

## **Factors Affecting Life Quality of Pulmonary Tuberculosis Sufferers at Sanglah Hospital Denpasar**

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**Abstract:** *Pulmonary tuberculosis is a chronic disease that still becomes the world's health problem including in Indonesia. WHO states that TB has been considered as a global threat. It is estimated that approximately 1, 9 billions of people or one third of the world population is infected by this disease. Every year, there are about 9 millions new sufferers of TB with about 3 millions mortality. In developing countries, mortality occurs in around 25% of all cases. In fact, it can be avoided by the finding of germs causing TB. The objective of this research is to determine the relationship among social support and life quality of pulmonary TB sufferers, characteristics of pulmonary TB sufferers, magnitude of social support, and level of life quality of pulmonary TB sufferers having treatment at Center for Pulmonary Disease Eradication and Prevention (BP4) of Sanglah of Denpasar and magnitude of contributions of respondent characteristics on life quality of pulmonary TB sufferers. There is a meaningful relationship between social support and life quality of pulmonary TB sufferers. The higher the social support, the better the life quality will be. Age and education variables provide meaningful contributions on life quality. Other variable, namely sex, occupation, and history of treatment do not provide contributions on life quality of pulmonary TB sufferers.*

**Keywords:** *Pulmonary Tuberculosis, Mortality, Sanglah-Denpasar*

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### **I. Introduction**

Pulmonary tuberculosis is a chronic disease that still becomes the world's health problem including in Indonesia. WHO states that TB has been considered as a global threat. It is estimated that approximately 1, 9 billions of people or one third of the world population is infected by this disease. Every year, there are about 9 millions new sufferers of TB with about 3 millions mortality. In developing countries, mortality occurs in around 25% of all cases. In fact, it can be avoided by the finding of germs causing TB. That mortality cases usually happen due to the case of disease which is unidentified and the failure of treatment. Data of Tuberculosis Eradication Program (*P2 TB*) in Indonesia show the significant increasing rate every year. Efforts to overcome and prevent the disease have not shown significant result yet, and they are not able to decrease the level of morbidity and mortality. Most common problems found are the difficulty to detect sufferers of pulmonary tuberculosis BTA (+), irregular treatment, and treatment dropout. Untreated TB cases will surely continue to be sources of infection.

As social creatures, human being cannot live alone without other's help. Physical needs (clothing, food, and housing), social needs (intercommunication, recognition, and psychological need including the willingness to know, sense of security, sense of religiosity) cannot be fulfilled without other's help, moreover, when they are facing problems either small or big problems, or both of them. At that time, they will look for social supports from the people surrounding so that they feel appreciated, cared for and loved.

Likewise with sufferers suffering from chronic disease such as pulmonary TB, they need more social support because it will indirectly decrease their psychological burden dealing with their diseases. It will then increase the immune system so that their physical condition will not decrease. Social support is important for chronic disease sufferers because social support can influence individual behavior, such as decrease in anxiety, helpless and desperate feeling that will then increase their health status. The increased health status will surely increase their life quality. Supports from family and society play important roles in increasing treatment compliance, with supervision and support given to the sufferers. The role of Drug Consumption Supervisors (*PMO*) could be taken from health officials, society, or family of sufferers.

Quality of life is one of the most basic criteria to know health care interventions such as morbidity, mortality, fertility, and disablement. In recent decades in some developing countries, incidence of chronic diseases begins replacing the domination of infectious diseases in society. Some people can live longer but then they have to bring the burden of chronic diseases or disablement, therefore, life quality becomes the attention of health care. Current phenomenon in society shows that family members tend to be afraid of getting closer to the suspected sufferers of pulmonary TB so that it leads into over cautious attitudes such as alienating those sufferers, reluctantly speaking with them, closing nose when they are close to the sufferers, and so on. Those attitudes will definitely offend those sufferers. They will feel distressed and excommunicated so that it will

impact on their psychological condition and finally affect the success of treatment. It means that social support needed by them cannot be achieved optimally.

According to consideration that social support can increase the health status of sufferers and the importance of attention on the life quality of chronic disease sufferers, then the researcher is interested to examine those two things. Sanglah hospital is chosen as the place to have data collection because this is a potential place of treatment for pulmonary TB sufferers and the right place to develop various research dealing with treatment for that disease. This place is the center of administration, and the current finding of pulmonary TB in this place is the highest compared to other places. In January-December 2012, there were around 48% new sufferers of pulmonary tuberculosis BTA (+) found here.

