

ANALYSIS OF FACTORS AFFECTING THE ADHERENCE OF TAKING ANTITUBERCULOSIS DRUGS AT PUSKESMAS MALANG CITY

by Rudy Mardianto

Submission date: 18-Apr-2023 10:55AM (UTC+0700)

Submission ID: 2067989258

File name: Journal_-_Rudy_Mardianto.docx (43.46K)

Word count: 2351

Character count: 13564

11

ANALISIS FAKTOR YANG MEMPENGARUHI KETAATAN MINUM OBAT ANTITUBERKULOSIS DI PUSKESMAS KOTA MALANG

11

ANALYSIS OF FACTORS AFFECTING THE ADHERENCE OF TAKING ANTITUBERCULOSIS DRUGS AT PUSKESMAS MALANG CITY

Rudy Mardianto

9

ABSTRAK

Tuberkulosis (TBC) merupakan penyakit infeksi menular yang disebabkan oleh bakteri *Mycobacterium tuberculosis*. Tingginya angka kematian akibat penyakit TBC dikaitkan dengan kasus resistensi akibat rendahnya kepatuhan minum obat. Penelitian bertujuan mengetahui pengaruh umur, jumlah anggota keluarga dan motivasi keluarga terhadap kepatuhan minum obat antituberkulosis. Desain penelitian observasional dengan pendekatan *cross sectional*. Subyek adalah pasien tuberkulosis rawat jalan yang memenuhi kriteria sebanyak 52 orang selama periode Juli-Agustus 2022 di puskesmas kota Malang. Hasil penelitian umur terbanyak adalah 26-35 tahun sebanyak 26,92%. Jumlah anggota keluarga terbanyak 3-4 orang sebesar 61,54%. Motivasi keluarga terbanyak dengan kategori kuat sebesar 86,54%. Hasil uji regresi ordinal menunjukkan bahwa umur memiliki *p value* 0,045. Jumlah anggota keluarga memiliki *p value* 0,127. Motivasi keluarga memiliki *p value* 0,040. Kesimpulan adalah umur dan motivasi keluarga mempengaruhi ketaatan minum obat dengan *p value* <0,05. Jumlah anggota keluarga tidak mempengaruhi ketaatan minum obat dengan *p value* >0,05. Umur, jumlah anggota keluarga dan motivasi keluarga secara simultan mempengaruhi ketaatan minum obat sebesar 23,7% sedangkan 76,3% dipengaruhi faktor lain yang tidak diteliti.

1

Kata kunci : Ketaatan minum obat, Motivasi keluarga, Tuberkulosis

ABSTRACT

Tuberculosis (TBC) is an infectious disease caused by Mycobacterium tuberculosis. The high mortality rate from TBC disease is associated with cases of resistance due to low adherence to taking medication. The study aims to determine the effect of age, the number of family members, and family support on adherence to taking antituberculosis drugs. The study design was observational with a cross-sectional approach. The subjects were outpatient tuberculosis patients who met the inclusion and exclusion criteria of 52 people during the July-August 2022 period at puskesmas Malang city. The results of the study of the most age were 26-35 years as much as 26.92%. The highest number of family members is 3-4 people at 61.54%. The most family support is in a strong category at 86.54%. The results of the ordinal regression test show that age has a p-value of 0.045. The number of family members has a p-value of 0.127. Family support has a p-value of 0.040. The conclusion was that age and family support affected medication adherence with a p-value of <0.05. The number of family members did not affect medication adherence with a p-value of >0.05. Age, number of family members, and family support simultaneously influenced medication adherence by 23.7% while 76.3% were influenced by other factors not studied.

1

Keywords: Adherence to taking medication, Family support, Tuberculosis

INTRODUCTION

Tuberculosis (TBC) is an infectious disease caused by the bacterium *Mycobacterium tuberculosis* (MTB). Tuberculosis ranked 13th globally in 2019. According to the World Health Organization, an estimated 10.6 million people were infected with TBC disease in 2021 (WHO, 2023). The death rate due to TBC disease in Indonesia is 150,000 people in 2021.

