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Strategy for Improving the Level of Community Health Through Rural Innovation Program (Case Studies in Center Bangka and Banyuwangi)

Andini Putri Titasari

Research and Development Planning Agency of Tabalong Regency | Pandan Arum 3 Street No. 72
Tabalong Regency, South Kalimantan

✉ andiniputrititasari@gmail.com

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Abstract: The health sector is an important part and must be considered by the Government of Indonesia. The people who really need health are the people, both rural and urban. Public health is an indicator of the quality of human life which is strongly influenced by environmental conditions in an area. One sign of low environmental health is air pollution. Air pollution is defined as the presence of foreign materials or substances in the air which causes changes in the composition (composition) of the air from its normal state, which can cause several diseases such as respiratory diseases. Tuberculosis (TB) infection is a disease whose spread is influenced by environmental and behavioral factors. In addition, reduced levels of oxygen in the environment are also caused by air pollution. For that we need innovations that can improve environmental health so that people's welfare can increase. For this reason, a rural innovation program related to the health of rural communities, especially in the health of respiratory diseases, in this case is TB, was created, which can improve the quality of environmental health and also the welfare of the community. In addition, it also identifies the influence of innovative oxygen enhancement programs by planting trees in rural communities. This research was conducted to identify rural innovation programs related to rural public health, especially on respiratory disease health, and also to identify the effects of innovative oxygen enhancement programs by planting trees in rural environments. The method used in this research is descriptive qualitative method. As a result, there was an increase in the percentage of TB sufferers because of the Ketok Pintu Sekaput program. In addition, the Shodaqoh Oxygen program, which was carried out in villages in Banyuwangi Regency, succeeded in planting 7,444,764 trees in 2018. Suggestions for the future, it is better for the community to always practice clean and healthy living, and better prevent preventive and make tree planting programs. at the RW level so that they can provide seeds according to the needs of each area.

Keywords: Rural Innovation, Tuberculosis, Public Health, Environmental Health.

1. Preliminary

Health is a need of every human being. Therefore, health is very important, this is in accordance with the objectives of development, namely the welfare of the community as an object of development and development. This welfare includes health, because today the medical costs for the sick are very large, so that health becomes an expensive item (Aditianata, 2012). Health is one of the important things that must be considered by central and local governments. Health development as a whole creates a healthy, independent, and just society based on the 1945 Constitution article 28 H paragraph 1 which states that health is a human right and an investment for the success of national development (Aningsih et.al., 2017)

The people who really need health are the people, both rural and urban. Winslow defines public health as the science and art of preventing disease, extending life span and improving health and efficiency through community organizing and empowering efforts. Public health is an indicator of the quality of human life which is strongly influenced by environmental conditions in an area. The progress of a nation is not only measured in terms of military strength, good economic growth, or cities with luxurious buildings but will be measured from the welfare of society in terms of human qualities (Leavel & Clark, 1958).

There is a theory from Blum (1974), which states that the degree of health is determined by 40% environmental factors, 30% behavioral factors, 20% health care factors, and 10% genetic factors (heredity). So in this case, environmental factors are the factors with the highest degree that affect public health, so that environmental health must always be maintained.

Environmental health is one of the dominant factors affecting the activities and level of public health (Syukra, et al., 2015). One sign of low environmental health is air pollution. Air pollution is defined as the presence of foreign materials or substances in the air which causes changes in the composition (composition) of the air from its normal state. The existence of air pollutants is produced by natural processes and human activities, where the contribution due to human activity can come from immovable pollutants such as industry or mobile such as motorized vehicles (BBTKL and PPM, 2009).

Air pollutants that can cause irritation to the respiratory tract are NO₂, SO₂, formaldehyde, ozone, and dust particles. These pollutants are irritating to the respiratory tract which can cause lung function disorders. SO₂ gas can cause an irritating effect on the upper respiratory tract because it dissolves easily in water which results in increased mucus production resulting in constriction of the respiratory tract. NO₂ gas is irritant and radical. NO₂ gas is one of the main gases in chemical reactions in the atmosphere because it can produce ozone in the troposphere after reacting with UV UV light (Mukono, 2008).

Air pollution as a sign of declining environmental health can cause several respiratory diseases. Not only that, clean and healthy living habits should continue to be applied by every community. Clean and Healthy Living (PHBS) is good too. To implement PHBS in daily life, contributions from all family members are needed, to increase public awareness about clean and healthy living so that they play an active role in the field of

public health (Raksanagara & Raksanagara, 2015). However, there are still many Indonesians who do not apply PHBS in their daily lives, so that it can increase the risk of disease, one of which is respiratory disorders (Zhafirah, 2020).

