

Social, Economic, and Cultural Interactions among Tuberculosis Patients in the Slums of Makassar City, Indonesia

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ABSTRACT

Purpose - To determine the description of pulmonary tuberculosis transmission in the Slums of Tallo District, Makassar City.

Methods - This research is a qualitative study with the method of In Depth Interview or scrutiny interviews. The informants in the study were tuberculosis sufferers and were determined by Snowball Sampling.

Results - The rate of transmission of pulmonary tuberculosis in slums, which is the place where most pulmonary TB sufferers live. This settlement does not meet the criteria for a healthy house in terms of residential density, lighting, ventilation, temperature of the house, and humidity of the house. Behavior of people who throw spit just anywhere, do not close their mouth when coughing. High income of poor families, half the informants also think that the symptoms of TB are common; therefore, no special treatment is needed. This perception prevents them from seeking help to health services. TB sufferers are also ashamed to conduct regular spectrum examinations at the health center because they do not want others to know that they have TB.

Conclusion -The social, cultural and economic interactions in slums are very influential on the transmission of pulmonary TB because some people come from economically disadvantaged groups.

Keywords: Lung Tuberculosis, Social, Culture, Economy, Environmental Characteristics

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INTRUDUCTION

Tuberculosis (TB) is a major global health problem and a leading cause of death in millions of people each year worldwide (World Health Organization, 2016). Tuberculosis is a disease that easily develops quickly because it's an airborne disease transmission(Nardell,

2016). TB screening is very necessary because positive smear TB patients have great potential to become a source of transmission to other people around them (Cudahy & Sheno, 2016). Sources of transmission of smear TB patients are through spits or expectoration. Data from the World Health Organization (WHO), the *Global Tuberculosis Report* shows the prevalence of TB in the world has increased from 2014 recorded as many as 6.1 million cases and in 2015 as many as 10.4 million cases of TB worldwide. According to WHO, the prevalence of TB in Indonesia was included in 6 countries with the highest TB prevalence in the world in 2015. Indonesia was ranked second after India, followed by China, Nigeria, Pakistan and Africa (World Health Organization, 2016).

The number of TB cases in Indonesia was 285,254 cases in 2014 and increased to 330,910 cases and in 2015. In 2016 it decreased by 156,723 cases (Kementerian Kesehatan RI, 2016). Indicators of achieving the objectives of health development are an increase in control of communicable diseases (Tuangratananon et al., 2019). According to the age group, most TB cases attack the productive age group, where the most new cases are found in the age group 25-34 years which is 15.99%, followed by the 45-54 year age group at 16.69% (Kementerian Kesehatan RI, 2016). TB cases in South Sulawesi Province in 2015 were 13,029 cases, an increase compared to 2014 of 12,454 cases. Based on the district / city Case Notification Rate (CNR) figures, Makassar City is the city / regency with the highest CNR TB of 254 / 100,000 population (Dinas Kesehatan Provinsi Sulawesi Selatan, 2015). Specifically in Makassar City in 2019 there were 4,300 cases. Based on the data distribution of TB cases at the Public Health Center, the highest order of TB sufferers was at the Kaluku Bodoa Public Health Center with a total of 470 cases (Dinas Kesehatan Kota Makassar, 2019). Kaluku Bodoa Health Center is one of the Public Health Center located in Tallo Subdistrict with the highest number of TB cases, 470 cases with 190 Lung TB patients (+).

Most of what we know about TB comes from the history of tuberculosis and the effects of environmental factors or on oneself. Environmental factors referred to in this case are ventilation, temperature, lighting, occupancy density, and air humidity (Amelia et al., 2018). While the self-factors in question are social, cultural, and economic interactions. This community culture as a form of accumulation of individual beliefs, family and community norms is reflected in stigma, myths in society. It is necessary to develop the character of individuals, families and communities in shaping the behavior of efforts to prevent pulmonary TB disease. TB is a social problem because most of the sufferers are productive

age working groups, weak economic groups and low education levels(Nurjana, 2015). The results are expected to be considered in the preparation of step by step interventions and to plan for more effective and efficient control of pulmonary tuberculosis(Amelia et al., 2018).

