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RESEARCH ARTICLE

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Characteristics and Compliance of Tuberculosis Patients to the Use of Synthetic Drug and Herbal Medicine in Makassar City

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ABSTRACT

The high problem of TB in Indonesia is caused by, among other things, case finding and complete treatment, which are less rapid than the spread of the disease. The main goal of treating TB patients is to reduce mortality and morbidity and prevent transmission by curing patients. Characteristics of respondents, duration of TB treatment, resistance and side effects of TB drugs are problems to increase patient compliance in using these TB drugs. Treatment patterns and strategies are important in addressing the use of drugs that are good, correct and safe. The duration of tuberculosis treatment for 6 months, 9 months, and 12 months is the reason for the patient's non-compliance to treatment so that the achievement of successful treatment is difficult to avoid. The use of medicinal herbs as an alternative and to support modern medicine is an option in addressing this problem. Rapid urbanization in developing countries and the economic status of individuals also affect a person's susceptibility to infection. The TB burden follows the socio-economic level. The prevalence of tuberculosis in men is 3 times higher than in women. The same is happening in other countries. This happens because men are more exposed to TB risk factors such as smoking, exposure to air in the work environment and lack of non-compliance to taking medication. The purpose of this study was to analyze the characteristics of tuberculosis patients in carrying out treatment and patient compliance with the use of synthetic drugs and medicinal herbs in the city of Makassar. The type of research is quantitative research with a cross sectional study design. This study uses a survey method using a questionnaire instrument. The sample size in this study was 200 respondents. Statistical processing and analysis were univariate and multivariate. The results showed that there was a correlation between the socioeconomic characteristics of the respondents towards TB treatment using synthetic drugs and medicinal herbs and the level of adherence was still low.

Keywords: characteristics; patient compliance; tuberculosis

INTRODUCTION

Background

The globally of tuberculosis diseases is a major health problem of concern and affects individuals disproportionately in low to middle income countries. In 2017, it is estimated that in 10 million people who suffer from TB, there are 1.3 million people who die and 6.7 million are recorded as TB sufferers. A total of 3.3 million (33%) were not diagnosed as having TB or diagnosed as having TB but were not reported.⁽¹⁾

Indonesia is the country with the 5th most TB patients in the world after India, China, South Africa and Nigeria. It is estimated that the number of TB patients in Indonesia is around 5.8% of the total number of TB

patients in the world. The number of new TB cases in Indonesia was 420.994 cases in 2017 (data as of May 17, 2018). Based on gender, the number of new TB cases in 2017 in males was 1.4 times greater than in females. Even based on the Tuberculosis Prevalence Survey, the prevalence in men is 3 times higher than in women. The same is happening in other countries. This happens because men are more exposed to TB risk factors such as smoking, exposure to air in the work environment and lack of non-compliance to taking medication. This survey found that 68.5% of all male participants smoked and only 3.7% of female participants smoked. ^(2,3,4)

The problem of drug resistance in TB treatment is an important public health problem and needs to be addressed immediately. The incidence of drug resistance has increased since the introduction of the first TB treatment in 1943. TB drug resistance is basically a phenomenon as a result of inadequate treatment of TB patients and transmission from these Multi Drug Resistant (MDR) TB patients. Inadequate treatment is usually the result of one or more of the following conditions: 1. Improper regimen, dosage, and route of administration. 2. Irregularity and non-adherence of patients to take medication. 3. Discontinued availability of TB drug and 4. Low quality of drugs. ⁽⁵⁾

The duration of tuberculosis treatment for 6 months, 9 months, and 12 months is the reason for the patient's non-adherence to treatment so that the achievement of successful treatment is difficult to avoid. The treatment phase is divided into two phases, namely the intensive phase and the continuation phase. In the intensive phase, usually the patient will get more types of drugs (three, four, or five types of drugs) depending on the tuberculosis case at hand. In the intensive phase, treatment is generally continued with only two types of drugs. ⁽⁵⁾ Many types of TB drugs and long durations make it difficult for patients to maintain adherence, TB drug is provided in the form of Fixed Dose Combination (FDC).

Rapid urbanization in developing countries and the economic status of individuals also affect a person's susceptibility to infection. The TB burden follows the socio-economic level. A person with low socio-economic status is exposed to several risk factors such as malnutrition, air pollution, alcohol and others. These conditions increase the risk of TB. Someone with lower economic status has a higher tendency to be exposed to crowds or overcrowding, lack of air ventilation and lack of safe cooking facilities. These factors also increase the risk of TB

Purpose

The purpose of this study was to analyze the relationship between the characteristics of tuberculosis patients in treatment and patient compliance with the use of synthetic drugs and medicinal herbs in the city of Makassar, then analyze the relationship between the characteristics of tuberculosis patients from the socio-economic aspect of tuberculosis patients compliance to treatment using synthetic drugs and medicinal herbs.

