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# Community-based Management and Control of Tuberculosis in Sub-urban Surabaya, Indonesia: A Qualitative Study

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**Abstract**

**BACKGROUND:** Tuberculosis (TB) is major community health problem in Indonesia. The World Health Organization report in 2017 shows that 6.4 million new TB cases were officially notified to national authorities, worldwide. Indonesia has 842,0000 cases and places it as the country with the third highest number in the world. The national program Directly Observed treatment, short-course started since 2014 has not able to handle TB cases comprehensively. Communities have important role in TB management.

**AIM:** The aim of this study was to explore the existed condition of TB management and control.

**METHODS:** A descriptive qualitative study was conducted in Tandes Sub-district, which is an endemic area for TB and has the highest incident in Surabaya. Semi-structured interview was conducted to 13 participants who consist of sub-urban TB task force, community health volunteer, Community Health Nurses, and sub-district officer.

**RESULTS:** Result reveal six themes: Altruism as intentional caring factor, in adequate number of staff, the need to improve training skill, insufficient of resources, limited of financial support, and social support.

**CONCLUSION:** To be effective program, community-based TB management need to be improve in the availability of budget, staff, training, and resources while maintaining the ongoing work of TB task force team. Community-based TB program is one of the activities whose efficiency was reliable for handling TB.

## Introduction

The World Health Organization (WHO) states that tuberculosis (TB) is a global emergency problem for humanity and an important problem in various countries around the world. In Indonesia, although the Directly Observed Treatment Short course (DOTS) strategy has proven to be very effective for TB control, the burden of TB in the community is still high. This is because the implementation of the DOTS strategy and programs for handling TB in its application still has challenges and problems in the community [1], [2]. The main obstacle is the failure to mobilize all community capacities, involving community members to participate, and unclear forms of contributions and who should be involved in TB handling program activities that affect the sustainability and effectiveness of the program [3].

East Java Province is one of the provinces in Indonesia which still has problems in tackling TB with a prevalence of 110 per 100,000 population. In Surabaya 16,616 people were suspected of TB and 2330 people were TB positive. Based on data from the Surabaya Health Office 2017, the highest prevalence of TB was in Tandes Sub-district with 551 people suspected TB and 114 people found with TB positive [4]. In 2016, there were 109 new TB, with a total number of 170 TB patients and a success rate of 88.64% [4].

Modern society is more likely to solve problems independently through various technological advancements that exist. Individual attitudes and feeling capable of solving problems independently can have an effect on the awareness to live in society as a result is the value in society to help each other, mutual cooperation, and others diminish, depicted by various individual actions that do not lead to a collective goal but lead to a destination according to the individual's wishes. Coleman explained in his ideas about individual actions influenced by the value of an event that individuals will act based on the interests and benefits obtained from each individual [5]. If this condition is associated with handling TB cases, it can slow down the handling of cases [6]. If the ability of social management is understood as a social ability in forming a nursing care by optimizing the health service system based on the culture of individuals, groups, families, and communities, investment in community-based management is a useful strategy for increasing community nursing care to treat TB [7].

Community-based TB management is believed to be able to increase the capacity of the community

to work together in solving health problems because the basis of management can be characterized in the form of individual willingness to prioritize community decisions in resolving health problems. In this case, TB cases are a top priority for community diseases that must be immediately sought and resolved so that they do not spread to other residents also as a form of preventive action in priority for social and cultural effects. Citizens who are in a community with good community management will form a cohesivity which is interpreted by the existence of horizontal cooperation and norms of reciprocity because they will also have high confidence, to collaborate or cooperate and help each other [8].

This study aims to reveal how the community is making efforts to manage TB with all their ability and resources in their place.

## Methods

### *Design*

A qualitative descriptive study was conducted in Tandes, the sub-district with the highest incidence of TB in Surabaya [9].

### *Participants*

The participants of this study were selected using purposive sampling method including; one official heads of villages, four director of the community welfare and safety sub-district office, two community nurses who worked at the local public health center, and six community health volunteers.

### *Data collection*

Data were collected from January to May 2017 in Tandes, which has an especially high prevalence of TB. A total of 104 cases of TB were reported in 2016. The semi-structured interview questions focused on the influence of Community Based Management on TB prevention and control and related experiences. The interviews focused on the participants existence, role, experience, and connection to the community within TB prevention and control activities. The interview lasts 45–60 min for 1 time data retrieval. The community health workers were interviewed in their homes, and the sub-district officer and the community nurses were interviewed in their workplace to provide them with comfort and convenience. All interviews were recorded and transcribed for data analysis.

