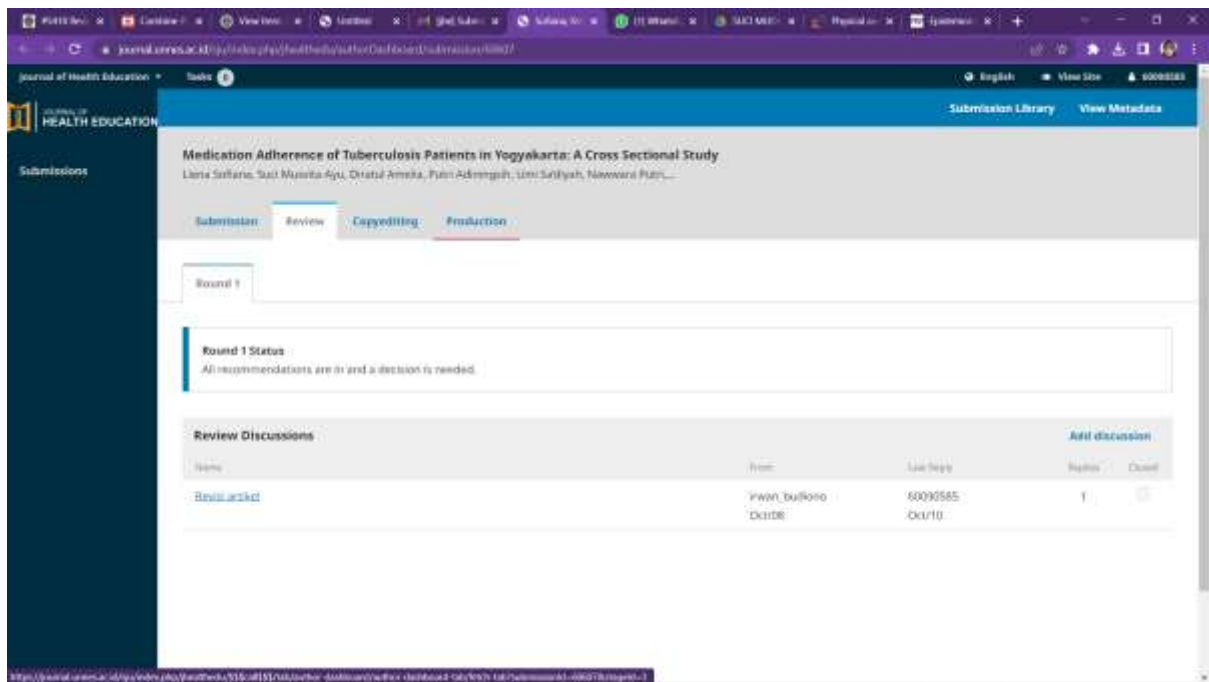


# BUKTI KORESPONDENSI

## “Medication Adherence of Tuberculosis Patients in Yogyakarta: A Cross Sectional Study”



Review dari reviewer terlampir:

## Medication Adherence of Tuberculosis Patients in Yogyakarta: A Cross Sectional Study

Liena Sofiana<sup>1\*</sup>, Suci Musvita Ayu<sup>2</sup>, Diratul Amelia<sup>3</sup>, Putri Adiningsih<sup>4</sup>, Umi Sa'diyah<sup>5</sup>, Nawwara Putri<sup>6</sup>, Anggi Rahmatul Azizah<sup>7</sup>, Aqna Aulya Safitri<sup>8</sup>