The objective of this research is to determine the relationship among social support and life quality of pulmonary TB sufferers, characteristics of pulmonary TB sufferers, magnitude of social support, and level of life quality of pulmonary TB sufferers having treatment at Center for Pulmonary Disease Eradication and Prevention (BP4) of Sanglah of Denpasar and magnitude of contributions of respondent characteristics on life quality of pulmonary TB sufferers.

## **II. Research Method**

This is a non-experimental research using descriptive quantitative method. The research design is cross-sectional. The samples were 50 sufferers of pulmonary TB who had treatment at Center for Pulmonary Disease Eradication and Prevention (BP4) of Sanglah and met the following specified criteria: being medically diagnosed suffering pulmonary tuberculosis BTA(+), having passed intensive phase of minimum 2 months treatment program with category 1 of Anti Tuberculosis Drugs (OAT), sufferers being in productive age of 15-55 years old, can read and write. The data were collected by distributing questionnaires to respondents on February until April 2013. The data were analyzed descriptively to determine the relationship between social support and life quality of pulmonary TB sufferers using correlation analysis test of Product Moment Pearson.

## **III. Result And Explanation**

### **Research Result**

Sufferers of pulmonary TB becoming respondents in this research were being in productive age, 21-30 years old as many as 26 people (52%). There were 41-50 years old and 41-50 years old as many as respectively 8 people (16%) and 7 people (14%). Total sufferers of both men and women were almost equal, men were 27 people (54%) and women were 23 people (46%). The respondents' education backgrounds were 23 people (46%) from senior high school graduates, 14 people (28%) from junior high school graduates, and low education level respondents (not studying at schools, not completed or completed elementary school were respectively 3 people (6%). The occupations of respondents were 14 people (28%) university student, jobless and labors were respectively 8 people (16%). Of the history of treatment, 33 people (66%) of respondents stated that they had never sought treatment previously except at Center for Pulmonary Disease Eradication and Prevention (BP4) and 17 people (34%) stated that they had ever had other treatments before going to Center for Pulmonary Disease Eradication and Prevention (BP4) of Sanglah.

### **Social Support**

Total score of social support was the total of people giving support and satisfaction of respondents on the social support. There were 18 people (36%) obtaining social support categorized high. For middle and low categories, there were respectively 22 people (44%) and 10 people (20%). In general, social supports received by sufferers were from family, relatives, and neighbors.

### **Life Quality**

Assessment on life quality was covering 5 aspects namely: activity level, daily life, health, social support and expectation. 34 people (68%) could have a normal activity, 14 people (28%) needed others support in having activity and 2 people (4%) said that they could not have activity. 40 people (80%) could do their daily activities normally and 9 people (18%) needed supports from others in undergoing their daily life and 1 person (2%) said that they could not completely do their daily activities. 25 people (50%) felt healthy in most of the time, 21 people (42%) said that they always felt tired and 4 people (8%) said that their body always felt sick. Most of pulmonary TB sufferers got big support from family and friends, who were about 43 people (86%). Sufferers who got limited support from family were 6 people (12%) and there was only one (2%) stating that he or she rarely got support from people surrounding. 40 people (80%) had positive expectations and could adjust to the surrounding environment. There were 9 people (18%) feeling sad and only 1 person who was really confused and felt anxiety. In general, there were 34 people (68%) who had bad life quality, 30% having middle life quality and only 1 person (2%) with bad life quality.

### **Relationship between Social Support and Life Quality**

From the result of analysis using correlation test of Product Moment Pearson, it was obtained the relationship between social support and life quality of pulmonary TB sufferers with  $r = 0.675$ ;  $p < 0.01$ . It means that there is a meaningful relationship between social support and life quality. The higher the social support received, the better the life quality will be. In this study, the relationship is categorized high.

### **Relationship between Characteristics of respondents and Life Quality**

From the result of analysis using Pearson correlation between characteristics of respondents (age, sex, education level, occupation, and history of treatment) and life quality of pulmonary TB sufferers, it was obtained that: age variable ( $r=0.468$ ;  $p<0.05$ ), sex ( $r=0.077$ ;  $p=0.593$ ), education ( $r=0.420$ ;  $p<0.05$ ), occupation ( $r=0.141$ ;  $p=0.330$ ), history of treatment ( $r=0.017$ ;  $p=0.906$ ). From that analysis, it was obtained that age and education variables had medium correlation coefficient score, respectively as high as  $r=0.468$  and  $r=0.42$ , with understanding level  $p<0.05$ . It indicates that there is a meaningful relationship between age as well as education and quality of life. Other variables, i.e. sex, occupation, and history of treatment do not show meaningful relationship with life quality.

