Community empowerment program for increasing knowledge and awareness of tuberculosis patients, cadres and community in Medan city

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Abstract. Tuberculosis is one of a major health problem in Indonesia. WHO expressed the need for the participation of various stakeholders in addition to government. TB CEPAT Program aimed to increase knowledge and awareness in combating tuberculosis. This study aimed to compare the knowledge and awareness of community, cadres and TB patients in the program areas and non-program areas, and assess the role of the program in combating tuberculosis in Medan. The study used quantitative and qualitative methods, where 300 people (community, cadres, TB patients) as respondents and three key persons as informants. The findings revealed that in the program areas the knowledge, attitude and practice of the respondents generally are better compare to those in the non-program areas. There was a significant difference in knowledge and practice for community, cadres, and TB patients (p<0.05) and there was a significant difference in attitude for community, cadres (p<0.05), but no significant difference for TB patients (p>0.05) in program areas and non-program areas. The community empowerment through TB CEPAT Program plays an important role in improving knowledge, attitude, and practice of community, cadres, and TB patients. It would help the effort of TB control and prevention in Medan City.

1. Introduction
People with TB disease in the world more than half are found in the region of Southeast Asia (56%). In Africa, there are a quarter of all TB patients, while in India and China, there are 24% and 11% of TB patients. Indonesia is the second largest TB patients and the number one killer infectious diseases as well as the third cause of death after heart and acute respiratory disorders in all ages.[1] Data in North Sumatra Province shows that among 16,567 TB patients who receive treatment, 13,682 patients get healed, 639 patients who do not complete treatment and 169 patients experienced death.[2] The high prevalence of pulmonary tuberculosis patients and cases with incomplete treatment will increase the risk of MDR TB in the province of North Sumatera. As in Medan, the district has become one of risk area for MDR TB because of high prevalence pulmonary TB and failure to achieve its cure rate target by 85%. Medan City Health Profile Data in 2013 shows that 2893 people were getting treatment Acid Fast Bacilli (AFB) smear (+) and 2163 (75%) experienced healing.[3]
WHO expressed the need for the participation of various stakeholders in addition to governments, such as the involvement of the private and public sectors. The forms of community empowerment need to be designed in response to and prevention of tuberculosis.[4]

The National Tuberculosis Program (NTP) has expressed the effort to reach Indonesia free of tuberculosis by engaging citizens and civil society organizations.[5,6] TB CEPAT Program (Community Empowerment of People Against Tuberculosis) is intended to support NTP with aim to increase community empowerment by improving knowledge and awareness, improve access to health services, support social community and reduce stigma and discrimination against TB patients. TB CEPAT launched by JKM since 2012 with support of USAID-Indonesia which implemented in three provinces; North Sumatera Province, West Sumatera Province and DKI Jakarta. Medan city also implemented TB CEPAT Program. The objectives of this study are to analyze the extent the role of TB CEPAT Program by comparing the knowledge and awareness of community, cadres and TB patients in the program areas and non-program areas, and assess the role of the program in combating tuberculosis in Medan.

2. Methods
The study used quantitative research method with cross-sectional approach and qualitative research method with in-depth interview techniques.[7] This research was conducted in two areas of Medan, divided into regions with program areas and non-program areas. There were 13 sub-districts where the TB CEPAT Program has implemented various activities through community empowerment for combating tuberculosis, while eight sub-districts were non-TB CEPAT Program as comparison areas.

The study population was the entire target group of TB CEPAT program; consist of TB patients, TB cadres, and community in the city of Medan. Quantitative data obtained by interviewing a total of 300 respondents (100 people in the community group, 100 people in the TB cadres group, and 100 people in TB patients group) by using a structured questionnaire which have been prepared beforehand by the research team. The sample were selected by purposive sampling method. The primary data were collected by ten enumerators who had been trained to perform interviews and analyzed by using t-test. Qualitative data obtained through in-depth interviews with COD of TB CEPAT Program, head of the health center, and TB deputy supervisor of Medan City Health Office by using sheets of interview guidelines to explore the perceptions of key informants on the implementation of the TB CEPAT program.