Tuberculosis (TB) infection is a disease whose spread is influenced by environmental and behavioral factors (Muslimah, 2019). Tuberculosis is a contagious disease that can develop rapidly due to airborne transmission. TB screening is very necessary considering that TB patients with a positive BTA TB examination have a great potential to become a source of transmission to other people around them (Girsang, 2013). For this reason, the current research will identify rural innovation programs related to rural community health, especially in respiratory disease health, in this case TB, which can improve the quality of environmental health and community welfare. In addition, it also identifies the influence of innovative oxygen enhancement programs by planting trees in rural communities.

2. Research Methods

This study uses a qualitative descriptive method, because it aims to describe, explain, analyze the health conditions of rural communities. According to Winartha (2006), a qualitative descriptive analysis method is to analyze, describe, and summarize various conditions, situations, from various data collected in the form of interviews or observations about the problems under study that occur in the field. This research method is often used to examine the conditions of natural objects, namely objects that develop as they are, are not manipulated, and the presence of researchers does not affect the dynamics of these objects.

3. Results and Discussion

3.1. SEKAPUT Program (Our Attack Main Integrated Program)

Tuberculosis (TB) is one of the infectious respiratory diseases with high cases. TB disease has caused 2,000 deaths per day, where 40% of TB cases worldwide occur in Southeast Asia. Indonesia is a developing country in Southeast Asia which is classified as a high burden country related to pulmonary TB. Indonesia is ranked fifth as a country that contributes to pulmonary TB disease after India, China, South Africa, and Nigeria, namely India (2.0 million), China (1.3 million), South Africa (530 thousand), Nigeria (460 thousand), and Indonesia (460 thousand). In 2013, Indonesia experienced an increase in the number of TB cases,

which was ranked as the third highest TB prevalence in the world, namely (680 thousand) cases after India (2.6 million) cases and China (1.3 million) cases, where most TB cases occur at the age above 15 years (Girsang, 2013).

Tuberculosis can be transmitted through the cough of a TB sufferer. When the patient coughs and sneezes, it will excrete and spread the mycobacterium tuberculosis bacteria through the air in the form of sputum sparks (droplets). If the patient experiences coughs and sneezes in a closed room, it will facilitate the TB transmission process. Where once coughing or sneezing will produce approximately 3000 splashes, efforts to reduce this risk can be done with air flow or ventilation according to standards, this is because the mycobacterium tuberculosis bacteria will die when exposed to sunlight (MOH, 2009).

The discovery of bacteriological confirmed pulmonary TB cases in Indonesia is still below the national target (at least 70%) and tends to decline from 62% in 2011 to 57.1% in 2015. Meanwhile, Prov. Kep. Babel itself, the bacteriological confirmed pulmonary TB discovery rate in 2015 was 60.8%, Central Bangka district was only 40.5% and Sungaiselan puskesmas 60.1% or still below the national target, this diagnosis does not give priority to finding infectious patients in Indonesia (Indonesian Ministry of Health, 2015).

According to data from the 2015 Ministry of Health's Ministry of Health's P2PL Team, "At the 67th WHO session of 2014 a resolution was set on the post-2015 global TB control strategy which aims to stop the global TB epidemic by 2035" which is marked with 1). Decrease in mortality due to TB by 95% from 2015 figures; 2). Decreased TB incidence rate by 90% (10 / 100,000 population)

The strategy that is implemented and developed nationally covers 3 categories, namely 1) Integration of patient- centered TB services refer to universal access and unlimited services and prevention efforts, 2) Clear and clear policies and support systems, and 3) Intensification research and innovation. At point one, there is only a collaborative TB / HIV program, there is no integration with programs at puskesmas that are more preventive and promotive, such as environmental health programs, health promotion programs, and nutrition / immunization programs. (Team of Director General P2PL of the Ministry of Health RI, 2014)

In the Regulation of the Minister of Health of the Republic of Indonesia Number 38 of 2016 concerning Guidelines for Implementing a Healthy Indonesia Program with a Family Approach, in supporting the

successful achievement of health development goals according to the 2015-2019 Renstra the Ministry of Health has set operational policies, among others, namely 1). Health development in the 2015-2019 period will be focused on four priority areas, namely a). Decrease in Maternal and Infant Mortality Rates; b). Improvement of nutrition, especially toddlers control short; c). Controlling infectious diseases, especially HIV-AIDS, Tuberculosis (TB) and malaria; d). Control of Non-Communicable Diseases, especially hypertension, diabetes mellitus, obesity, and cancer (especially cervical and breast cancer) as well as mental health; 2). Increasing the reach of targets, especially in families without neglecting other approaches; 3). Planning and budgeting priorities are directed at meeting the needs for promotional and preventive activities; 4). Human Resources are the main capital in development.