### *Data analysis*

Interview data were analyzed using Flick *et al.* [10]. The practical steps of analyzing and representing interview data were performed. Data analysis began with (1) reducing data to locate and examine phenomena of interest. In this phase, the interviews were transcribed, and then the data were read and reread. The next phase was (2) reorganizing, classifying, and categorizing data, in which the researchers generated assertions about topics by reassembling and reorganizing the data, codes, categories, and stories. The last phase was (3) interpreting and writing up findings. In this phase, the researcher considered assertions and propositions in light of prior research and theory to develop arguments. Researchers developed stories that conveyed the main idea developed in the data analysis and presented data excerpts or stories to support assertions. The stories were sorted to examine the existence of community based management on TB prevention and control.

### *Ethical considerations*

Ethical approval to conduct this study was granted by the Institutional Review Board Ethical Committee of Airlangga University No. 630-KEPK, the Regional Department of Health (Surabaya, Indonesia), and the Regional Department of National Unity, Politics, and Public Protection (Surabaya, Indonesia). All participants were provided with a participant information sheet written in Bahasa Indonesia, and they signed the consent form before participating in the study.

## Results

Tandes is a sub-district in a suburban geographical area and has the fifth largest area and highest population density in southern Surabaya. Tandes is located approximately 4 m above sea level. The overall site area is approximately 11.07 $km^2$ and is divided into six villages, with a total population of 93.459. Below is the themes found from data analysis.

### *Altruism as intentional caring factor*

One of the forms of community based management, which plays an important role in the efforts to eradicate TB, is volounteer. In the Tandes sub-district, six volounteers worked in the two primary health centers (PHCs). The volounteers were responsible for the entire TB prevention and control program in the region and implemented it in their own PHCs. In overcoming health problems, especially TB, at the government level, there is an institution called the TB Task Force and for non-government TB elimination programs carried out by the Aisyiyah Organization. Both work together with puskesmas in conducting TB elimination programs. Social awareness is their basic foundation in working to reduce TB problems.

They said, *"we want life to be beneficial for others. The rest is so important that sincerity and maintaining sincerity are difficult.( P1)*

*We are also happy if we come to the patient then the patient according to that, the patient is happy, we are also happy. Also the name of humans must be beneficial to others too. (P2)*

*When I saw the patient not recovering and then broke up the medication, I felt unsuccessful in carrying out my duties, I felt sorry for why I could not make the person recover (P3).*

### *Inadequate number of staff*

The problem of TB requires complex management involving all elements of the community and requires evaluation of successful treatment for quite a long time. Treatment is complete for 6 months and the ease of transmission of the disease, requires TB observers to carry out monitoring, mentoring, and reporting that are really serious. The large number of TB elimination programs is not balanced with the needs of existing labor or human resources.

The Nurse said, *"yes actually it is lacking, because every RT must have counseling every RW must also have counseling, that is the target, I think it is still not able" (P5).*

*"in the field the program was not adjusted to the staff at the puskesmas, actually if it was only TB being finished 1 day it was not finished, we also doubled here and there so I did it" (P4).*

*"firstly there was a shortage of cadres, then the work was not maximal, and I did not even curative this puskesmas, whereas this health center should have more promotive and preventive activities" (PKM nurse).*

The director of the sub-district community and safety office said, *"Yes, from those cadres, there were many who doubled this number, they also worked on PKK, while PKBM also worked on one working group, one PKK cadre" (P10).*

*"The obstacle is there are no more people to be the people, that's all, looking for it is difficult, bro. Wong, the chairman of his defense cadre, is also old. So it's a bit less maximal but we try as much as possible mas" (P13).*

*"The Voulunteers Said, "I was wrong because the officers were only one P1 (TB Cadre). only one officer might not be able to all" (P1).*

### *The need to improve training skill*

The problem of TB requires complex management involving all elements of the community and requires evaluation of successful treatment for quite a long time. Treatment is complete for 6 months and the ease of transmission of the disease, requires TB observers to carry out monitoring, mentoring, and reporting that are really serious. The number of TB programs must also be balanced with the skills of the human or human resources involved in implementing all TB programs.

The Nurse Said, *"Yes, indeed there is a program, but I still remember that in my kelurahan there were only 6 out of 6 who tested sputum and the results were all negative. It should indeed be really suspected that if it is checked at all levels in the surrounding environment, it should be checked that the comparison of suspect and BTA + puskesmas discovery numbers will decrease. if you don't find it, you will be asked what the screening process is, how does the lab check process" P5 (Nurse*).

### *Limited of financial support and social support*

The Surabaya Health Office has provided free medical assistance to TB patients. In addition to the assistance of giving drugs without paying expenses, TB patients also get free nutritional intake in the form of formula milk given when patients take drugs at the Puskesmas. Other parties who also provided material assistance for underprivileged TB patients were Aisyiyah, in the form of 30,000 in cash. However, in reality the support is still considered lacking.

