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Evaluation Factors for Non Medical Treatment Failure Patients Tuberculosis Lung Health in Children on Makassar City

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ABSTRACT

The purpose of the study, known factors associated with treatment failure patients Tuberculosis in children. The method used is an observational design, cross-sectional study intended to determine the factors associated between the independent variables (independent) and dependent variable (dependent) with the identification of all the variables. Both of these variables can be seen at the time of execution simultaneously. The findings in this study found that low education, low knowledge and disobedience taking drugs is a factor that has a strong risk of treatment failure patients with pulmonary tuberculosis in children, while family support only protective factor (prevention) and not a risk factor for treatment failure patients with TB in children, The conclusion showed that the variables influencing the failure of treatment of TB patients is variable education and knowledge has a value of OR unchanged at 22.752 in CI 95% to the value of the lower limit (LL) = 1.032 and Upper limit (UL) = 501.786 with a significance level of 0.048 <0 05.

Keywords: *pulmonary tuberculosis, failure, treatment, children.*

Introduction

In 1993 the WHO to declare TB as a global health emergency,because it is a major health problem worldwide cause of morbidity in millions of people each year and recommends the DOTS strategy as a strategy to control TB. TB is regarded as a community health problem of the world despite efforts to control the DOTS strategy has been implemented since 1995 by the WHO report in 2015, in 2014 there were 9.6 million cases of pulmonary tuberculosis in the world, 58% of TB cases are in Southeast Asia and the Western Pacific Region and 28% of cases are African. In 2014, 1.5 million people worldwide die from TB. Tuberculosis is second only to Human immunodeficiency virus (HIV) as an infectious disease that causes most deaths in the world's population. Indonesia is a country located in Southeast Asia with the second largest number of TB cases in the world after India[14]. In 2014 TB cases in India and Indonesia, respectively, are 23% and 10% of cases. Based on the WHO report in 2015, the prevalence of TB cases in Indonesia in 2014, including HIV, 647 per 100,000 population[1,3].

According to the Global Tuberculosis Report WHO[14], estimated the incidence of tuberculosis in Indonesia in 2015 amounted to 395 cases/100,000 population and a mortality rate of 40/100,000 population (of HIV patients with TB are not counted) and 10/100,000 population in HIV patients with tuberculosis.models,according to calculations *Prediction* based on data tuberculosis prevalence survey 2013-2014. Estimates of the prevalence of tuberculosis in 2015 amounted to 643 per 100,000 population in 2016 and estimates as high as 628 per 100,000 populations[3,5].

The incidence of pulmonary tuberculosis is still very high and difficult lowered, this was due toissues non-medical such as; poverty, poor nutritional state, hygiene, low low purchasing power, low education cause failures and delays in getting a diagnosis[8].

Although widely available in TB treatment, but current TB treatment failure remains a major health problem worldwide. Therefore, the objective of this study was to evaluate the non-medical factors that influence the rate of treatment failure patients with tuberculosis (TB) in children Lung Health Center.

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Material and Method

This study is a quantitative research with cross sectional approach which has been conducted on June-September 2017 in four health centers in the region of Makassar. The population in this study was all mothers of children (aged 5-18 years) who received treatment of pulmonary tuberculosis at the sites. The samples of this study were all patients within 4-6 months of treatment. Our inclusion criteria are Sementra Tuberculosis patients in treatment, willing to become respondents and the age of 5 -18 years, so that a sample size of 42 respondents, taken by total sampling technique.

Data collection instrument was a questionnaire for respondents observe TB treatment failure. Questioners made by researchers and have tested the validity and reliability using the values of r and α values obtained chronbach of 0.8[2,4]. The method of data collection in this study with a total sampling where the entire population of the research sample[4].

Data analysis was performed with the statistical test Ratio Prevalence (RP). RP is characterized by a value of the confidence interval (confidence interval) which will determine whether the ratio of the prevalence of significant or not with the parameters: if the confidence interval passes (not including) the number 1 on the starting point, then the risk factors are meaningfully and if the confidence interval below (cover) number 1 at the starting point, it is not a significant risk factor[3]. Interpretation of the results of the ratio of prevalence at a value confidence interval (CI) is also based on the value ratio Prevalence (RP) with the parameters: if RP = 1, meaning that the independent variable is not a risk factor, if RP>1 and CI does not include numbers 1, meaning that the independent variable is a risk factor and if RP <1, CI no caps a numeral 1, which means that the independent variable is a protective factor or a deterrent. Data processing was performed using SPSS for Windows.