METHODS

The type of research used in this research was quantitative research with a cross sectional study design. This study used a survey method using a questionnaire instrument with the aim of analyzing the relationship between the variables of treatment patterns of TB patients using synthetic drugs and herbal medicinals in the city of Makassar. This research carried out in 4 public health center in the Makassar city area and the Makassar Community Lung Health Center in 4 Makassar city areas. The research was conducted in March until October 2020.

The population in this study were TB respondents who were treated with modern drugs and herbal medicine. Respondents are Makassar people who live in Makassar City who perform TB treatment in several public health center areas and Health Center of Lung Community in Makassar. The sample was respondents who come to the public health center and Health Center of Lung Community in Makassar to treatment and get modern medicine as well as perform alternative medicine using medicinal herbs. The sample size in this study used parameter estimates with the following proportion data: 200 respondents.

The sampling technique in this study was done by random sampling, namely randomly selecting respondents who came to public health center and Health Center of Lung Community in Makassar who received modern medicine and used medicinal herbs as alternative medicine. Respondents who were selected by random sampling were then given an explanation of the study and their willingness as respondents to answer the research questions contained in the questionnaire with the aim of analyzing the pattern of TB treatment used during therapy. Sampling of the health center was chosen randomly in several areas of the public health center in the city of Makassar and the Health Center of Lung Community in Makassar only had one in the city of Makassar. The instruments used in this research are questionnaires and interview sheets which have been tested for validity and reliability. The questionnaire instruments and interview sheets were structured instruments, where respondents only answer questions according to the guidelines set.

The data processing and analysis technique in this study used univariate and multivariate analysis which can be used to confirm that there is a relationship between the characteristics of tuberculosis patients from socio-

economic aspects to the compliance of tuberculosis patients in taking treatment using synthetic drugs and herbal medicines according to the hypothesis.

The results of the ethical commission and research feasibility studies conducted in 5 research locations showed that the research was feasible and there was no intervention from any party and there was no conflict of interest.

RESULTS

The research locations used as research locus were 4 public health center (Puskesmas) and Health Center of Lung Community in Makassar. Public health center in the Makassar city area, they are taken from the work area representing the positions of the west, east, north and south. The sample size in the study was 200 people with details: Puskesmas A = 35 peoples, Puskesmas B = 35 peoples, Puskesmas C = 35 peoples, Puskesmas D = 35 peoples and Health Center of Lung Community in Makassar = 60 peoples, but the sample obtained in the study was 204 people.

Table 1. Distribution of age

Age	Frequency	Percent
17 - 20 years	27	13.2
21 - 30 years	34	16.7
31 - 40 years	42	20.6
41 - 50 years	24	11.8
51 - 60 years	39	19.1
61 - 65 years	38	18.6

Table 1 illustrates that the highest age of respondents who received TB treatment was 31-40 years old as much as 20.6% of the total 204 respondents. Although the ages of 51-60 years and 61-65 years approach the percentage of people aged 31-40 years who are exposed to TB.

Table 2. Distribution of gender

Gender	Frequency	Percent
Male	121	59.3
Female	83	40.7

Table 2 illustrates that the sex characteristics of respondents who received TB treatment were male, 59.3% of the total 204 respondents.

Table 3. Distribution of education

Education	Frequency	Percent
Junior High School/equal	40	19.6
Senior High School/equal	100	49.0
Diploma	17	8.3
Bachelor	47	23.0

Table 3 illustrates that the educational characteristics of respondents who received TB treatment in 5 research locations were Senior High School/equal education level/equal 100 (49.0%) of the total 204 respondents.

Table 4. Distribution of employment

Employment	Frequency	Percent
Junior High School/equal	40	19.6
Senior High School/equal	100	49.0
Diploma	17	8.3
Bachelor	47	23.0

Table 4 illustrates that the characteristics of the employment status of respondents who received TB treatment were mostly respondents with other occupations, namely work as housewives and 46.1% of those who did not have a job.

Table 5. Patient compliance with TB drugs during treatment in 5 research locations in Makassar city area

Compliance	Frequency	Percent
Non-Compliance	129	63.2
Compliance	75	36.8

Table 5 related to patient compliance shows that 129 (63.2%) respondents who received TB treatment were non-compliance in carrying out the treatment process and 75 (36.8%) respondents were obedient in carrying out the TB treatment process.

Table 6. The relationship between respondents' age and patient compliance during TB treatment in 5 research locations in the Makassar city area

Age	Compliance patient		Total
	Non-compliance	Compliance	
17 - 20 years	20	7	27
21 - 30 years	19	15	34
31 - 40 years	25	17	42
41 - 50 years	17	7	24
51 - 60 years	21	18	39
61 - 65 years	27	11	38

Table 6 shows that the age of respondents 17-20 years and the age of respondents 61-65 years in carrying out the TB treatment process shows a high level of non-compliance, namely 74.1% and 71.1%, respectively.