3. Results

3.1. TB Cases in intervention areas of TB CEPAT Program
Medan City has 21 sub-districts with 39 primary health cares (Puskesmas). There are 13 sub-districts where the TB CEPAT Program has implemented various activities through community empowerment for combating tuberculosis in the areas, while eight sub-districts are non-TB CEPAT Program as comparison areas. The TB CEPAT Program has reached its target in screening people with TB symptoms and in finding the TB cases (Table 1).

| No | Sub-districts     | TB suspects | TB cases |
|----|-------------------|-------------|---------|
| 1  | Medan Helvetia    | 1429        | 182     |
| 2  | Medan Deli        | 1299        | 132     |
| 3  | Medan Labuhan     | 1029        | 79      |
| 4  | Medan Marelan     | 830         | 77      |
| 5  | Medan Selayang    | 194         | 52      |
| 6  | Medan Belawan     | 158         | 18      |
| 7  | Medan Denai       | 109         | 17      |
| 8  | Medan Tembung     | 70          | 15      |
| 9  | Medan Johor       | 59          | 15      |

Table 1. TB suspects and TB cases in areas of TB CEPAT Program in Medan city.
Cadres who have been trained in TB CEPAT Program conducted screening by seeking people who cough for two or three weeks and other symptoms of TB, then accompanied them to the primary health care for sputum examination. Based on the table above, the cadres found 5215 TB suspects and 598 TB cases. It shows that the proportion TB positive was 11.5% in the community. The TB patient followed by cadre and or drug observer for at least six months period of TB treatment.

3.2. Knowledge of the community, cadres and TB patients in the program areas and non-program areas

The correct information about TB disease is important to know. TB CEPAT Program has empowered by conducting training to the cadres, community leaders, religious leaders, TB patients and ex-TB patients, providing and distributing IEC materials (Information, Education and Communication) such as leaflet, booklet, video, and song about TB, performing traditional music with additional of TB key messages and improving community access for health-seeking behavior. Knowledge about tuberculosis in this study consisted of questions that emphasizing on TB cause, symptoms, transmission, prevention and treatment.

| Knowledge | Areas         | X ± SD     | Mean difference | p-value |
|-----------|---------------|------------|-----------------|---------|
| Community | Program areas | 9.66 ± 2.49| 1.70            | 0.001   |
|           | Non-program areas | 7.96 ± 1.96|                |         |
| Cadres    | Program areas | 12.24 ± 1.27| 1.68           | 0.001   |
|           | Non-program areas | 10.56 ± 1.92|              |         |
| TB patients | Program areas  | 9.46 ± 2.20| 0.68           | 0.045   |
|           | Non-program areas | 8.62 ± 1.94|               |         |

From the above table can be seen there was a significant difference in the level of knowledge of the community, cadres and TB patients by comparing those in program and non-program areas (p < 0.05). Increased tuberculosis case finding in the community will be associated with good knowledge of cadres.[8]

3.3. Attitude of community, cadres and TB patients in the program areas and non-program areas

| Attitude | Areas         | X ± SD     | Mean difference | p-value |
|----------|---------------|------------|-----------------|---------|
| Community | Program areas | 7.34 ± 1.13| 0.78            | 0.001   |
|           | Non-program areas | 6.56 ± 1.09|              |         |
| Cadres    | Program areas | 8.88 ± 0.87| 0.82           | 0.001   |
|           | Non-program areas | 8.06 ± 1.38|            |         |
| TB patients | Program areas  | 7.36 ± 1.17| 0.22           | 0.372   |
|           | Non-program areas | 7.16 ± 1.28|             |         |