Fakultas Kesehatan Masyarakat, Universitas Ahmad Dahlan, Indonesia

### ABSTRACT

**Background:** Tuberculosis (TBC) is one of the infectious diseases that is a major health problem in the world. The disease usually affects the lungs but can also affect other sites. Treatment adherence is the most important component in achieving treatment success. Medication compliance can also be interpreted as the extent to which the patient consumes the drug in accordance with the provisions that have been given by the doctor. This study was conducted to determine the factors associated with adherence to treatment of TBC patients in the city of Yogyakarta. **Methods:** This research is an analytic observational study with a cross sectional approach. The population in this study included all pulmonary TBC patients in 18 health center in Yogyakarta and still undergoing treatment, a sample of 75 people was obtained. The data was collected using questionnaires. Then data were analyzed using chi-square test with a significance value of  $\leq 0,05$ . **Result:** The results of this study indicate that factors related to medication adherence in tuberculosis patient are knowledge (sig=0.016) and attitude (sig=0.038), while the factors that are not related to medication adherence are self-efficacy (sig=1.000), motivation (sig=0.375), family support (sig=0.700), support for health workers (sig=0.353) and stigma (sig=0.754) with adherence to treatment of TBC patients in Yogyakarta City. **Conclusions:** Knowledge and attitude are risk factors for medication adherence in tuberculosis patients in Yogyakarta City.

**KEYWORDS:** attitude; knowledge; medication adherence; related factors; tuberculosis

**Corresponding Author:** Liena Sofiana, Fakultas Kesehatan Masyarakat, Universitas Ahmad Dahlan, Indonesia; Jalan Prof. Dr. Soepomo Janturan Warungboto Umbulharjo Yogyakarta, telp. (0274) 563515, [liena.sofiana@ikm.uad.ac.id](mailto:liena.sofiana@ikm.uad.ac.id)

### INTRODUCTION

Tuberculosis (TBC) is one of the infectious diseases that is a major health problem in the world. Tuberculosis is listed as one of the top 10 diseases that cause death in the world (WHO, 2020). Globally, in 2016 there were 10.4 million incident cases of tuberculosis, equivalent to 120 cases per 100,000 population. Most of these cases occurred in Southeast Asia, which was 45% and in Africa, 25%. Based on the overall incidence of tuberculosis in the world, there are five countries with the highest incidence including India, Indonesia, China, the Philippines, and Pakistan. WHO also categorizes High Burden Countries (HBC) for TBC based on 3 indicators, namely TBC, TB/HIV, and Multidrug Resistant Tuberculosis (MDR-TB). Based on these three indicators, Indonesia is a country that is included in the high burden list (HBC) for each category. Based on this, it means that Indonesia has big problems in dealing with TBC (Kemenkes RI, 2018).

The incidence of tuberculosis in Indonesia in 2018 was 316 per 100,000 population. Meanwhile, the death rate for TBC patients is 40 per 100,000 population. In 2019, the number of TBC cases found was 543,874 cases. This figure decreased when compared to all cases of tuberculosis found in 2018 which were 566,623 cases. The Case Detection Rate (CDR) of tuberculosis cases in 2019 increased compared to the previous 10 years, which was 64.5%. However, this figure is still far from the CDR recommended by WHO, which is 90%. Nationally, the success rate of tuberculosis treatment in 2019 has reached the target set in the strategic plan of the Ministry of Health, which is 86.6% (Kemenkes RI, 2020).

Based on the DIY Health Office Profile in 2020, the highest number of all Regency/City TBC cases in 2019 occurred in the City of Yogyakarta, which was 1,178 cases. Then followed by Bantul Regency with 1,075 cases, Kulonprogo Regency with 1,048 cases, Sleman Regency with 481 cases, and Gunung Kidul Regency with 319 cases (Dinkes DIY, 2020). Based on the health profile of the City of Yogyakarta in 2021, the number of registered and treated TBC cases was 659 cases. Of the 659 cases, only 293 cases received complete treatment. So there are as many as 366 cases that have not received complete treatment. This is one of the causes of the low success rate of TBC treatment in Yogyakarta City. Treatment success can be achieved if the number of TBC

patients of all types successfully recovers and obtains complete treatment (Dinkes Kota Yogyakarta, 2021). Based on the health profile of the City of Yogyakarta in 2021, the success rate of TBC treatment in the City of Yogyakarta in 2020 has decreased compared to 2019 from 83% to 79.38% (Dinkes Kota Yogyakarta, 2021). So this figure has not reached the target of treatment success that has been set in the Yogyakarta City Regional Action Plan (RAD) for 2017-2021.

The low success of treatment is related to the behavior of patients who are less compliant in taking medication. To achieve successful treatment, regularity or patient compliance is needed in taking anti-TBC drugs. Compliance with taking anti-TBC drugs can be interpreted as adherence to taking anti-TBC drugs according to the doctor's prescription. In addition, compliance is also very important in healthy living behavior and one of them can be influenced by behavioral factors (Tukayo et al., 2020). The low success of treatment of TBC patients in the city of Yogyakarta greatly affects the incidence of resistance which if left continuously will result in Multi Drugs Resistance (MDR) (Pameswari et al., 2016).