Table 7. The relationship between sex and patient compliance during TB treatment in 5 research locations in the Makassar city area

Sex	Compliance patient		Total
	Non-compliance	Compliance	
Male	65	56	121
Female	64	19	83

Table 7 shows that male respondents 56 (46.3%) are more obedient in carrying out the TB treatment process compared to 19 women (22.3%).

Table 8. The relationship between education level and patient compliance during TB treatment in 5 research locations in the Makassar city area

Education	Compliance patient		Total
	Non-compliance	Compliance	
Junior High School/equal	29	11	40
Senior High School/equal	66	34	100
Diploma	11	6	17
Bachelor	23	24	47

Table 8. shows that the education level of **Senior High School/equal** in carrying out the TB treatment process showed non-compliance in using TB drugs 66 (66%), while the undergraduate education level showed compliance of 24 (51.1%).

Table 9. The relationship between work status and patient compliance during TB treatment in 5 research locations in the Makassar city area

Work	Compliance patient		Total
	Non-compliance	Compliance	
Student	6	9	15
State Civil Apparatus/Army/ Police	17	3	20
Private	24	20	44
Entrepreneur	17	14	31
Others	65	29	94

Table 9. shows that other employment statuses, namely housewives and do not have a job when carrying out the process of using TB drugs, indicate that the respondent is non-compliance 65 (69.1%), while respondents who show compliance are higher than the non-compliance rate. are respondents with employment status as students 9 (60%).

DISCUSSION

The results of the study with a sample size of 204 respondents obtained from 5 research locations, namely the Health Center of Lung Community in Makassar, Kassi-Kassi Puskesmas, Sudiang Puskesmas, Jumpandang Baru Puskesmas, Pertiwi Puskesmas.

Characteristics of Respondents

This study analyzes the characteristics of respondents who take TB treatment at the research locus, there are 5 factors that influence the TB treatment process. The age category of the respondents is 31-40 years. The average age of TB patients who come for treatment at the health care unit is 40 years old⁽⁶⁾. In this study, it was found that the median age of the research subjects was in the adult age group based on the classification of the Indonesian Ministry of Health (2009) which was in the age range between 25 to 54 years, the highest exposure to TB. The sex of the respondent with the highest exposure to TB was male. According to the 2009 Indonesian health profile data, it was shown that males were more exposed to TB than females⁽⁷⁾. The education level of respondents who received TB treatment was SMA/equivalent as much as 100 (49.0%) this was because the population of respondents with a high school education level/equivalent in Makassar was higher than other education levels. Most of the respondents with high school education/equivalent took medication⁽⁸⁾. The employment status of respondents who took TB treatment indicated that the majority of other occupations were. Other occupations are housewives and respondents who do not have jobs, this shows that respondents who are exposed to TB who take TB treatment 46.1% come to the study locus as a place for TB treatment services.

Patient Compliance

TB treatment is inseparable from one of the success factors of the treatment, namely adherence. Compliance is a cooperative attitude or behavioral accuracy shown by patients in carrying out drug therapy so that goals can be achieved.⁽⁹⁾ This study showed that of the 204 respondents who took TB treatment there were 129 (63.2%) respondents who did not comply in carrying out the treatment process. Non-compliance results in the use of drug doses being reduced so that patients lose the benefits of drug therapy. The duration of TB treatment (6-8 months) resulted in a high rate of non-compliance to drug use. Several interaction factors influence the patient's decision to stop taking the drug. Compliance with tuberculosis treatment is so complex, the phenomenon is dynamic with various factors interacting with each other, so that it has an impact on behavior selection decisions.⁽¹⁰⁾

The Relationship between Respondent Characteristics and Patient Compliance

Regarding the characteristics of respondents with patient compliance in carrying out TB treatment, respondents aged between 17-20 years and ages 61-65 years are the age of respondents who have a high level of non-compliance to taking medication this is because at that age respondents do not care about the TB disease they experience. and resigned to the condition of the disease he suffered. The male sex is more compliance in carrying out TB treatment compared to women, this is because men are more dominant in their attention to the TB disease they experience. Meanwhile, the type of education of respondents with the level of compliance in carrying out TB treatment is undergraduate education, this is because undergraduate education is considered to have better insight into the handling of TB disease and its treatment so that respondents are more compliance in carrying out their treatment. For other occupational statuses, namely housewives and respondents who do not have jobs, the level of non-compliance in carrying out TB treatment is high, this is because awareness and understanding of TB cure is still low.

CONCLUSION

Results of research and discussion related to the analysis of treatment for Tuberculosis patients using synthetic drugs and medicinal herbs in the city of Makassar, which were carried out in 5 research locations, they are as follows:

1. Characteristics of respondents who received TB treatment in the five study locations were age 31-40 years and male gender, high school education level/equal and other occupational status (housewives and not having a job) were characteristics of respondents who did a lot of TB treatment.
2. The level of patient compliance in the TB treatment process is still low

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