The high mortality rate from TBC disease is associated with cases of bacterial resistance to antituberculosis drugs. According to WHO, (2023) there are 70,000 cases of resistance per year in the period 2015–2021. Resistance is associated with relapses due to low adherence to taking medication. Relapse cases worldwide are estimated at 6,423,5200 per year (WHO, 2023). Previous research has shown that age, education, occupation, income, lack of knowledge, alcohol, and smoking are not associated with the development of *Drug Resistant TBC* (DR-TBC). Risk factors that increase DR-TBC are adherence to treatment, side effects, contact history, and distance to healthcare facilities (Partowidigdo, 2021).

The purpose of the study was to determine the effect of age, number of family members, and family motivation on adherence to taking antituberculosis drugs. Previous studies have linked family motivation to medication adherence and identified adherence but did not observe the simultaneous influence of age, the number of family members, and family motivation variables on medication adherence. This study is expected not to ignore age, number of family members, and family motivation in the treatment of TBC patients. Knowledge of the risk factors affecting medication adherence is expected to be considered for making comprehensive treatment decisions.

METHOD

Observational research design with the cross-sectional approach. Feasibility, namely age, number of family members, family motivation, and dependent variables, namely adherence to taking medication. The population is outpatient TBC patients seeking treatment at 5 health centers in Malang during the period July-August 2022. The sampling method was purposive sampling and obtained subjects as many as 52 people who met the inclusion criteria, namely, 1) Patients aged >17 years, 2) No comorbidities, 3) Patients who have used drugs > 1 month. Exclusion criteria, namely 1) Retreatment patients.

Instrument

The Perceived Social Support from Family Scale (PSSA Fa) questionnaire was used to measure family motivation. The measurement results are categorized into 3, namely strong, weak, and no motivation. The Morisky Medication Adherence Scale-8 (MMAS-8) questionnaire was used to measure medication adherence. The measurement results are categorized into 3, namely obedient, disobedient, and disobedient.

Procedure

Data collection was carried out after passing the ethical test at IIK STRADA Indonesia Kediri with certificate number: 2984/KEPK/VI/2022. Data was collected after the questionnaire was filled out by the patient. Data processing is carried out in editing, coding, entry, and cleaning processes.

Analysis

Data analysis using ordinal regression test with SPSS Version 25 software to determine the effect of the independent variable on the dependent variable with $p\text{-value} = 0.05$.

RESULTS AND DISCUSSION

Table I. Patient Demographics

Characteristics of the patient	Sum (N)	Percentage (%)
--------------------------------	---------	----------------

Age (Years)		
17-25	10	19,23
26-35	14	26,92
36-45	7	13,46
46-55	12	23,08
56-60	4	7,69
>60	5	9,62
Gender		
Male	31	59,62
Female	21	40,38
Education		
Elementary school	17	32,69
Middle school	11	21,15
High school	17	32,69
Bachelor	2	3,85
Sarjana	5	9,62
Employment		
Employed	44	84,62
Not employed	8	15,38
Number of Family Members		
1-2	7	13,46
3-4	32	61,54
5-6	9	17,31
>6	4	7,69
Total	52	100

Table II. The Effect of Age, Number of Family Members and Family Motivation on Adherence to Taking Medication

Variable	Category	Adherence of taking medication						Total	p value
		Adherence		Low Adherence		Unadherence			
		n	%	n	%	n	%		
Age (years)	17-25	0	0	8	80	2	20	10	0,045
	26-35	1	7,14	8	57,14	5	35,71	14	
	36-45	1	14,29	5	71,43	1	14,29	7	
	46-55	3	25	9	75	0	0	12	
	56-60	2	50	0	0	2	50	4	
	>60	3	60	1	25	1	20	5	
Number of family members	1-2	1	14,29	5	71,43	1	14,29	7	0,127
	3-4	5	15,63	22	68,75	5	15,63	32	
	5-6	2	22,22	5	55,56	2	22,22	9	
	>6	0	0	1	25	3	75	4	
Family motivation	Strong	7	15,56	31	68,89	7	15,56	45	0,040
	Weak	1	16,67	1	16,67	4	66,67	6	
	No motivation	0	0	1	100	0	0	1	