Every patient has the right to continue or stop treatment. However, there is one factor that influences the behavior of patients in making these decisions, namely social support. one of the efforts that can be made to improve medication adherence is by providing support by the community, social organizations, and health services. With the concern and willingness of the people around, it can be used as a form of social support for TBC patients to be obedient in carrying out treatment (Kemenkes 2014).

Social support for medication adherence in TBC patients can be provided by families and health workers. Family support can be realized through the provision of medical expenses, providing information related to the disease suffered, as well as attention given to family members who suffer from TBC (Widiastutik et al., 2020). Social support can also be provided by health workers. Health workers have roles as communicators, motivators, facilitators, and counselors. Overall, this role is implemented in the form of counseling, providing advice, support, motivation, and attention to TBC patients, as well as being a PMO for patients who do not have PMO (Widiastutik et al., 2020).

Factors that exist within the individual also affect medication adherence, namely good knowledge will raise awareness of TBC sufferers to take treatment (Sutarto et al., 2019); (Sirait et al., 2020). A positive attitude of patients will also make it easier for them to carry out treatment (Gendhis, 2011). The high self-efficacy can make the patient's awareness of taking medication regularly and able to survive with the habit every day (Nooratri et al., 2016); (Sutarto et al., 2019); (Novitasari, 2017). The patient's self-motivation factor can also create enthusiasm and increase discipline to comply with the treatment program (Febriyanto, 2016); (Gurning & Manoppo, 2019).

Environmental factors also affect medication adherence in patients, one of which is the stigma in the environment around tuberculosis sufferers, the stigma that is widely accepted by tuberculosis sufferers is that patients are often kept away because the transmission of the disease is very easy and fast to others, the impact of this environmental stigma makes Tuberculosis sufferers experience self-stigma in the form of lack of confidence, shame, fear and stress on the surrounding environment and do not want to meet people, this will then have an impact on the treatment process. Stigma in society that must be removed so that tuberculosis sufferers no longer feel ashamed in taking treatment, if the stigma in the environment changes, the patient will be consistent in his treatment (Rizqiya, 2021). Environmental stigma is related to medication adherence in tuberculosis patients (Muhardiani & Mardjan, 2017). Based on these problems, the authors wanted to examine the analysis of treatment adherence of TBC patients in the city of Yogyakarta with the aim of the study was to determine the factors associated with treatment adherence in tuberculosis patients in the city of Yogyakarta.

## METHODS

This type of research is analytic observational with a cross sectional approach. This research was carried out in Yogyakarta covering 18 health centers in the city of Yogyakarta namely Danurejan I, Danurejan II, Gedongtengen, Gondokusuman I, Gondokusuman II, Gondomanan, Jetis, Kotagede I, Kotagede II, Kraton, Mantrijeron, Mergangsan, Ngampilan, Pakualaman, Tegalrejo, Umbulharjo I, Umbulharjo II, and Wirobrajan. The study was conducted in March-June 2022 with the population in this study were all pulmonary TBC patients at 18 Puskesmas in Yogyakarta City who were still undergoing treatment during the study.

The sample size used in this study was calculated using the cross sectional sample size formula, with a degree of confidence of 5%, absolute precision of 10%, proportion of 50% and population size of 133. we got as many as 75 people and all samples obtained were used in the analysis of this study. The sampling technique was carried out using a purposive sampling technique. Purposive sampling technique is a technique with subjective sample selection of respondents who have information and meet the criteria determined by the researcher. Determination of respondents in this study using inclusion and exclusion criteria. The inclusion criteria used were patients with pulmonary tuberculosis who were still undergoing treatment at the time of data collection, domiciled in the city of Yogyakarta at the time of the study, namely at least 6 months and age 15 years, while the exclusion criteria were patients who were not willing to become respondents, had comorbidities. based on

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medical records such as HIV/AIDS, diabetes mellitus, drug resistance and have hearing and vision impairments. Collecting data in this study using a questionnaire that has been tested for validity and reliability. Cronbach's alpha values from each questionnaire were as follows: medication adherence (0.773), family support (0.752), health worker support (0.780), knowledge (0.719), attitude (0.904), self-efficacy (0.761), motivation (0.875), stigma (0.964). The data that has been obtained is then processed and analyzed using the chi-square test to determine the relationship between research variables. The level of confidence used in this test is 95% ( $\alpha=0.05$ ).