Based on the description above, it is necessary to conduct a research to find out factors related to the incidence of pulmonary tuberculosis in the working area of the Makassar city of Kaluku Bodoa.

METHODS

This type of research is a qualitative research with a case study research design. Data research was carried out by in-depth interviews with informants with in-depth interview guides, recording devices, field notes, and cameras to assist the research process. The focus of the research is about social, cultural and economic interactions as well as environmental characteristics in the Slums for transmission of pulmonary tuberculosis. Informants were selected using snowball sampling. The primary informants were positive smear pulmonary TB patients in the Slums of Makassar City.

Data collection was carried out by using triangulation techniques of data sources that included patients' families as information. The family is the closest person who knows the whole life of the informant to personal matters. Analysis of the data used is to examine all the data available from the results of the interview.

RESULTS

The informants in this study were positive smear pulmonary TB patients who were in the Slums Area of Makassar City in April to May 2020. The research obtained as 5 people with a composition of 3 men and 2 women. The informant's age ranged from 22-47 years, with all being of adulthood (Table 1).

Table 1. Informants Data

Code	Initial	Age	Gender	Education	Occupation
R1	JR	28	Female	High School	House wife
R2	WR	39	Female	High School	House wife
R3	MA	22	Male	Middle School	Entrepreneur
R4	HU	36	Male	High School	Entrepreneur
R5	SR	47	Male	High School	Private Company Employee

Data were obtained from the results of in-depth interviews of 10 people. 5 informants with positive smear TB As key informants, and 5 ordinary informants.

Social Conditions

Social conditions can be described as follows:

a. Pattern of neighbor relations

In neighborly life, if personal relationships have long been established, social contact still occurs, for example visiting each other. The understanding of a realistic picture of a neighbor relationship depends on whether a person's social relations are closely or not. As quoted from the following interview with the informant:

"Yes, I always go to the neighbors for small talks"

"Often sharing food"

"Often visit the neighbor's house to have social gathering"

(JR, Female, 28 years, March 2020)

"Often get together with next door neighbors "

"We're neighbors, so if there is a problem or anything, we'd like to help each other"

(WR, Female, 39 years old, March 2020)

b. Pattern of friendship relationships

This pattern of friendships is explained to adolescents because the process of friendships bonding in residential areas can be through various ways, including togetherness since childhood, which is the initial process of forming friendships through socialization. After becoming a teenager, social relations are increasingly widespread, sometimes reaching out of the area where the teen lives. As in the following summary of the interview results:

"Yes, I often go out"

"Usually got home late at night "

"Sometimes also chatting by the road"

(MA, Male, 22 years, March 2020)

"Often get together together"

"Coworkers"

"Often do the same activity"

(HU, 36-year-old male, March 2020)

Economic Conditions

The livelihoods of people in this residential area are dominated by trading, where they open a kiosk in front of their house for their business. Of the 10 informants observed, there

are also people who do not work or only work as a housewife. Other jobs are, laborers, and private employees. The income of the community from 10 informants whose income range data is around Rp.500.000 - Rp.2,000,000. The following is an excerpt from an interview with the informant:

"It depends on the order, actually"

"Sometimes in a month there are absolutely no orders"

(HU, 36-year-old male, March 2020)

"I am a private employee"

"If in a month my entry is full it means I receive full, but if there are days I do not come to work, then the salary deducted"

(SR, male, 47 years, March 2020)

Cultural Conditions

This community culture is a form of accumulation of individual, family norms and community beliefs norms which is reflected in stigma and myths within the society. The following excerpts from interviews with informants:

"Yeah, if I cough, I just spit it on spot."

"When I go out for a talk with my neighbors I don't use masks because it's hard to breathe."

(HU, Male, 36 years, March 2020)

"If I cough I usually go to the kiosk to buy medicine."