Based on Table I shows that most patients are aged 26-34 years. Male patients tend to be more numerous than female. Patients with a high school education have the highest number. Most types of patient jobs are self-employed. The maximum number of family members is 3-4 people. According WHO (2023) shows that male TBC patients are more than women and

the age of TBC patients is mostly 25-34 years (WHO, 2023). The results showed that there was conformity with WHO data.

Based on Table II shows that the most family motivation with a strong category is 86.54%. Family members are related to the role as drug swallowing supervisors (PMO) involved by health workers at the puskesmas and are expected to motivate patients for successful treatment. Previous research has shown that family motivation is related to adherence to taking antituberculosis drugs (Pitters et al., 2019). Disobedience to taking medication is also caused by low levels of knowledge about TBC, poor relationship between patients and health workers, fears about drug side effects, the role of PMO is not optimal and long use of drugs and patients feel cured (Asriwati et al., 2021).

A good doctor-patient relationship and knowledge related to TBC contribute to medication adherence (Chen et al., 2020). Low medication adherence can also be attributed to patients' low knowledge of tuberculosis, poor self-management, and traditional medicine (Zhang et al., 2020). Side effects of drugs, motivation from PMO, comorbidities, feeling healed, and patients feeling bored taking drugs are also behind obedience (Depo and Pademme, 2022). Reinforced by different studies show that side effects of antituberculosis drugs are related to adherence to taking drugs (Christy, Susanti, and Nurmainah, 2022). Based on previous research, shows that family knowledge and motivation are related to attitudes (Sukartini, Hidayati, and Khoirunisa, 2019). Family motivation affects medication adherence in TBC patients (Irnawati, T Siagian, and Ottay, 2016), (Trilianto et al., 2020). Data from different studies show that marital status, annual income, supervision of medical personnel, and patient knowledge about anti-tuberculosis treatment are essential to improve patient treatment adherence (Fang et al., 2019). Low knowledge, loss of income, stigma, lack of social motivation, drug side effects, and duration of treatment appear as important barriers to adherence to treatment (Gebreweld et al., 2018).

TBC disease cure is a coordinated approach that includes not only clinical services but also strong family motivation and community motivation needed during the treatment process (Saqib, Ahmad, and Panezai, 2019). Family motivation on emotional, informational, material, and reward aspects is needed during the patient's healing and recovery process (Nasution et al., 2020). Increasing public knowledge about TBC is a strategy to increase awareness of TBC disease (Luba et al., 2019). Based on previous research, it appears that the attitude of tuberculosis patients is related to adherence to the recommendation to take anti-tuberculosis drugs (Dian Novita Hanggi, 2020). Adherence to taking medication is influenced by the level of knowledge about TBC disease, family motivation, and the patient's family attitude (Dewi, 2021).

Based on Table II shows that age has a p-value of 0.045 or < 0.05 , meaning that there is an influence of age on the adherence to taking drugs. The number of family members has a p-value of 0.127 or > 0.05 , meaning that there is no influence on the number of family members on the adherence to taking medicine. Family motivation has a p-value of 0.040 or < 0.05 , meaning that family motivation affects adherence to taking medication. Based on the results of ordinal regression tests showed that age, number of families, and family motivation simultaneously influenced adherence to taking medication by 23.7% while 76.3% was influenced by other factors that were not carried out.

CONCLUSION

Age and family motivation affect the observance of taking antituberculosis drugs at the Malang health center. The number of family members does not affect the observance of taking medicine. Age, number of family members, and family motivation simultaneously affect the adherence to taking medication in TB patients at puskesmas Malang city.

ACKNOWLEDGMENTS

Thank you to the officers at the puskesmas who played a role in this research.