**RESULTS AND DISCUSSIONS**

The results of the analysis between family support variables and treatment adherence of TBC patients in Yogyakarta obtained the results in table 1 below:

Table 1. The relationship between knowledge, attitudes, self-efficacy, motivation, family support, support from health workers, and environmental stigma and adherence to treatment of tuberculosis patients in Yogyakarta City

Variable	Medication Adherence				Total		Sig	RP (CI 95%)
	Not Obey		Obey		n	%		
	n	%	n	%				
Knowledge								
Negative	12	52.2	11	65.4	23	100.0	0.016	2.466
Positive	11	21.2	41	79.3	52	100.0		(1.282-4.746)
Attitude								
Negative	7	58.3	5	41.7	12	100.0	0.038	2.297
Positive	16	25.4	47	74.6	63	100.0		(1.213-4.350)
Self-Efficacy								
Low	11	31.4	24	68.6	35	100.0	1.000	1.048
High	12	30.0	28	70.0	40	100.0		(0.530-2.070)
Motivation								
Low	13	37.1	22	62.9	35	100.0	0.375	1.486
High	10	25.0	30	75.0	40	100.0		(0.746-2.957)
Family Support								
Poor	12	34.3	23	65.7	35	100.0	0.700	1,247
Good	11	27.5	29	72.5	40	100.0		(0.631-2.463)
Health Personnel Support								
Poor	6	22.2	21	77.8	27	100.0	0.353	0.627
Good	17	35.4	31	64.6	48	100.0		(0.281-1.400)
Stigma								
Yes	9	27.3	24	72.7	33	100.0	0.754	0.818
No	14	33.3	28	66.7	42	100.0		(0.405-1.652)

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1. Knowledge with adherence to treatment of tuberculosis patients

The results of the chi-square test that tested the relationship between knowledge and adherence to tuberculosis treatment obtained a sig value = 0.016 and a Prevalence Ratio = 2.466 (95% CI: 1.282-4.746). These results indicate that statistically there is a relationship between knowledge and medication adherence. This study is the same as the research conducted by Utisman (2021) which shows that there is a significant relationship between knowledge and adherence to treatment of tuberculosis patients.

Knowledge relates to adherence to treatment of tuberculosis sufferers because based on the observations of researchers in conducting research in the field directly, it shows that most respondents already have good knowledge about tuberculosis, tuberculosis sufferers have a good understanding of the disease they are suffering from, this is supported by previous research which states that if tuberculosis sufferers believe in themselves to understand and apply knowledge well then this will affect the level of knowledge of a patient (Mientarini et al., 2018). knowledge is important for and needs attention to live a better life. With knowledge, tuberculosis sufferers understand about the disease they are suffering from so that it is hoped that with knowledge about tuberculosis it can increase their adherence to treatment (Notoadmodjo, 2012).

One of the factors causing the relationship can also be caused by the education of the respondent. The results of the analysis of the characteristics of the respondents showed that 49.3% had a high education, when analyzed more deeply, patients who had higher education had good knowledge so that it influenced the patient's understanding of tuberculosis. education is an individual or community planned

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effort to be able to do what is taught by educational behavior, someone who has higher education when experiencing illness will increasingly need health facilities for treatment. The more individuals have a higher level of education, the more they will realize that health is an important thing for life so they are motivated to take medication adherence (Absor et al., 2020).

Another factor that has a relationship between knowledge and medication adherence is age. The results of the analysis of the characteristics of the respondents obtained that 85.3% have a productive age, at this productive age someone has good knowledge because they can find their own information about the disease they are suffering from. productive a person's age is, the better the knowledge they have and the older a person is, the more mature they are in thinking (Anita et al., 2018).

