in improving and maintaining a home environment that supports health.

This knowledge can relate to the level of education of respondents. The results of interviews with participants revealed that most of them had junior high school education and below, some even did not attend school. This condition allows that not all participants have sufficient knowledge. Other studies have shown that the majority who had never been to school were negative or TB, compared with those who had obtained at least primary education. However, the number of positive cases decreased as the level of education increased from primary to secondary level.

The low socioeconomic level of the community may also have an influence on the problem of participation related to TB prevention. The problem of tuberculosis in the urban poor settlements of the Philippines is substantial. This is also related to the sanitation burden. The limited ability of the community to provide sanitation facilities may hamper the recovery process from illness.
CLOSING

Most families participate in modifying a healthy and comfortable environment for TB sufferers by maintaining the cleanliness of the home environment, providing adequate ventilation and lighting, and maintaining the cleanliness of the house floor. However, there are still those who have not participated well. Increased knowledge of families of TB patients and supervision of the condition of the home environment of TB patients to support the healing process and prevent transmission.

REFERENCES