REFERENCE

- Asriwati *et al.* (2021) 'Risk factors analysis of non-compliance of Tuberculosis (TB) patients taking medicine in Puskesmas Polonia, Medan, 2021', *Gaceta Sanitaria*, 35, pp. S227–S230. doi: 10.1016/j.gaceta.2021.10.027.
- Chen, X. *et al.* (2020) 'The effects of family, society and national policy support on treatment adherence among newly diagnosed tuberculosis patients: A cross-sectional study', *BMC Infectious Diseases*. *BMC Infectious Diseases*, 20(1), pp. 1–11. doi: 10.1186/s12879-020-05354-3.
- Christy, B. A., Susanti, R. and Nurmainah (2022) 'Hubungan Tingkat Kepatuhan Minum Obat Pasien Tuberkulosis Terhadap Efek Samping Obat Anti Tuberkulosis (OAT)', *Journal Syifa Sciences and Clinical Research*, 4(2), pp. 484–493.
- Depo, M. and Pademme, D. (2022) 'Faktor yang berhubungan dengan kepatuhan berobat penderita tuberkulosis paru di kota Sorong', *Jurnal Teknosains*, 11(2), p. 174. doi: 10.22146/teknosains.61225.
- Dewi, S. W. (2021) 'Upaya Pengendalian Tuberkulosis dengan Meningkatkan Kepatuhan Minum Obat Anti Tuberkulosis', *Media Kesehatan Masyarakat Indonesia*, 20(3), pp. 200–205. doi: 10.14710/mkmi.20.3.200-205.
- Dian Novita Hanggi (2020) 'Analysis Of Knowledge And Attitude Of Lung Tb Patients With Anti Tuberculosis Drug Compliance', *Journal of Applied Nursing and Health*, 2(2 SE-Articles), pp. 36–41.
- Fang, X. H. *et al.* (2019) 'Prevalence of and factors influencing anti-tuberculosis treatment non-adherence among patients with pulmonary tuberculosis: A cross-sectional study in Anhui Province, Eastern China', *Medical Science Monitor*, 25, pp. 1928–1935. doi: 10.12659/MSM.913510.
- Gebreweld, F. H. *et al.* (2018) 'Factors influencing adherence to tuberculosis treatment in Asmara, Eritrea: A qualitative study', *Journal of Health, Population and Nutrition*. *Journal of Health, Population and Nutrition*, 37(1), pp. 1–9. doi: 10.1186/s41043-017-0132-y.
- Irnawati, M. N., T Siagian, I. E. and Ottay, R. I. (2016) 'Pengaruh dukungan keluarga terhadap kepatuhan minum obat pada penderita tuberkulosis di puskesmas Motoboi Kecil Kota Kotamobagu', *Jurnal Kedokteran Komunitas dan Tropik*, 4(2), pp. 59–64. Available at: <https://ejournal.unsrat.ac.id/index.php/JKKT/article/view/11274>.
- Luba, T. R. *et al.* (2019) 'Knowledge, attitude and associated factors towards tuberculosis in Lesotho: A population based study', *BMC Infectious Diseases*. *BMC Infectious Diseases*, 19(1), pp. 1–10. doi: 10.1186/s12879-019-3688-x.
- Nasution, S. Z. *et al.* (2020) 'Family Support Perceived among Pulmonary Tuberculosis (TB) Patients in Medan, Indonesia', (3), pp. 188–195. doi: 10.5220/0008788701880195.
- Partowidigdo, M. G. (2021) 'Factors influenced of drug-resistant tuberculosis and non- drug-resistant tuberculosis patients in Pulmonary Hospital', 3(2), pp. 238–248.
- Pitters, T. S. *et al.* (2019) 'Dukungan Keluarga Dalam Hubungannya Dengan Kepatuhan Minum Obat Pada Pasien Tuberculosis Paru Di Puskesmas Ranotana Weru', *Kesmas*, 7(5).
- Saqib, S. E., Ahmad, M. M. and Panezai, S. (2019) 'Care and social support from family and community in patients with pulmonary tuberculosis in Pakistan', *Family Medicine and Community Health*, 7(4), pp. 1–9. doi: 10.1136/fmch-2019-000121.
- Sukartini, T., Hidayati, L. and Khoirunisa, N. (2019) 'Knowledge, Family and Social Support, Self Efficacy and Self-Care Behaviour in Pulmonary Tuberculosis Patients', *Jurnal Keperawatan Soedirman*, 14(2). doi: 10.20884/1.jks.2019.14.2.1011.
- Trilianto, A. E. *et al.* (2020) 'Hubungan Dukungan Keluarga Dengan Kepatuhan Pengobatan Klien Tuberkulosis Di Kabupaten Bondowoso', *Jurnal Ilmu Kesehatan MAKIA*, 10(1), pp. 1–9. doi: 10.37413/jmakia.v10i1.16.
- WHO (2023) *Drug Resistent TB*. Available at: <https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022/tb-disease->