From the above regulations, it is clear that overcoming the problem of pulmonary TB is a matter of priority in the future because of the large cost impact both economically because about 75% of TB patients are at the most economically productive age (15-50 years) and also the negative impact on social stigma. even being excluded from society so that it will add to the burden on the state. The following shows the data on the achievements of the TB Program in Central Bangka Regency in 2015.

Table 1. TB Program Achievement Data in Central Bangka Regency in 2015

NO	NAME OF HEALT FACILITY	BTA (+)	CDR
1	Puskesmas Koba	8	12,70 %
2	Puskesmas Pangkalan Baru	8	27,90 %
3	Puskesmas Benteng	18	104. 30 %
4	Puskesmas Simpang Katis	13	31,10 %
5	Puskesmas Sungaiselan	20	60, 10%
6	Puskesmas Namang	18	68,70 %
7	Puskesmas Lubuk Besar	8	18,90 %
8	Puskesmas Lampur	2	8,50 %
9	RSUD Koba	17	0,00 %
Total Kabupaten Bateng		112	40,50 %

Source: Wasor TB Central Bangka 2015

From the data above we can see that the achievements of the TB Control Program in Central Bangka Regency have only reached 40.50% even though the achievements at the Sungaiselan Community Health Center have reached above, namely 60.10% but are still below the national standard of at least 70%. a reference for making a breakthrough in order to achieve it in quality and quantity.

The achievements of the TB control program at the Sungaiselan Community Health Center are still below the standard so far because of 1). Recently, it was oriented towards the screening of pulmonary TB suspects who came for treatment at the general Poli, Pediatric Poli, Emergency Unit and Inpatient Unit (limited to Individual Health Business Services/UKP); 2). Lack of direct socialization to the community; Health cadres; schools; Village government officials as well as in the Puskesmas itself with less varied media; 3). Home visits that do not involve cross programs such as the Promkes/Kesling/Nutrition/Health Center immunization programs. In fact, these cross-programs play a big role in preventing the transmission and morbidity of pulmonary tuberculosis which can accelerate the TB elimination program; 4). Less reaching areas that are far from the Puskesmas such as the Nangka Island hamlet, Tanjung Pura village and Pangkal Raya hamlet whose access has many limitations and sometimes still depends on the weather / tides so it requires a little extra determination to get through such as a ferry to Nangka Island which is far from safety standards because there are no buoys and sometimes people who ride along also increase the risk due to cargo overload.

Based on the data obtained throughout the 2016 period by implementing the Sekaput Door Knockout Program, the data obtained from the TB Control Program in Central Bangka Regency are as follows:

Table 2. . TB Program Achievement Data in Central Bangka Regency in 2015 and 2016

NO	NAME OF HEALTH FACILITY	IN 2015 BTA (+)	CDR	IN 2016 BTA (+)
1	Puskesmas Koba	8	12.70 %	11
2	Puskesmas Pangkalan Baru	8	27,90 %	5
3	Puskesmas Benteng	18	104.30 %	13
4	Puskesmas Simpang Katis	13	31,10 %	10
5	Puskesmas Sungaiselan	20	60,10%	23
6	Puskesmas Namang	18	68,70 %	19
7	Puskesmas Lubuk Besar	8	18,90 %	15
8	Puskesmas Lampur	2	8,50 %	7
9	RSUD Koba	17	0,00 %	14
Total Kabupaten Batang		112	40,50 %	117

Source: Wasor TB Kab. Central Bangka 2016

The table above shows the comparison of the achievements of the pulmonary TB control program at all government health facilities between 2015 and

2016. It was found that in 2015 the total achievements of the TB control program in Kab. Central Bangka was 40.50% with the highest achievement at the Benteng health center health center reaching 104.30% and the lowest was at the Koba hospital health facility, namely 0.0%. Meanwhile in 2016 there was an increase in the total achievements of the TB Control Program in Kab. Central Bangka that is to be 43.90%. With the highest achievement was at the Puskesmas Sungaiselan health facility and the lowest was at the Koba Hospital, namely 0.0%.

The following shows a graph of the achievements of the TB program at government health facilities in Central Bangka Regency against the minimum standard of achievement of the national TB program set by the Ministry of Health of the Republic of Indonesia in 2016. For the Sungaiselan Puskesmas itself in the table of achievements of the TB Control Program in the District. Central Bangka, it was seen that there was an increase in the achievements of the TB Control Program at the Sungaiselan Health Center from 60.10% in 2015 to 80.80% in 2016. This made the Sungaiselan Health Center the health facility with the highest achievement in the District. Central Bangka and has exceeded the national target (at least 70%). The following is a graph of the improvement in the achievements of the TB control program at the Sungaiselan Community Health Center from 2015 to 2016.