2. **Attitudes** with adherence to treatment of tuberculosis patients

The results of statistical tests using the chi-square test which tested the relationship between attitudes and adherence to tuberculosis treatment obtained  $\text{sig} = 0.038$  and the Prevalence Ratio = 2.297 (95% CI: 1.213-4.350). These results indicate that there is a statistically significant relationship between attitude and medication adherence.

Attitudes are related to adherence to treatment of tuberculosis sufferers because based on the observations of researchers in conducting research in the field directly, it shows that most of the respondents have positive attitudes about tuberculosis such as a conscious attitude in carrying out routine treatment, an attitude that always takes their medicine. have good knowledge so that in taking a stand for the illness he is suffering from is also good. respondents who have a positive attitude will be obedient in their treatment (Mientarini et al., 2018). respondents who have a positive attitude are in the compliance and identification stage. The compliance stage is the stage where an individual obeys the suggestion without any self-awareness and obeys this recommendation for fear of the sanctions that will be obtained and the identification stage is the stage where an individual will obey in something because they feel interested or admire a character so they want to imitate the character's actions (Alhanda, 2015).

Attitude has a relationship with medication adherence is also caused by other factors, namely family support, in this study family support owned by respondents had good family support. An individual suffering from tuberculosis requires attention and affection during treatment so that tuberculosis sufferers achieve success in treatment. The role of the family is very important for tuberculosis sufferers because it is able to provide enthusiasm and motivation to patients in their treatment (Marini et al., 2021).

Attitude has an important role in the treatment process, a positive attitude that a person has towards his illness will lead to positive behavior and actions as well so that it is hoped that this positive attitude will lead a person to complete his treatment (Mientarini et al., 2018). Attitude is a reaction of a person closed to a particular object, this reaction involves an opinion and emotion that will be used in response. Attitudes have several main components, namely the first beliefs, ideas and concepts, the second emotional life and the third tendency to act (Notoadmodjo, 2012).

3. **Efikasi diri dengan kepatuhan pengobatan penderita tuberculosis**

Hasil analisis didapatkan  $\text{sig} = 1,000$  menunjukkan bahwa efikasi diri tidak memiliki hubungan yang signifikan dengan kepatuhan pengobatan penderita tuberculosis di Kota Yogyakarta dengan Rasio Prevalence sebesar 1,048 (CI 95%: 0,530-2,070) menunjukkan bahwa orang yang memiliki efikasi diri rendah belum tentu berisiko untuk tidak patuh pengobatan. Hasil penelitian ini sejalan dengan penelitian sebelumnya bahwa efikasi diri tidak berhubungan dengan kepatuhan minum OAT tahap lanjutan pada penderita tuberculosis paru di Puskesmas Candi Lama (Suryani et al., 2021).

Berdasarkan pengamatan peneliti di lapangan, diketahui bahwa ada beberapa responden yang merasakan efek samping obat yang kurang menyenangkan dan mengganggu, sehingga terkadang membuat mereka merasa minum obat menjadikan semakin sakit akibatnya merasa malas untuk minum obat. Hasil penelitian menunjukkan bahwa penderita tuberculosis memiliki efikasi diri yang rendah namun patuh dalam pengobatan, dapat dipengaruhi oleh kesadaran dan dukungan sosial baik keluarga maupun petugas kesehatan sehingga penderita memiliki rasa takut apabila tidak meminum OAT. Peran petugas kesehatan merupakan hal yang sangat penting dalam menumbuhkan efikasi diri (Sutarto et al., 2019).

Hasil penelitian juga didapatkan bahwa sebagian penderita memiliki efikasi diri tinggi dan patuh dalam pengobatan. Efikasi diri dalam sosial cognitive theory diketahui sebagai determinan yang paling dominan dan bermakna dalam meningkatkan kepatuhan (Holmes et al., 2014). Seseorang dengan tingkat efikasi diri yang tinggi akan mempunyai keyakinan untuk sembuh. Tingginya efikasi diri yang dimiliki penderita tuberculosis akan membuat dirinya mempunyai kesadaran untuk minum obat secara rutin serta mampu bertahan dengan kebiasaan tersebut setiap hari (Nooratri et al., 2016).