burden/2-3-drug-resistant-tb (Accessed: 21 March 2023).

Zhang, J. *et al.* (2020) 'Factors influencing medication nonadherence to pulmonary tuberculosis treatment in tibet, china: A qualitative study from the patient perspective', *Patient Preference and Adherence*, 14, pp. 1149–1158. doi: 10.2147/PPA.S252448.

ANALYSIS OF FACTORS AFFECTING THE ADHERENCE OF TAKING ANTITUBERCULOSIS DRUGS AT PUSKESMAS MALANG CITY

ORIGINALITY REPORT

12%

SIMILARITY INDEX

10%

INTERNET SOURCES

9%

PUBLICATIONS

2%

STUDENT PAPERS

PRIMARY SOURCES

- 1 Elza Yunita, Lira Mufti Azzahri Isnaeni, Nur Afrinis. "HUBUNGAN TINGKAT KEPATUHAN MINUM OBAT DAN MOTIVASI KELUARGA DENGAN KEKAMBUHAN PENDERITA TB PARU DI PARU CENTER AULIA HOSPITAL PEKANBARU", Jurnal Kesehatan Tambusai, 2020
Publication 1%
- 2 M. Radwan. "IMPACT OF COVID19 PANDEMIC ON FAMILY RELATIONS IN BAMHA VILLAGE, AL AYAT DISTRICT, GIZA GOVERNORATE", Egyptian Journal of Agricultural Sciences, 2020
Publication 1%
- 3 Elisabet Matulesy, Chendy Sofianty Pelatta, Ravenska Pattiwael. "Studi Literatur Faktor-Faktor Yang Berhubungan Dengan Kepatuhan Minum Obat Anti Tuberculosis (OAT) Pada Pasien TBC", MOLUCCAS HEALTH JOURNAL, 2021
Publication 1%

4	jhpn.biomedcentral.com Internet Source	1 %
5	journal.stikep-ppnijabar.ac.id Internet Source	1 %
6	www.ejurnal-analiskesehatan.web.id Internet Source	1 %
7	healthpolicy-watch.news Internet Source	1 %
8	www.researchgate.net Internet Source	1 %
9	123dok.com Internet Source	1 %
10	Prita Humairoh, Faisal Rakhman. "Pengaruh Financing to Deposit Ratio dan Non Performing Financing terhadap Return on Assets (Studi Kasus Bank Syariah Mandiri)", Jurnal Accounting Information System (AIMS), 2020 Publication	1 %
11	repository.unair.ac.id Internet Source	1 %
12	eprints.utar.edu.my Internet Source	1 %
13	akper-sandikarsa.e-journal.id Internet Source	1 %

14	escholarship.org Internet Source	1 %
15	e-journal.unair.ac.id Internet Source	<1 %
16	jonuns.com Internet Source	<1 %
17	journals.plos.org Internet Source	<1 %
18	medic.upm.edu.my Internet Source	<1 %
19	www.gacetasanitaria.org Internet Source	<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On