The increase that occurred in the achievements of the TB Control Program at the Sungaiselan Community Health Center in 2016 was due to this due to the implementation of the Ketok Pintu Sekaput program which was carried out by means of 1). Home visits for TB BTA + contact patients involving cross-program of Health Promotion / Kesling / Nutrition / Immunization to improve the quality of public health; 2). Integrated Penjaringan in PTM Posbindu activities, Posyan du Seniors, Posyandu Toddlers; 3). Home visits of patients with TB symptoms as a result of reports from external networks such as private doctor practices, posyandu cadres / TB cadres, communities, village government without overriding reports from internal networks at Puskesmas. 4). Covering all the working areas of the Puskesmas Sungaiselan including remote areas such as Pangkal Raya hamlet, Tanjung Pura village and Nangka Island hamlet; 5). Carry out BTA fixation in a location far from the Puskesmas to maintain the quality of laboratory checks; 6). Providing personal and general counseling, including during the Village Community Meeting.

Thus it can be interpreted that the Sungaiselan Health Center Sekaput Door Program has a positive influence in increasing the achievement of the TB Program at the Sungaiselan Health Center, Central Bangka Regency in 2016.

3.2. Shodaqoh Oxygen Innovation Program

The increasing number of building construction and the increasing number of vehicles, will automatically affect the increase in air temperature in the area. This can also cause air pollution and green open spaces to be increasingly pushed. One of the negative impacts of environmental pollution experienced by humans on earth is global warming and climate change. To reduce the effects of global warming and climate change is to increase the number of trees through planting activities. Therefore, efforts are needed from various parties to protect and preserve the earth as a form of concern for the environment (Ihsantika, 2013). One of the steps taken to increase a sense of concern for the environment is by planting tree seedlings, where the tree planting program carried out in Banyuwangi is called Shodaqoh Oxygen.

The meaning of Shodaqoh Oxygen is the awareness of every person or body to do good deeds and concern for the availability of oxygen in the form of tree planting movements. Banyuwangi Regency is a district that is located at the easternmost tip on the island of Java which consists of 189 villages and 28 sub-districts spread over 25 districts which have an area of 5,782.50 Km² which includes forests, rice fields, plantations, moor, yards and settlements and other facilities. The potential is very supportive, so it is not surprising that most of the population is still growing from the land they own, including the cultivation of timber plants.

On the other hand it is necessary to know that population growth is always increasing every year followed by an increase in the rate of construction of permanent and semi-permanent housing and infrastructure for households and other industries made of wood so that the demand for wood in the community is very significant and the impact is that many timber plants are cut down as well as the price. The more expensive, the barren land will appear and cause global warming which triggers climate change which can increase the risk of floods, landslides, drought and others.

Planting trees has benefits for the survival of various living things. The rapid development has caused many trees to be cut down. By de mikian

geothermal increases and the supply of air in the soil on the wane (Wattimena, 2019). Oleh therefore with Shodaqoh Oxygen is an appropriate measure to deal with the impact of changes in climate by planting trees in order to preservation of the environment in which every living creature on earth, both humans, animals and plants need oxygen to breathe for survival and reduce greenhouse gas emissions.

The purpose is to maintain and guarantee the availability of oxygen, while the benefits are for the continuity of life on earth, whether humans, animals or plants. As a result, with the presence of shodaqoh oxygen in Banyuwangi district, the number of trees planted from 2013 to October 2018 was 7,444,764 trees.

4. Conclusion

From this research it can be concluded that public health is largely influenced by environmental health. Due to decreased environmental health, it indicates that there is air pollution in the environment, which can cause diseases in the community, such as tuberculosis. These bad consequences can be reduced by innovation programs carried out in the smallest areas, namely rural areas.

The SEKAPUT program carried out by rural communities in Central Bangka has proven to be able to reduce tuberculosis sufferers and increase the percentage of TB sufferers cured. The increase that occurred in the achievement of the TB Control Program at the Sungaiselan Community Health Center in 2016 was due to this due to the implementation of the Ketok Pintu Sekaput program.

In addition, the innovation program carried out by rural communities in Banyuwangi can improve the quality of environmental health. Because with the oxygen shodaqoh program which is carried out starting from the countryside by planting trees, it can increase the number of trees planted which has reached 7,444,764 trees. This is very good because these trees can contribute oxygen and make the environment fresher and healthier.

The advice that can be given is that the community should always adopt a clean and healthy life, and always protect the surrounding environment. It is better if you experience a contagious disease, both respiratory and other diseases, take preventive prevention and take care not to infect others. And it is also better if the planting of various types of trees is implemented by many local or village governments, which can also be used as community programs at the

RW level so that each region can formulate seed needs so that new business opportunities emerge to provide seeds that are managed by the community independently.

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