The Voulunteers said*, "There are those whose economic conditions are very difficult, the puskesmas also needs to ride a pedicab, but there is also funds from the SSR during treatment, only once," P1 (cadre).*

*"Sometimes if you see something like that, the cadres' own initiative is mas, so we give you something, bro. The point is trying to be concerned; there is a distribution of our basic necessities for the sick patient with" P1 TB (cadre).*

*"Once, when I was OK, then I gave 25,000 people money, and I didn't feel very happy." (P2).*

The Nurse Said*, "Yes, we are still on a social mission, which we complain about is usually we have a visit while we have not been able to give transport money so we also usually hesitate if we have to ask" why haven't you visited this?"(P4).*

In Tandes Sub-district there is still no specific counseling program about TB. This is because TB is still not a priority in community problems. The main TB program is the door knock and cakning program where this program is a program with a ball picking approach or visiting the community one by one to be given counseling and looking for TB suspects. But with the constraints that not all communities receive TB health programs, not all levels of society get counseling about TB disease. Hence, an effective way to provide counseling with the participation of many people is through community social groups.

The Voulunteers said, *"in the recitation, PKK meetings and also at the puskesmas when there is counseling for us to give brochures about TB, so later if they go back to the RW they can transmit the knowledge they get through the brochure." P3 (cadre, head of the task force).*

*"Usually if there is an arisan RW we hold counseling, wherever we can hold counseling if the task force. So far we have been on the social gathering." (P9).*

*"If there is an automatic posyandu, if there is a posyandu, even though they are not active in community activities, the posyandi is definitely going to participate, yes, the opportunity for us to provide information is also helped by the RT" (P11).*

*"I usually go to the sub-district head because to ask for help regarding the problem of residents who still don't know about the TB task force, so when we move to the field they don't know and what is this task, now there are a lot of fraudsters, so now we where do you take your SK from the sub-district?"P3 (cadre, task force head).*

## Discussion

Evidence from this study proves that community-based approved programs are also acceptable.

The WHO has issued community-based DOTs to complement health-based DOTs in the high burden of TB, resource-limited countries [11]. Until the patient and community attitudes and perceptions of the community and health facility-based DOT discussed and calculated with this assistance will not be carried out with success.

The findings make the drug cadres and supervisors almost unforeseen women and family members. The responsibility of sick family members in most areas of Surabaya is defined as the role of women [12]. The idea because families cannot participate because of DOT is because culture, family or family relationships are not proven in our study. Many families still do not know about preventing infectious diseases. There are also families who are still doubtful and afraid of TB disease. Even though, that is support patients satisfied with them as supporters of care [13]. Studies conducted elsewhere indicate family members are DOT that effectively supports treatment [14], [15]. A study conducted in Indonesia; however, Australia, did not show benefit in using family members supporting DOT treatment [16].

The context in Australia may be different from Surabaya where large family members are an important part of social networks. In Surabaya and Indonesia at the time of the care of family members taken as family members who were moved inside local culture and values [17]. Members of the caregiver family for chronic diseases such as HIV/AIDS and there is no reason not to believe this phenomenon will be different in TB cases [17], [18]. Future studies should consider the impact of care on TB treatment and how it affects family relationships.

Training to the family, community health volunteer and the patients itself is also important as one of the studies suggest that participants rated the course extremely, whereas success in project implementation varied. This training can be in the form of transmission prevention efforts, how to deal with side effects of drugs, reminds to take medication regularly, control to health facilities [19]. Reflections embody the importance of involving Indonesian consultants in delivery of coaching, the necessity to grasp participant learning needs and adapt the coaching content consequently, and also the challenge of activity tangible coaching outputs [20], [21].

Financial and economic support is another issue concerning the TB management. Indonesia's current level of social protection is not spare to mitigate the socioeconomic impact of TB. Resource for financial gain loss, transportation prices, and food-supplement prices can considerably scale back the incidence of ruinous prices; however, resource alone will not be spare to realize the target of third TB-affected households facing ruinous prices. This might need innovative social-protection policies and better levels of domestic and external funding.[22], [23], [24].

It is very supportive for research in our study that supports motivation to support care by careers and former TB patients for reasons of altruism. The majority of patients can also support other TB patients after completing treatment. These findings are important for two main reasons: First, it shows the potential for using former TB patients in TB control activities. In one study, former TB patients found to be an important source of information for TB patients [25]. Second, former TB patients can also help TB patients and the TB community can indeed be cured. This is very important in Tanzania where many people do not have enough knowledge of TB and delay in seeking treatment the national TB program needs to address this problem based on available local resources [26].

## Conclusion

Our findings provide valuable agreement for the effective implementation of relevant, sensitive and acceptable TB control interventions for the needs of patients and society in general. Community-based TB Program is a viable option and can be built based on health facilities in DOTS, especially in developing

countries such as Indonesia where the health system is overwhelmed by increasing the number of TB and HIV/AIDS patients. The community-based TB management must be seen as a complement and perhaps a substitute for a national TB activity program.

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