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The Relationship of Social Support with Medication Adherence Pulmonary Tuberculosis Patients Through DOTS Strategy in Pidie Aceh Indonesia

[1*]Vera Nazhira Arifin, [1*]Juariah, [1*]Aslam Nur and [1*]Farhan M Uzair

[1]Peminatan Administrasi Kebijakan Kesehatan, Magister Kesehatan Masyarakat, Universitas Muhammadiyah Aceh, Banda Aceh, 23245

Email: veranazhira@siswa.um.edu.my, juariah239@gmail.com, aslam_nur@gmail.comfarhanuzair@gmail.com

Abstract. Pulmonary Tuberculosis is a infectious disease caused by Mycobacterium Tuberculosis and actually can be found aon a lung but may affect the other organs. The case of pulmonary TB with BTA + at Puskesmas Simpang Tiga in Pidie district is about 60 case at the year of 2014 and incrase to 84 case at 2015. This research is to investigatethe correlation of social support with pulmonary tuberculosis medication adherence with DOTS strategic at Puskesmas Simpang Tiga in Pidie District. This research is based on descriptive analytic with cross sectional design. Tis research sample is made by 80 total sampling. The statistical test used is the Logistic Regression test by using Stat 13. Results showed that 63.75% of respondents who obediently take medicine, 57.50% of respondents with poor emotional support, 57.50% of respondents with good informational support, 52.50% of respondents with good instrumental support, and 51.25 % of respondents with less rewards good support. The results of the bivariate analysis obtained emotional support (OR = 2.1, P value = 0.121), informational support (OR = 3.5, p value = 0.009), instrumental support (OR = 1.6, p value = 0.302), and support award (OR = 0.6, p value = 0.387). The results of the research conclude that the dominant informational support variable affect medication adherence with DOTS strategy on pulmonary TB patientswith the value (OR = 3.5, P value = 0.009).

1. Introduction

Tuberculosis (TB Lung) is an infectious disease caused by Mycobacterium Tuberculosis and is common in the lungs but may affect other organs. About 75% of Pulmonary TB patients are the most economically productive age group [1]. It became one of the global concerns because high TB Lung cases have a wide impact on the Aquality of life, social and economic even threaten the life of human [2].

The World Health Organization (WHO) in 2008 stated that tuberculosis is now a global threat [3]. According to WHO, 1.7 billion people worldwide have been infected with Mycobacterium Tuberculosis, 8.8 million people suffer from tuberculosis every year and about one-third of the world's population is estimated to be infected with three million deaths per year, that in every second there is

one person infected [4]. Worldwide, 9.6 million people are estimated to have Pulmonary TB by 2014, ie 5.4 million men, 3.2 million women and 1.0 million children. Globally, 12% of the new 9.6 million cases of Pulmonary TB in 2014 are HIV-positive [5].

The World Health Organization (WHO) in 1995 recommended the Directly Observed Treatment Short course Strategy (DOTS) as the most appropriate healthcare approach to tackle TBC problems in Indonesia, especially the success of TB case finding which is expected to reach target [6].

The number of new cases (case notiffication rate / CNR) of pulmonary TB with AFB + in the province of Aceh in 2014 amounted to 4,062 cases increased from the year 2013 which only amounted to 3,815 cases [7].

Based on data obtained from Puskemas Simpang Tiga Pidie District, there are 60 cases of tuberculosis in 2014, from 60 people who treated, 54 people declared cured (90%) and 6 people (10%) otherwise Drop Out. In 2015, it increased to 84 cases. The increasing number of tuberculosis sufferers in SimpangTiga sub-district of Pidie is caused by the lack of community understanding about tuberculosis and the mode of transmission and compliance in the treatment program that is still lacking in patients with pulmonary tuberculosis This research is to investigate the correlation of social support with pulmonary tuberculosis medication adherence with DOTS strategic at Puskesmas Simpang Tiga in Pidie District. This research is based on descriptive analytic with cross sectional design. Tis research sample is made by 80 total sampling. The statistical test used is the Logistic Regression test by using Stat 13.

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2. Research Method

The method used in this research is survey with cross sectional approach. The population in this study were all patients with pulmonary tuberculosis who had undergone tuberculosis treatment with DOTS strategy in Simpang Tiga Pidie Public Health Center in 2013 until 2016 which amounted to 80 people. The sample used in this study is the total population of all pulmonary tuberculosis patients treated with DOTS strategy in Simpang Puskesmas that is 80 samples. Data analysis is done by using Chi-Square Test and logistic regression test with $\alpha = 0,05$.

3. Result

a. Univariate Analysis

Table 1 shows that the frequency distribution of patients who adhere to take drugs is 67.75% higher compared to respondents who do not adhere to take medication which is 36.25%. Poor emotional support is higher 57.5% compared to emotional good 42.5%, good informational support is higher 57.5% compared to poor informational support 42.5%, good instrumental support higher 52.5% compared to support instrumental is not good 47.5%. And award support was 51.25% higher than good award support 48.75%.