Efikasi diri yang tinggi bisa menumbuhkan rasa percaya diri dalam memberi respon terhadap suatu hal dalam mendapatkan bantuan. Sebaliknya jika efikasi diri rendah maka seseorang akan cemas serta tidak mampu melakukannya (Yusuf & Nurihsan, 2011). Efikasi diri mendorong seseorang untuk berperilaku

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sehat, seseorang yang tidak yakin dengan kemampuannya untuk berperilaku yang menunjang kesehatan akan cenderung malas mencoba (Friedman & Schustack, 2008 dalam Arzit et al., 2021).

4. Motivasi dengan kepatuhan pengobatan penderita tuberkulosis

Hasil analisis statistik menunjukkan bahwa motivasi tidak memiliki hubungan yang signifikan dengan kepatuhan pengobatan penderita tuberkulosis di Kota Yogyakarta serta belum tentu orang yang memiliki motivasi rendah akan berisiko untuk tidak patuh pengobatan ( $\text{sig}=0,375$ ; Rasio Prevalence=1,486; CI 95%:0,746-2,957). Berdasarkan pengamatan peneliti di lapangan, kemungkinan tidak adanya hubungan antara motivasi dengan kepatuhan pengobatan dipengaruhi kurangnya pengetahuan responden terhadap penyakit tuberkulosis. Dalam memunculkan motivasi pada diri seseorang diperlukan pengetahuan yang baik terhadap hal yang dituju. Semakin tinggi pengetahuan yang dimiliki seseorang maka akan semakin tinggi pula kesadaran diri akan kesehatan dan motivasi untuk sembuh (Sirait et al., 2020).

Pengetahuan responden dapat diperoleh dari pendidikan, pengalaman, penyuluhan kesehatan, informasi dari petugas kesehatan (Rahmiyanti et al., 2019). Semakin tinggi tingkat pendidikan seseorang maka akan semakin gampang dalam menerima informasi akibatnya pengetahuan yang diperoleh pun akan semakin banyak (Atu et al., 2017).

Selain itu, diketahui bahwa sebagian dari responden sudah mulai merasa bosan dan malas untuk minum obat karena waktu pengobatan yang lama dan obat yang dikonsumsi cukup banyak serta memiliki rasa yang pahit. Hal ini didukung dengan adanya 26 responden yang menjawab “setuju” dan 4 responden yang menjawab “sangat setuju” pada butir pernyataan “Minum obat secara terus menerus dengan membutuhkan waktu lama membuat saya merasa bosan dan malas untuk minum obat”.

Sejalan dengan Gunawan et al. (Gunawan et al., 2017) yang mengatakan semakin lama waktu pengobatan tuberkulosis paru maka yang patuh pengobatan akan semakin berkurang dan penderita tuberkulosis paru yang terdata patuh pengobatan sampai selesai akan menurun. Lamanya waktu pengobatan tuberkulosis paru yang membutuhkan waktu 6 bulan membuat penderita tuberkulosis paru merasa bosan untuk mengkonsumsi obat.

penderita berhenti minum obat dapat disebabkan oleh beberapa hal, diantaranya munculnya rasa bosan akibat waktu pengobatan yang lama, telah merasa sehat sesudah beberapa waktu memperoleh pengobatan kemudian memutuskan pengobatannya, kurangnya kesadaran penderita akibat pengetahuan tentang tuberkulosis paru yang kurang, jarak dari rumah penderita ke tempat pelayanan kesehatan yang jauh (Yulisetyaningrum et al., 2019).

Hasil penelitian ini sejalan dengan penelitian sebelumnya bahwa motivasi tidak berhubungan dengan kepatuhan minum obat tuberkulosis (Fitriani et al., 2019); (Muna & Soleha, 2014). Sedangkan beberapa penelitian lain menyatakan bahwa motivasi ada hubungannya dengan kepatuhan minum obat (Angraini & Nofia, 2022); (Alwi et al., 2021). Adanya perbedaan hasil penelitian dari beberapa peneliti kemungkinan dapat dipengaruhi oleh beberapa faktor yang berpengaruh terhadap motivasi. Adapun beberapa faktor yang mempengaruhi motivasi, yang meliputi faktor internal dan faktor eksternal. Faktor internal antara lain keinginan dari dalam diri individu, pengetahuan individu, tingkat pendidikan, dan usia. Sedangkan faktor eksternal antara lain faktor ekonomi, agama, faktor pendukung keluarga dan perawat (Gurning & Manoppo, 2019).