Of the analysis result of multiple regression between characteristics of respondents and life quality of pulmonary TB sufferers, it was obtained that the variables of age ( $a=0.519$ ;  $p<0.05$ ) and education ( $a=0.378$ ;  $p<0.05$ ) provided meaningful contributions on quality of life. Other variable, i.e. gender ( $a=0.260$ ;  $p=0.753$ ), job ( $a=-0.155$ ;  $p=0.260$ ) and history of treatment ( $a=-6.25$ ;  $p=0.417$ ) did not provide contributions on life quality of pulmonary TB sufferers.

## **IV. Discussion**

Frequency of pulmonary TB sufferers having outpatient treatment program at Sanglah Hospital Denpasar was mostly in productive age, in the range of 21-30 years old, equal to 52%. The highest incident of pulmonary TB was young adults group, in the range of 15-44 years old. About 95% pulmonary TB sufferers are in developing country, in which around 75% of them are being in productive age.

The total men sufferers are higher than women, equal to 54%. It is in line with the result of research regarding the display of radiological abnormalities in adult stating that men have bigger vulnerable tendency to the risk factor of pulmonary TB. It might happen because men are usually having more activities, thus, they are exposed to the cause of this disease more frequently.

Most of the respondents' education levels are senior high school graduates, equal to 46%. It is assumed that people with higher education will have better sense of living healthy and treatment towards the diseases. Yet, the research results show that higher education does not guarantee better awareness of the diseases of an individual, compared to those who have lower education. It is different with the result of a Case Study of Pulmonary TB Treatment Results at 10 Community Health Centre (*Puskesmas*) in DKI Jakarta in 1996-1999 stating that the low level of education would lead into the low understanding in taking care of the hygiene and health of environment reflected from the attitude of most sufferers who still throw up phlegm and spit everywhere.

At the most, the respondents' occupation is as university students, equal to 28%. From the result of interview, it is obtained that respondents with the status of university students are mostly coming from outside of the city so that they have to stay in boarding houses. Living in a crowded environment (such as boarding houses) will bring influence towards the infection of pulmonary TB. It is in line with the statement concerning several things that have to be considered dealing with the infection of pulmonary TB, that is about overcrowded residential or bad work circumstances. Overcrowded residential would bring negative impacts on physical, mental, and social health. House or workspace which is too tight would lead into the scarcity of Oxygen that would decrease the immunity and make people easily infected by diseases.

History of treatment shows that 66% sufferers were never previously sought treatment except at Center for Pulmonary Disease Eradication and Prevention (*BP4*). Respondents that previously had treatment outside Center for Pulmonary Disease Eradication and Prevention (*BP4*) eventually choose treatment in this place. It is because of the cheaper cost and accessible considerations. It also deals with sufferers compliance in completing their 6 months program of treatment. The succeed rate of pulmonary TB treatment is mainly affected by the sufferers compliance towards regiment of treatment given. Ministry of Health has established a policy regarding free treatment provision so that it is expected to become the trigger for sufferers to perform the treatment according the schedule up to the achievement of healing. Nevertheless, there are many sufferers who do not complete this treatment in its implementation.

From the measurement result of social support, it is obtained that 44% of all respondents get medium social support. It means that sufferers of pulmonary TB becoming the respondents in this research get sufficient social supports from their surroundings. Social support is indeed important in this chronic disease because it will

affect individual behavior such as decreased anxiety, helpless and desperate sense that will then increase their level of health.

Life quality of pulmonary TB outpatients at Sanglah Hospital Denpasar dealing with activities in the one final week is categorized good. There were 34 people (68%) of sufferers stating that they could work or study normally. In contrast, sufferers who could not work or study in any kinds of conditions were only 4%. Pulmonary TB belongs to chronic inflammation. Malaise syndrome is frequently found (anorexia, decreased appetite, decreased weight, headache, dizzy, muscle aches, and night sweat) and can decrease work productivity.