"It's embarrassing if people find out I have TB"

(MA, Male, 22 years, March 2020)

"Yeah, if I want to go around, I always wear a mask"

"When I cough I throw my phlegm in a certain place"

(JR, Female, 28 years, March 2020)

The results of the interview above are in accordance with the observations made by the researchers while in the research location

"Some patients do not wear personal protective equipment (masks) when visiting the neighbor's to share stories, some other others wear masks when leaving the house or doing daily activities because it can transmit other people around them"

(Observation, March 2020)

Environmental Conditions

Based on the results of physical environment data analysis consisting of Air Humidity, Ventilation, Occupancy Density.

a. Humidity

A damp house is a good medium for the growth of microorganisms that can enter the body through the air. The following excerpts from the interview informant:

"Yes it's rather moist inside"

"Close to the sewage too, so it's a bit humid"

(WR, Female, 39 years old, March 2020)

"Yes it's moist"

"This is what a rent house like"

"Like it or not, we have to live it"

(JR, Female, 28 years, March 2020)

"Well....It's a slum, dek"

"Moist floor like this is not a problem anymore"

(HU, Male, 36 years, March 2020)

b. Ventilation

Ventilation of the house owned by the informant is still inadequate for air exchange. Some informants only have a door for ventilation. And if there is a window for ventilation, the window is not opened. The following excerpt from the interview informant:

"Rarely open the window"

"If you want light there is a lamp or you can just open the door"

(HU, Male, 36 years, March 2020)

"Ventilation is deliberately made like that, because the sewage smells so we just open door"

(WR, Female, 36 years, March 2020)

c. Lighting

Home lighting owned by the informant is still inadequate for the house. Some informants argue that home lighting is sufficient with lamps or with little light from the door or ventilation. This can be seen from the informant interview:

"There is a light from the lamp"

"At most the door is opened in the morning, so there will be light entering the house"

(HU, Male, 36 years, March 2020)

"Rarely open the door because we already have lights"

"In the morning we only open the door halfway"

(WR, Female, 36 years, March 2020)

d. Occupancy Density

The occupancy density of some informants is still inadequate. This can be seen from the informant interview:

"Yeah, it's, mediocre"

"This has been more than enough to sleep in"

(SR, Male, 47 Years, March 2020)

"Fair place to rest the body"

"Even with this condition we are already thankful for what we have"

(HU, Male, 36 years, March 2020)

The bedroom owned by the informant is a bedroom with a small size ranging from 2 meters to 3 meters and only filled with a bed and a cupboard. The bedroom is fitted to 1 to 3 people. This can be seen from the informant interview:

"A bit more than two meters and a half"

"I live people with wife and the kid"

(HU, 36-year-old male, March 2020)

"Small, two by two and a half meters"

"Small window small rooms"

"Two people, I live with my husband"

(JR, Female, 59 years, March 2020)

"Small, maybe it can only fit a cupboard and a mattress"

"I live alone"

(MA, Male, 22 years, March 2020)

DISCUSSION

Considering that tuberculosis (TB) in the world is a very serious health problem, the World Health Organization (WHO) recommends a tuberculosis (TB) prevention strategy known as Directly Observed Treatment Short course (DOTS)(Strategi Nasional Pengendalian TB Di Indonesia 2010 -2014, 2011). In line with WHO recommendations, in order to reduce the number the incidence of tuberculosis (TB) in the community, Indonesia has implemented the DOTS strategy since 1995 as a National tuberculosis (TB) prevention program.

Based on the results of the study, informants responded that their home environment is a slum area. Slum housing in question is a house that has a ditch that contains sewage or a pool of dirty water from household waste disposal. Slum settlement environment is the most dominant statement stated by the informants. Therefore it can be concluded that the slum environment can affect the transmission of pulmonary TB. This may resulted from a specific home environment resided with a concentrated population at the same time(Nurjana, 2015).