5. Family support with adherence to treatment of tuberculosis patients

The results of the analysis obtained a value of  $\text{sig} = 0.700$ , meaning that statistically there was no relationship between family support and medication adherence in tuberculosis patients in the city of Yogyakarta. The Prevalence Ratio value is 1.247 (95% CI = 0.631-2.463) which means that family support is not necessarily a risk factor for treatment adherence in TBC patients in the city of Yogyakarta. There is no relationship between family support and treatment adherence of TBC patients because family support is not a strong reason for respondents to fully comply or not comply with treatment. The low adherence to treatment in TBC patients is caused by other factors from TBC patients that affect their adherence to treatment. One of these factors is the inadvertence of TBC patients who delay taking medication so that they eventually forget. This can be seen in the medication adherence instrument, especially in the aspect of timeliness in taking medication, there were still 21 TBC patients who answered that they forgot to take their medication.

Age is one of the factors that influence medication adherence in pulmonary tuberculosis patients. Based on the data obtained, most of the respondents fall into the category of productive age. the number of productive age population is also higher than non-productive age population (BPS Kota Yogyakarta, 2022). In addition, the number of working population based on age also shows that most of the respondents who work are aged 15 years and over or are in productive age. Productive age is an age with a period of high activity and is exposed to the environment, so that the intensity of meeting with other people is also getting bigger (Ulfah et al., 2018). age a person has a high level of mobility and is more concerned with activity

than disease (Lasutri et al., 2021). Age was a determining factor for patients' non-adherence to treatment. In old age a person's medication adherence is higher because he is not busy with work so he can seek treatment regularly (Budianto & Inggri, 2015).

Another factor that can affect the compliance of pulmonary TBC patients in treatment is work status. Based on the data obtained, most of the pulmonary tuberculosis patients in the city of Yogyakarta are self-employed. Entrepreneurship is one type of work that is mostly done outdoors. The type of work a person does has an effect on his adherence to treatment. If workers work in a dusty environment, exposure to particles will affect the occurrence of disorders of the respiratory tract. Exposure to polluted air can increase morbidity, especially the occurrence of symptoms of respiratory tract diseases and generally pulmonary tuberculosis (Ulfah et al., 2018). Respondents who did not work had a tendency of 4,736 times to comply with pulmonary TBC treatment compared to respondents who worked. This is because when a person works his time will decrease and the possibility to pay attention to his environment tends to decrease jenis pekerjaan seseorang berpengaruh pada kepatuhannya dalam berobat. Bila pekerja bekerja di (Lasutri et al., 2021).

The absence of a relationship between family support and medication adherence in TBC patients in the city of Yogyakarta does not mean that the effect of family support on treatment adherence of TBC patients is not considered. Family support must still be given so that TBC patients are more obedient in their treatment. Family support is related to the compliance of tuberculosis patients. Good social relations between family members have a significant effect on patient health outcomes, especially for patients who are in the adaptation stage and in the disease recovery process. The family in providing support can be in the form of informational, instrumental, emotional, and reward support (Putra, 2019) dan (Herawati et al., 2020).

#### 6. Support of health workers with adherence to treatment of tuberculosis patients

The results of statistical analysis showed that there was no relationship between the support of health workers and adherence to medication for TBC patients in the city of Yogyakarta (sig = 0.353) with a Prevalence Ratio value of 0.627 (95% CI = 0.281-1.400) which means that the support of health workers is not necessarily a factor. Risk of adherence to treatment of TBC patients in the city of Yogyakarta. This is because many other factors affect the adherence to treatment of TBC patients. Other factors referred to can come from the patient himself, such as a feeling of fear with the long-term impact of taking anti-TBC drugs regularly. So that TBC patients choose to stop taking drugs that have been given by doctors or health workers. This feeling of fear can be caused by the lack of information provided by health workers about the possible side effects of OAT. This is evidenced by the respondent's answers to the health worker support instrument regarding the side effects of OAT. Based on this instrument, 9 respondents answered that health workers never explained the possibility of side effects of OAT. Inadequate information by patients makes it clear that the failure of communication between health workers and patients will have an impact on the form of compliance. This can be seen from the results of the analysis that 24 of 75 respondents stated that they had not received support in the aspect of good communication from health workers. Based on the results of interviews, respondents stated that there is still a lack of interpersonal communication between health workers and patients (Ulfah et al., 2018). Interpersonal communication is very important in establishing mutual trust between officers and patients