From Table 3 above shows that there was a significant difference in the level of the attitude of the community, and cadres by comparing those in the program and non-program areas (p <0.05). Meanwhile the attitude level of TB patients had no significant difference by comparing the program and non-program areas (p> 0.05). Respondents’ attitude will reflect their actions against TB. A positive attitude towards something about TB disease will contribute to the TB control efforts.
3.4. Practice of community, cadres and TB patients in the program areas and nonprogram areas

| Practice | Areas          | X ± SD | Mean difference | p-value |
|----------|----------------|--------|-----------------|---------|
| Community| Program areas  | 4.78 ± 1.59 | 0.92             | 0.004   |
|          | Nonprogram area| 3.86 ± 1.51 |                  |         |
| Cadres   | Program areas  | 6.08 ± 0.94 | 0.50             | 0.016   |
|          | Nonprogram area| 55.6 ± 1.09 |                  |         |
| TB patients| Program areas | 3.88 ± 1.66 | 1.22             | 0.001   |
|          | Nonprogram area| 2.66 ± 1.29 |                  |         |

From the table above, there was a significant difference in the level of practice of the community, cadres and TB patients by comparing those in the program and non-program areas (p <0.05).

4. Discussions

4.1. Community Empowerment, knowledge and awareness

Tuberculosis cases in Medan City tended to increase year by year. There are four sub-districts with high number of TB cases, which are Medan Belawan, Medan Kota, Medan Helvetia, and Medan Perjuangan. Based on data from the TB CEPAT Program, most cases of tuberculosis found in the sub-district of Medan Helvetia and Medan Deli. All Puskesmas in Medan City able to provide services to TB patients. Some hospitals and private practices also designed to provide TB DOTS services. Unfortunately, DHO does not have special funding for health promotion program in TB, but it is integrated with general health promotion program. Increasing case finding in the community as a result of effort in community empowerment, especially those undertaken by non-governmental organizations such as JKM through TB CEPAT Program.

The Health Office and Puskesmas do not have specific empowerment programs. The program is a form of refreshing cadres and includes the whole health cadres. Therefore the health office and centers cooperate with NGOs to empower TB cadres.

"... We have no TB cadres; our cadres are still from NGOs ..." (Head of Health Center).

"Till now no program from the health office directly in empowering TB cadres, we just work with NGOs, so to empower the cadres". (Deputy Supervisor, Health Office).

The cadres trained through the TB CEPAT program aimed to perform case finding in the community and increase community knowledge and awareness about TB. Various IEC media were developed to facilitate educational activities such as posters, leaflets, brochures, stickers, and musical performances. Likewise, the Health Office also provides education to the public through radio, road shows, TV and advertising.

The knowledge level of the community, cadres, and TB patients in the program areas are better than non-program areas. Respondents in non-program areas are many who do not know the cause of tuberculosis, diagnose disease, modes of transmission and treatment for 6-9 months. It happens because of they only receive information through printing and electronic medias or from school lessons. Therefore, suffering and illness become as barriers in empowering TB patients due to less acknowledgement of disease. The key barrier is lack of access to TB services due to geographic, economic, and cultural problems.[9]

There are difference on community and cadres attitude against tuberculosis in program areas and non-program areas, while there is no difference among TB patients. Respondents in the nonintervention region agree to be laid off and alienated from their family if they suffer from TB. They also agree to stop treatment if face any side effects without consultation. Other research shows TB stigma cause a self-isolation behavior and decrease self-esteem as consequences of health personnel or community prejudices.[9]

There are difference on community, cadres, and TB patients practices regarding tuberculosis where respondents in the region nonintervention disagree check to healthcare even though cough for more
than two weeks, also they do not want close their mouth when sneezing and coughing and never been participated in counseling about TB.