Findings

This study aimed to evaluate the role of non-medical factors against TB treatment failure in Makassar City Regional Health Center. Of the 42 respondents, the majority were in the age group 16 to 18 years (40.5%). Distriubsi sexes, male 25 respondents (59.5%) and women 17 respondents (40.5%). Most of the respondents graduated from high school (junior and senior) of 27 respondents (64.3%).

Table 1: Distribution Compliance factors of Tuberculosis disease in children in the health center of Makassar City Period from June to September 2017

Compliance Factors		f	%
Drinking Drug Compliance	None obedient.	17	40.5
	Obedient.	25	59.5
Family support	Does not support	17	40.5
	Supports	25	59.5
Treatment failure	failure	10	23.8
	No failure	32	76.2

Table 2: Children Education Level on Tuberculosis Treatment failure at Puskesmas Minasa Upa, Batua Raya, Antang Perumnas and Antang Makassar City, Period June-September 2017

Education Level	Failure Treatment		Total	P
	No	Yes		
No School/Non Graduate and graduated of Elementary	9	6	15	0,001
	21.4%	14.2%	35.7%	
Secondary Education (junior and senior)	1	26	2 7	
	2.4%	61.9%	64.3%	

Table 3: The level of knowledge of the Children on Tuberculosis Treatment Failure at Puskesmas Minasa Upa, Batua Raya, Antang Perumnas and Antang Makassar City, period June - September 2017

Knowledge	Treatment Failure		Total	P
	Yes	No		
High	9	6	15	0,001
	21.4%	14.3%	35.7%	
Low	1	26	27	
	2.4%	61.9%	64.3%	

Table 4: Obedience with taking medication with Tuberculosisi Treatment Failure Rate di Puskesmas Minasa Upa, Batua Raya, Antang Perumnas and Antang Makassar City, period June - September 2017

Obediance Rate	Treatment Failure		Number	P
	Yes	No		
Not obedient	9	8	17	0,004
	21.4%	19%	40.5%	
Obedient	1	24	25	
	2.4%	57.1%	59.5%	
Total	10	32	42	
	23.8%	76.2%	100%	

Table 5: Support the family on the children with Failure rate Tuberculosis treatment At Puskesmas Minasa Upa, Batua Raya, Antang Perumnas and Antang Makassar City period June - September 2017

	Failure treatment		Total	P
	Yes	No		
Support	7	10	17	0,038
	16.7%	23.8%	40.5%	
No support	3	22	25	
	71%	52.4%	59.5%	
Total	10	32	42	
	23.8%	76.2%	100%	

Table 6: Effect of Education, knowledge, not obedience, and family support to toward Tuberculosis Failure Treatment Rate at Puskesmas Minasa Upa, Batua Raya, Antang Perumnas and Antang Makassar City, period June - September 2017

Categorical variables	B	p	Exp (B)	For Exp (B)	
				Lower	Upper
Education	3,125	.048	22 752	1,032	501 786
Knowledge	3,125	.048	22 752	1,032	501 786
Obedience	2,920	.049	18 538	1,007	341 215
Support	-.339	.823	0,712	0,036	13.964

Discussion

Data analysis of the 42 respondents obtained through data collection in the health center: Minasa, Batua, Antang and Housing Antang Makassar, the results are as follows:

a. Education Level: Tabe3 9. Shows Bivariate analysis of test results that the value of OR = 39,000 with CI = 95%, P-Value = 0.001 <0, 05, and UL LL = 4.116 = 369.510. The value of RR = 16,200, LL = 2.266 and the value UL = 115.841 does not include the value of 1, then it is said to be meaningful and Ho rejected. Results of multivariate analysis showed the educational value of 22.752 with a level of 95% (P = 0.048 <0.05) value LL = 1.032 and the value UL = 501.786 does not include the number 1. The test results of bivariate and multivariate test results both showed that education has an influence very strong against pulmonary TB treatment failure in children.

Research[1] explains that the duration of TB treatment should be carried out for 6-8 months. Duration of time can cause the patient to become bored and impatient and cause undisciplined and disorganized to take medication that failed in the treatment, but for patients who have a good knowledge will continue to take medication appropriate treatment program. Further [10,11,12,13] explains that the failure of the treatment and cure TB patients contribute directly to the knowledge acquired through education[9,14].