the role of health workers is not related to drug adherence in pulmonary tuberculosis patients. The low adherence to treatment in pulmonary TBC patients occurs due to less open communication between health workers and TBC patients. The quality of interaction between TBC patients and health workers is a determinant of the success of treatment (Widiastutik et al., 2020). TBC patients who misunderstand the recommendations given by health workers cause patients to not comply with their treatment (Sugiono, 2017).

A health worker is someone who understands more about health, both regarding the disease and the treatment of the disease. Therefore, the absence of a relationship between the support of health workers and adherence to treatment of TBC patients in the city of Yogyakarta does not mean that the support of health workers is not needed. The role of health workers and family support with the level of adherence to taking medication in pulmonary TBC patients, it shows that there is a relationship between the role of health workers and the level of adherence to taking drugs for pulmonary TBC with positive smear (Netty et al., 2018).

#### 7. Stigma with adherence to treatment of tuberculosis patients

The results of statistical tests using the chi-square test which tested the relationship between stigma and adherence to tuberculosis treatment shows a sig value = 0.754 and a Prevalence Ratio = 0.818 (95% CI: 0.405-1.652). These results indicate that there is no statistically significant relationship between knowledge and medication adherence. Based on the observations of researchers in conducting research in the field,

some people with tuberculosis have stigma in their environment but sufferers do not care about the stigma that society gives them because patients have the confidence to recover and have support from their families so that the existing stigma does not reduce the patient's confidence in taking treatment. It is until they healed. Another factor is also because of high education, in this study the respondents had a level of education, the higher the education, the better the knowledge and attitudes possessed by tuberculosis sufferers which made the awareness to recover greater so that the stigma that existed in the environment did not affect compliance in treatment. Confidence in patients is very important in the healing process for people with tuberculosis and the stigma of society are influenced by one's education because education is one way to increase one's knowledge (Astuti et al., 2019).

Other factors that influence the no relationship between stigma and medication adherence are the public's fear of tuberculosis and the lack of public understanding of infectious diseases. Society stigmatizes tuberculosis sufferers because they are afraid of contracting the disease, besides that many people have not received health education about tuberculosis, this is what makes people stay away from acknowledging the existence of sufferers which causes high stigma in the environment around tuberculosis sufferers. Researchers also state that a tuberculosis patient who has a high education will easily understand the disease he is suffering from and will easily build self-confidence and self-confidence to recover from his illness (Pribadi et al., 2017).

Stigma exists because someone suffers from chronic and infectious diseases, one of which is pulmonary tuberculosis. A tuberculosis sufferer who is labeled a stigma will usually be ashamed, afraid and stressed so that they limit themselves from the surrounding environment and even those closest to them, with this condition many tuberculosis sufferers do not want to seek treatment and even find it difficult to make decisions for the disease they suffer. tuberculosis that has a stigma in the environment that is not compliant in treatment (Sari, 2018).

## CONCLUSION

Based on the results of research and discussion that factors related to tuberculosis treatment adherence are knowledge and attitudes, while factors that are not related are self-efficacy, motivation, family support, health worker support and stigma with TBC patient treatment adherence in the city of Yogyakarta. The staff implementing the tuberculosis program is expected to continuously provide counseling to patients and their families who are undergoing treatment. The counseling provided is related to the causes, transmission, prevention, and treatment of TBC disease and counseling for TBC patients with the aim of establishing good communication between health workers and TBC patients. With this counseling, it is hoped that it will increase the compliance of TBC patients in their treatment. The patient's family is expected to maintain their support for members who are undergoing TBC treatment to always comply with their treatment by providing emotional, instrumental, informational, and rewarding support.

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Commented [A12]: Mohon dilengkapi : pengetahuan dan sikap tentang apa?



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