A study in South Africa with 2,873 adult TB patients with smear-positive TB patients, found that the treatment cure rates were higher in the intervention area (Guguletu) than in the control area (Nyanga) (58% vs. 50%, \( p=0.037 \)). Community health workers contributed a better TB control program than an approach by health facilities. Clear policy regarding the role of community health workers in TB Control Programs and other settings is needed at international and local levels. Thus, resources are required to support this component of health care.[10]

4.2. TB Prevention and Service Program

Prevention for TB transmission is done by identifying people who have TB symptoms and improve health-seeking behavior and increase public access to health services. Generally, TB cases in Medan City tend to increase. According to Deputy Supervisor of TB, this increment due to the discovery of new cases of TB which conducted by cadres by seeking suspected patients in the community. People's awareness to seek treatment also increases because of TB counseling is done to the community. The existence of National Health Insurance Program which provided by the government also makes it easier for people to seek treatment for health services.

"... since the presence of cadres in the field has increased TB coverage, which was only 30-40, this percentage coverage is up as they do outreach, they are trained by Mr. Yuda the COD of Medan ... Indeed they have a heart to work ... " (Head of Health Center).

The health officer admitted that the department has no specific health promotion program for TB. It is integrated into a general health promotion program. As for TB program, all health centers and hospitals in Medan City able to provide TB services through DOTS program. Therefore, TB patients never been charged for the services. The government supplies drugs, reagents and all supporting factors for TB treatment. Financing for health services of TB cases is obtained from National Budget and District Budget.

The results of the interview stated that the cases of TB are high in four sub-districts. All health centers and government hospitals/private in Medan provide care for patients with TB but MDR TB cases should referred to Adam Malik Hospital. The services facilitate networking in DOTS TB cases in health facilities, especially in the era of BPJS now. These services include inspection until complete treatment of TB patients. The service is more focused on the treatment of patients with TB and promotional activities for TB control integrated with other programs.

Funding for TB programs in Medan through the state budget, the district budget, the Global Fund (an international donor) and TB CEPAT program (supported by USAID). State budget finance the implementation of the national TB program (logistic, TB Medicine logistic and non-TB Medicine logistic). While the district budget finance the implementation of TB programs at district/city, based on their roles, responsibilities, and functions of the local government.[5]

Community empowerment efforts that have been undertaken by non-governmental organizations like the JKM through its TB CEPAT Program contributes to TB control in the city of Medan. Empowerment of communities in TB CEPAT program conducted in various forms to achieve the discovery of the case supported by health insurance BPJS (public easier access to health care in accordance illness). Empowerment has various interpretations that can be seen as a process and program.[11]

Head of Health Service in Medan said that an increase in the discovery of tuberculosis cases in the region thanks to the role of cadres nurtured by JKM. According to data from JKM, the number of TB cases in the region was found by JKM as much as 26.8%, a high percentage of positive TB cases compare to national findings about 10-15%.

The cases of tuberculosis are still many unreached and remain endemic throughout Indonesia. The human resources are necessary to do outreach for such cases. Generally human resources for TB program in the health center relatively low. A study in Banten District found that the number of health workers in the study area support the success of TB program.[12]
Public health education activities by the health staffs generally done on a regular basis depending on the topic that required in accordance with frequent diseases. Activities for tuberculosis counseling conducted by the health center can be incidental. Other activities such as examination of household contacts of TB (contact tracing) and tracking cases of default TB were also carried out by a health center. The Health Operational Assistance (BOK, *Bantuan Operasional Kesehatan*) support these activities. An accurate diagnosis and effective treatment are the core of both TB care and control. Any clinician providing TB services to individual patient in assuming an important public health function as well as providing individual patient care.[13]

The government has authorized the Health Department and Community Health Center to fund to the community development activities which include the cadres in the promotion of health through operational funds in accordance Regulation of Health Ministry No. 11 The year 2015.[14]

5. Conclusions
Community empowerment which emphasized in TB CEPAT Program can increase the level of knowledge and awareness of community, cadres and TB patients. The main actors in this program are cadres who performed case finding and providing main information to the people through various activities. This program really support the government national tuberculosis program especially in case finding and community empowerment.

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