Education can influence attitudes and behavior of someone who is a product of a learning process carried out consciously. Higher education for someone to be able to change the mindset formed a unified awareness in order to change a healthier lifestyle in everyday life. Although the level of education does not always directly Luru with TB disease yng enough education means not always a determinant of treatment success absoluteness of someone who is suffering from tuberculosis disease or illness Another[6,12,13].

b. Level of knowledge: Shows the results of analysis test Bivariat that the value of OR = 39,000 with CI = 95%, P-Value = 0.001,> 0.05, the value LL = 4.116 and the value UL = 369.510, the value of RR = 16,200, the value LL = 2.266 and the value UL = 115.841 not menckup value of 1, then it is said to be meaningful and Ho rejected. Multiavriat test results show the value of the knowledge of 22.752 with a level of 95% (P = 0.048 <0.05), values LL = 1.032 and the value UL = 501.786 does not include the number 1. Thus

both bivariate and multivariate testing both show that the level of knowledge has a very strong influence of treatment failure.

Knowledge is the result of the know and this occurred after people perform sensing on a particular object[9,11]. Knowledge is very important in shaping the mindset, attitudes and behavior and actions of a person. Health knowledge can help individuals to adapt to the disease, preventing complications and learn to solve problems when faced with a new situation.

Knowledge of TB patients about the disease are factors that affect the incidence of TB suffered by a patient, therefore, a good knowledge of the illness will make the patient aware and determined to do what should be done and so is what should not be done so as to maintain and avoid events worse, and when not protecting and maintaining health, in line with the research. Instead minimal knowledge about the illness, can not in itself raises awareness for the need for regular medical treatment. Within their health development goals to improve public health[5,7,8].

c. Noncompliance Drink Drugs: Results show that the value of OR = 27,000 with 95% CI, 0.004 P-Value, the value LL = 2.946 and the value UL = 247.487. The value of RR = 13.235, value LL = 1.842, the value UL = 95.093 does not include the value of 1, then it is said to be meaningful and Ho rejected. Results of multivariate analysis showed noncompliance value of 18.538 with a level of 95% (P = 0.049 <0.05) value LL = 1.007 and the value UL = 341.215 does not include the number 1. Both bivariate test results multivariate testing results show that the non-compliance has to take medicine strong influence on lung TB treatment failure in children while suffering from tuberculosis.

Compliance TB patients take medication regularly and on time is a crucial factor in the healing process Tuberculosis[13]. Compliance includes: schedule time to take medication, taking medications according to the number, type of drug, the dosage is in etiquette drug, drug spending, came to the health center regularly taking medication before the medicine runs out and always remember the advice of health officials. In line with the research that has been done by Muniroh et al that the results show the value of P-Value = 0.001 (P <0.05).

The high rates of treatment compliance due to the high level of motivation, education and knowledge, and understand the importance of health; it is also inseparable from the patient's awareness of the importance of healthy living.which says that the use of Anti-Tuberculosis Drugs (OAT) improper/ irregular or interrupted treatment can lead to drug resistance of Mycobacterium tuberculosis[3,5,8,10]. The other variable factors cause patients do not regularly seek treatment even stopped the treatment prematurely, namely the emergence of drug side-effects such as vertigo, nausea, vomiting and headache, which eventually gives rise to non-compliance, trust factor, factor bustle and lacking/not understand the reaction of the drug in the body. TB treatment takes a long time (4-6 months) to achieve healing and with a guide (a combination of) several kinds of drugs, so it is not uncommon patients stop taking medication before the treatment is completed which resulted in treatment failure[1,6,10,12].

Conclusion

There is a relationship with the education level of TB disease treatment failure in bivariate and multivariate analysis at 95% confidence showing OR value and the value of LL and UL> 1 so that the level of education is a risk factor for TB disease treatment failure in children.

There is a relationship with the knowledge level of TB disease treatment failure in bivariate and multivariate analysis at 95% confidence showing OR value and the value of LL and UL> 1 so that a low level of knowledge of a risk factor for TB disease treatment failure in children.

There is a relationship Take medication adherence with treatment failure of TB disease, the bivariate and multivariate analysis at 95% confidence showing OR value and the value of LL and UL> 1 so that non-compliance with taking medication is a risk factor for TB disease treatment failure in children.

There is no family support relationship with TB disease treatment failure, the multivariate analysis showed 95% CI indicates the value of OR and LL and UL <1 so that family support is a protective factor rather than as a risk factor for TB disease treatment failure in children.

Conflict of Interest Statement: This study there was no conflict of interest between the researcher and the subject

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Ethical Clearance: This study received ethical recommendations from the health research ethics commission of the Makassar Health Polytechnic No. 390/KEPK-PTKMKS/VII/2017.

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