Life quality of pulmonary TB outpatients at Sanglah Hospital dealing with daily life in the one final week is categorized good. There were 80% of respondents stating that they could eat, wash, dressing, take public transportation without others' help. Ability to do daily activities such as taking care of themselves and having social function is one of the basic components in life quality dealing with functional capacity.

Life quality of pulmonary TB outpatients at Sanglah Hospital Denpasar dealing with the health in the one final week is categorized good. There were 25 people (50%) respondents feeling healthy in most of their time. Sufferers who felt unhealthy were 4 people (7%) and it was mostly caused by chest ache, permanent cough, feeling tired, cough with phlegm, pain at chest, decreased weight, fever and sweating, loss of appetite, short breath, and flu.

Of life quality of pulmonary TB outpatients at Sanglah Hospital Denpasar dealing with family and friends supports, it was obtained 43 people (86%) stating that they had good relationship with other people and got a strong support from them. Sufferers who had less support from family or friend were mainly caused by the diseases they suffer. They realized that pulmonary TB was easily infected, thus, some of them minimized the contact with other people. There were also people who were afraid of getting closer to sufferers in order to not being infected. Supports from family significantly help the healing process. For instance, dealing with the compliance of consuming drugs for six months, the support of family and society provides big impacts in increasing treatment compliance. Family and society can do supervision dealing with drugs consumption and give support to sufferers.

Life expectation of pulmonary TB outpatients at Center for Pulmonary Disease Eradication and Prevention (*BP4*) is categorized good. There were 40 people (80%) of sufferers having positive expectation and could adjust to the situation of the surrounding environment. Most of the respondents having positive expectation were sure that even though they had a serious disease, but it could still be cured as long as sufferers comply with the specified treatment regimen. The existence of Drug Consumption Supervisors (*PMO*), that is someone who is trusted by both the sufferers or health officials who will supervise patients in consuming their drugs, is expected to be able to help the sufferers to behave positively so that it will support their treatments.

In this research, it is found that there is a meaningful relationship between social support and life quality ( $r=0.675$ ;  $p<0.01$ ). Direction of positive correlation shows that the bigger the social support, the better the life quality is. It is in line with the theories regarding social support, one of which is the indirect effect, that social support will affect stress level suffered by individual, with social acceptance which can also bring effect to self-esteem. This self-esteem will then affect the mental health of sufferers.

From the analysis result of multiple regression between age and life quality, it was obtained score equal to ( $a=0.519$ ;  $p<0.05$ ). It means that age provides meaningful contributions on the life quality of pulmonary TB sufferers. In general, life quality will decrease as the increase of age.

This research finds a fact that sex does not provide contributions on the life quality, by the score equal to ( $a=0.260$ ;  $p=0.735$ ). It is in line with the result of research on Life Quality of Patients with Terminal Renal Failure Having Chronic Hemodialysis at Central General Hospital (*RSUP*) of Dr Sarjito Denpasar, stating that sex does not affect the life quality of terminal renal failure (*GGT*) having chronic hemodialysis. It is also stated that men have worse life quality compared to women.

Level of education provides meaningful contributions on life quality ( $a=0.378$ ;  $p<0.05$ ). It is in line with the statement that level of education will affect the attitude in taking care of oneself. The higher level of education will lead into advancement, thus, it is expected that this attitude will influence the health treatment of oneself.

Of the analysis result of multiple regression between occupation and sufferers' life quality, it is obtained the score equal to ( $a=-0.155$ ;  $p=0.260$ ). It means that occupation does not provide contributions on life quality of pulmonary TB sufferers. It is due to the fact that respondents' occupation kinds are taken descriptively in this research. 50% respondents are university students and the rest of them are still divided into 6 other occupation. Therefore, kind of occupation in this research does not represent profession.

In this research, it is found that there is no relationship between history of treatment and life quality of pulmonary TB sufferers, with the score equal to ( $a=-6.25$ ,  $p=0.417$ ). History of treatment in this research is related to the treatment compliance of sufferers. It is in line with the government program on giving free treatment in order to decrease the level of treatment dropout as lower as possible.

## V. Conclusion

There is a meaningful relationship between social support and life quality of pulmonary TB sufferers. The higher the social support, the better the life quality will be. Age and education variables provide meaningful contributions on life quality. Other variable, namely sex, occupation, and history of treatment do not provide contributions on life quality of pulmonary TB sufferers.

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