Table 1 Univariate analysis

Variables	Sub Variable	Frequency	Percentage (%)
Medication Adherence	obedient	51	63.75
	disobedient	29	36.25
Emosional Support	Good	34	42.5
	Not Good	46	57.5
Informational Support	Good	46	57.5
	Not Good	34	42.5
Instrumental Support	Good	42	52.5
	Not Good	38	47.5
Award Support	Good	39	48.75
	Not Good	41	51.25

Source: Data processed Year 2017 by SPSS

b. Bivariate Analysis

Table 2 shows the results of bivariate analysis using chi square test, It shows that the proportion of respondents who obediently took pulmonary TB medicine with the DOTS strategy in respondents with good emotional support 73.53% and respondents with less emotional support 56.52%. While the proportion of respondents who did not adhere to taking pulmonary TB medicine with the DOTS strategy, in respondents with good emotional support 26.47% and respondents with emotional support less 43.48%. The results of the logistic regression statistical test obtained a P value of 0.121, meaning that there is no relationship between emotional support and compliance with taking medication

Table 2 Bivariate analysis

Variables	Sub Variables	Obedient				Total		OR (95% CI)	P *Value*
		obedient		disobedient					
		f	%	F	%	f	%		
Emosional Support	Good	25	73.53	9	26.47	34	100	2.1 (0.82-5.58)	0.121
	Not Good	26	56.52	20	43.48	46	100		
Informational Support	Good	35	70.9	11	23.91	46	100	3.6 (1.38- 9.30)	0.009
	Not Good	16	47.06	18	52.94	34	100		
Instrumental Support	Good	29	69.05	13	30.95	42	100	1.6 (0.65-4.06)	0.302
	Not Good	22	57.89	16	42.11	38	100		
Award Support	Good	23	58.97	16	41.03	39	100	0.667 (0.27-1.67)	0.387
	Not Good	28	68.29	13	31.71	41	100		

Source: Data processed Year 2017 by SPSS

The proportion of obedient respondents taking pulmonary TB medicine with a DOTS strategy was higher in respondents with good informational support 76.09% compared to respondents with less informational support as much as 47.06%. While the proportion of respondents who did not adhere to taking pulmonary TB medicine with a DOTS strategy was higher in respondents with less informational support 52.94% compared to respondents with good informational support 23.91%. The results of the logistic regression statistical test obtained a P value of 0.009, which means that there is a significant relationship between informational support and compliance with medication.

The proportion of respondents who were obedient in taking pulmonary TB drugs with a DOTS strategy was higher in respondents with good instrumental support 69.05% compared to respondents with instrumental support of less than 57.89%. While the proportion of respondents who did not adhere to taking pulmonary TB medicine with a DOTS strategy was higher in respondents with less instrumental support 42.11% compared to respondents with good instrumental support 30.95%. The results of the logistic regression statistical test obtained a value of P value of 0.302, meaning that there is no relationship between the support of personnel and compliance with taking medication.

The proportion of obedient respondents in taking pulmonary TB medication with a DOTS strategy was higher in respondents with less award support 68.29% compared to respondents with good award support 58.97%. Whereas the proportion of respondents who did not adhere to taking pulmonary TB medicine with the DOTS strategy was higher in respondents with good award support 41.03% compared to respondents with less appreciation support 31.71%. The results of the logistic regression statistical test obtained a P value of 0.387, meaning that there was no relationship between award support and medication compliance.

c. Multivariate Analysis

Based on Table 3, the results of multivariate analysis using logistic regression tests, it can be concluded that from all the independent variables that are thought to influence medication adherence in pulmonary TB patients with the DOTS strategy there is one variable (informational support) that most influences the compliance with taking p drugs. value 0,009 <0,05. The biggest OR value obtained is 3.6, which means that good informational support has a 3.6 times chance of adhering to medication for pulmonary TB patients with the DOTS strategy.

Table 3 Multivariate analysis

RegresiLogistik Test	Variables	CI 95%	Odds Ratio	P *Value*
2 variables	Emosional Support	0.34-3.57	1.1	0.861
	Informational Support	1.09-10.52	3.4	0.035
1 variable	Informational Support	1.38-9.30	3.6	0.009

Source: Data processed Year 2017 By SPSS

4. Discussion

a. Emotional Support relationship with medication adherence of Pulmonary Tuberculosis Patients

Based on the analysis of the relationship between emotional support and the adherence of medication to patients with pulmonary tuberculosis with DOTS strategy, statistical test result showed no significant relationship between emotional support and medication adherence in pulmonary tuberculosis patients based on DOTS strategy with P value 0.121. From the results of logistic regression analysis obtained values (OR = 2.1, 95% CI: 0.818-5.576). The results of this analysis show that good emotional support has a 2.1 times chance of medication adherence in patients with pulmonary TB with DOTS strategies compared with respondents who have poor emotional support.

Emotional support includes empathy expression, caring, and concern given by Medication supervisor to the TB Patient[8]. For example, medication supervisor feel the pain of TB sufferers (empathy), take care if there are complaints that are felt. This support will cause the recipient to feel comfortable, at ease back, feel owned and loved when he or she is under stress, providing assistance in the form of spirit, personal warmth, and love.