The occupancy requirements for all housing can be stated in m^2 per person. In general, according to the Republic of Indonesia Decree No. 829 / Menkes / SK / VII / 1999 minimum bedroom area is $8 m^2$ and it is not recommended to be used by more than 2 people, except children under 5 years old, it means that the density of occupied bedroom of ($<4 m^2$ / people not included toddler) will hinder the process of clean air exchange so that clean air requirements are not met and can be a cause of pulmonary TB. The more the occupants of the room the faster the air in the room polluted and the number of bacteria will increase.

The results of this study are in line with research by A. Rizki Amelia, et al in 2018 which states that there is a relationship between population density factors and the incidence of pulmonary TB in families in their homes because their measurement results show a p-value = 0.027 ($p < 0.05$)(Amelia et al., 2018). People with pulmonary TB should not sleep in the same room with other family members because it causes cross infection among the room occupants. Direct transmission can occur from person to person because the droplet of patients infected with TB germs will be inhaled by other room occupants when breathing(Nardell, 2016).

Based on the results of the research the informants stated that the room they lived in was small, around 2 meters to 3 meters and could only fit with bed and cupboard. This bedroom is inhabited by 1 to 3 people in it, meaning that 1 informant sleeps alone, 1 informant sleeps with his wife / husband, 1 informant sleeps with his wife / husband and one child. It means that in term of population density, the informants' bedroom do not meet the

requirements as recommended by the Republic of Indonesia Decree. The statement of the informant above is in accordance with Rohayu et al's research which states that respondents whose occupancy density do not meet the requirements, have a risk of suffering from positive smear pulmonary TB 8 times greater than those who have occupancy density meeting the requirements (Rohayu et al., 2017).

Rukmini's research also states that the condition of the room is related to the incidence of pulmonary TB in which people with room conditions that do not meet the requirements have a 1.18 times chance of contracting pulmonary TB compared to people who live in houses with room conditions that meet the requirements. This means that rooms that do not meet the requirements can affect the process of transmission of pulmonary TB (Rukmini & W., 2011).

Based on the results of the study, the ventilation condition of the house owned by the informant did not meet the requirements. Air vents and windows are generally only made at the front of the house due to the distance between houses. As a result, air flow is stagnant and there's no air exchange. This condition is worsened by the behavior of the informants who do not open the window and cover the ventilation with clothes, irregular placement of furniture and there are no vents and windows in the bedroom.

Ventilation is an indicator of a healthy house (Francisco et al., 2017). Home ventilation serves to keep the air flow in the house fresh, freeing room air from bacteria, especially pathogenic bacteria such as *Mycobacterium tuberculosis* (Manyi-Loh et al., 2016). In addition, it keeps the house in optimal humidity as well as a way for sunlight to enter (Achmadi, 2011). The houses with ventilation that do not meet the standards are at risk of positive smear pulmonary TB 16.9 times greater than those that have qualified ventilation. It can be concluded that ventilation of houses can affect the transmission of pulmonary TB (Lygizos et al., 2013). The area of ventilation is one of the factors that relates to the incidence of pulmonary TB.

The results showed that the informant stated that lighting at home only focuses on artificial light such as lamps, without them realizing that lighting that doesn't meet the requirements can cause Lung Tuberculosis. There are many types of bacteria that can be killed if exposed to direct sunlight, including Tuberculosis germs which can die from light rays ultraviolet from sunlight coming into the room. In this case the morning sun light is preferred because it contains ultraviolet rays that can kill TB germs so that there is no chance of TB germ infection affecting the occupants of the house.

The lighting is a risk factor associated with the incidence of pulmonary TB. Someone who lives in a house with lighting that does not meet the requirements has a risk to suffer from pulmonary tuberculosis compared to people who live in houses with lighting that meets the requirements (Heriyani et al., 2013). There is a significant relationship between the natural lighting of the room with the incidence of pulmonary TB with a p-value = 0.007 ($p < 0.05$) therefore a room lighting that does not meet the requirements has a relationship with the incidence of pulmonary tuberculosis (Amelia et al., 2018). Occupants of rooms with home lighting <60 Lux have a 3.273 times higher chance of developing pulmonary TB compared to someone who occupies a house with lighting levels less than 60 Lux (Indriyani et al., 2016).