Emotional support in the form of appreciation, love, trust, attention, and willingness to hear. Emotional attention expressed through love, love or empathy, for example when in contention with a loved one, the expression of attention from friends is helpful [9].

The researchers argue that the role of the family is very important in the stages of health care from the stage of health improvement, prevention, treatment to rehabilitation. With a sense of affection from the family, there are always accompanying, and a sense of attention will make the individual feel comfortable, confident and loved so that individuals can face problems better.

b. Informational Support relationship with medication adherence of Pulmonary Tuberculosis patients

Based on the analysis of informational support relationship with the adherence of medicines for tuberculosis patients with the DOTS strategy, the statistical test shows that there is a significant relationship between informational support and medication adherence in pulmonary tuberculosis patients based on DOTS strategy with P value 0.009.

From the analysis of logistic regression test also obtained values (OR = 3.6, 95% CI: 1.377-9.304). The results of this analysis indicate that good informational support has a 3.6 times chance of drug adherence in patients with pulmonary TB with DOTS strategies compared with respondents who have poor informational support.

Informational supports are the support provided in the form of information about the knowledge of TB disease, advice if the patient is stressed due to drug side effects or advice and feedback guidelines. Important information about TB disease that TB sufferers should be aware of: causes and symptoms, mode of transmission and prevention, proper and proper treatment, and treatment side effects.

Lung TB Knowledge is divided: 1) Causes and symptoms of tuberculosis which consists of knowing what causes and understand the early symptoms of TB disease. 2) Mode of transmission and prevention that consists of knowing the ways of transmission and understanding the ways of prevention of TB disease. 3) Drugs, modes of treatment, and side effects of medications consisting of knowing which TB drugs to drink, getting used to take the right medication, and knowing the side effects of the drug and understanding how to deal with side effects[10].

A study found that there is a relationship between family informational support with medication adherence to patients with pulmonary tuberculosis, meaning that the family who served as medication supervisor gave unfavorable risk support at 3,013 times to cause patients to disobey sputum checks in the final phase treatment compared with patients who have good family support [11].

The researchers argue that family support is interrelated and mutually influence between fellow members and will also affect the families around him or the surrounding community with the information provided make changes to someone. Information is needed TBC patients in the treatment period so as not to cause relapse, with the amount of information obtained the more knowledge gained.

c. Instrumental Support Relationship with medication adherence of Pulmonary Tuberculosis patients.

Based on the analysis of instrumental support relationship with medication adherence of tuberculosis patients with DOTS strategy, statistic test showed no significant relationship between instrumental supports with medication adherence of pulmonary tuberculosis patients based on DOTS strategy with P value 0.302. From the analysis of logistic regression test obtained value (OR = 1.622, 95% CI: 0.647-4.062).

The results of this analysis indicate that good instrumental support has a probability of 1.622 times of drug adherence in patients with pulmonary TB with DOTS strategy compared with respondents who have poor instrumental support.

Instrumental support is the support in the form of provision of facilities that can facilitate the goals to be achieved. Support can be direct assistance in the form of materials or services such as: giving loans, giving money to people with TB for transportation costs if needed, or helping them by taking drugs from Puskesmas at the time required.

These supports show the availability of goods (material) or the existence of services from others who can assist individuals in solving the problem. Furthermore it will allow the individual to be able to fulfill the responsibility in completing or running the treatment process in accordance with the advice of the place where he was treated.

d. Awards Support relationship with medication adherence of Pulmonary Tuberculosis patients.

Based on the analysis of reward support relationships with medication adherence of patients with pulmonary tuberculosis with DOTS strategy, statistical test showed that there was no significant relationship between award support and medication adherence in pulmonary tuberculosis patients based on DOTS strategy with P value 0.387. From the results of logistic regression analysis obtained values (OR = 0.667, 95% CI: 0.266-1.668). The results of this analysis indicate that good award support has a 0.667-fold chance of medication adherence in patients with pulmonary TB with DOTS strategies compared with respondents who have poor support awards.

Award support is a positive expression (reward) for the person for the effort done, providing feedback on results or achievements, encouragement or approval with individual ideas or feelings, and the person's positive comparison with others[12]. Usually this support is provided by a superior or co-worker. This support will help to wake up valuable, competent and valuable feelings.

5. Conclusion

Based on research conducted at Puskesmas Simpang Tiga on 25-30 August 2016 with the title, family social support relationship with medication adherence of patient of tuberculosis, it can be concluded that there is a significant relationship between informational support to medication adherence in patients with TB Lung with DOTS strategy compared with emotional support variables, instrumental support and award support that have no significant relationship with medication adherence in patients with pulmonary tuberculosis with DOTS strategies at Puskesmas Simpang Tiga Pidie District 2016. Therefore, the better informational support the patients receives from their family, the more obedient of the patient to take pulmonary TB drugs with DOTS strategy.

6. Recommendation

It is expected that the patients and their family is provided with clear and complete information of pulmonary tuberculosis and its treatment. Moreover, the awareness of Pulmonary Tuberculosis Patients should be increase so that the patients will likely to adhere the medication treatment. The evaluation should also be conducted to the patient with low medication adherence to cure the infection.

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