Based on the results of the study, the informant stated that the humidity of the environment is a very high so that the mycobacterium tuberculosis is very fast to develop. Increase of humidity in the room due to the process of evaporation of liquid from the skin and absorption, the limited sunlight that enters the house through ventilation holes, enables Mycobacterium tuberculosis to survive. In a humid and dark environment Mycobacterium tuberculosis can last for days to months. Some informants usually tend to buy medicine from a nearby stall or kiosk when they feel the symptoms of coughing, while some others choose to seek treatment and entrust their health to health workers. The reasons for these informants to buy drugs from stalls because the cough is still classified as mild. In addition, there is a stigma in the society that cough is an embarrassing disease and they are ashamed to go to a health center for fear of being sentenced to pulmonary TB. Meanwhile, the informants who chose to go to a health center are because they consider their symptoms of cough are dangerous, contagious, and can only be cured through medical treatment by taking medication or consume medicine for a period of 6 months. This condition was also added to the desire of the informant to get better quickly and did not want to spend much time with this pulmonary TB disease.

In addition, some people also have the perception that pulmonary TB is not a dangerous disease, but is considered a regular cough disease thus does not need serious treatment. The same thing is also found in the results of research conducted by Tobing in North Tanapuli, where the behavior of some people in the area considers that pulmonary TB is an embarrassing disease, so they do not want to immediately visit health services to get treatment. Furthermore, the community also still believes in supernatural powers, so that some people with pulmonary TB choose the traditional treatment (Caprara et al., 2000).

Some people in the research location trust their health conditions to health workers, because the treatment is free, health workers are known to have a greater role in healing pulmonary TB disease, and because counseling is given by officers. However, some other communities still have faith in traditional medicine or traditional healers, because the disease is not considered as medical conditions, to avoid the gossip of others, the treatment is not complicated, and the procedure does not require patient much time and make them bored, it is a family habit or tradition, and the service is family based.

From the results of the study it can be seen that some of the informants who have pulmonary TB disease are from economically disadvantaged groups. With economic limitations, even though the free of cost treatment at the public health center, they still have to mind other costs for coming to the health center, for example transportation costs. To make it worse the treatment of Pulmonary TB is carried out for approximately six months and becomes a very big obstacle and consideration for them in seeking treatment. In this case they tend to choose treatments that are relatively inexpensive.

Regarding the economic condition of tuberculosis patients, they are more focused on fulfilling primary and secondary needs, families with good economic status will be more easily fulfilled compared to families with low economic status. The income is closely related to the meeting primary needs, secondary or tertiary. Basically, poor income will be a problem the health condition due to the lack of purchasing power in consuming food which will affect the nutritional status. When someone has a poor nutritional status, his immunity will be decreased thus making him more vulnerable to Lung Tuberculosis infection (Gupta et al., 2009).

The results showed that some informants who have pulmonary TB are still do social interaction both with fellow sufferers and non-sufferers. There are informants work at the same workplace and there are also informants who were befriend since childhood and have spent much time together. This can cause the transmission of pulmonary TB very quickly because when having social interaction with others, they don't use personal protective equipment (masks). The method of transmission of pulmonary TB disease is through breathing and sprinkling when coughing or sneezing.

CONCLUSION

The social, cultural and economic interactions in slums are very influential on the transmission of pulmonary TB because some people come from economically disadvantaged

groups. The perception of some people that the disease they experience is not a dangerous disease, but rather ordinary cough disease, turns out to have an effect on the rise of a lack of care from the community towards the effects that can be caused by pulmonary TB disease. In addition, environmental factors that do not meet the requirements also support the transmission of pulmonary TB.

In order to increase the community understanding and awareness of the pulmonary TB disease, it is necessary to improve counseling more intensively. For this reason, it is necessary to have health workers who have communication skills that are in accordance with the socio-cultural conditions of the local community. The difference in the concept of healthy sickness and disease found in the community thus it is necessary to understand holistic and integrative efforts among various parties, especially in the effort to prevent pulmonary TB, so that various interventions to be realized are the community needs.

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