

Association of Family Support and PMO Role with Medication Adherence among Pulmonary Tuberculosis Patients

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Abstract

Tuberculosis (TB) is still a global health problem, Indonesia is one of the countries with the highest cases. Low medication adherence can lead to therapy failure and resistance. Patient adherence is influenced by family support, the role of the medication supporter (PMO), and the patient's characteristics. Therefore, this study was conducted at Purwodadi Islamic Hospital to determine the relationship between family support and the role of PMO on medication adherence to pulmonary TB patients. This study uses a quantitative approach with a cross sectional design which was carried out from January 20 to March 1, 2026 with a total of 106 respondents meeting the inclusion and exclusion criteria. The research instrument is in the form of a questionnaire that has been tested for validity ($r_{\text{calculated}} > r_{\text{table}} 0.361$) and reliability (Cronbach's Alpha > 0.60). Data analysis was carried out in univariate, bivariate, multivariate, and stratified analysis. The results showed that there was a relationship between family support with a $p\text{-value}=0.010$ and the role of PMO with a $p\text{-value}=0.003 (<0.05)$ with medication adherence. Stratified analysis shows the presence of confounding variables in certain characteristics. Multivariate analysis showed that the role of PMO was the most influential factor on compliance, with the highest Wald value (8.582) and the least significance ($p\text{-value} = 0.003$).

Key words: Family Support, Medication Adherence, PMO, Pulmonary Tuberculosis

Introduction

Tuberculosis is an infectious disease caused by a rod-shaped bacterium (Bacillus) called *Mycobacterium Tuberculosis*. These bacteria are transmitted through saliva or phlegm that is spread through the air when a person coughs and can affect physical, mental, and social life and cause complications if not treated (Relica & Mariyati, 2024) Based on 2021 *World Health*

Organization (WHO) data, Indonesia ranks third with 824,000 cases and 93,000 deaths per year, and 91% are pulmonary TB (Kemenkes RI, 2022) In *the Global TB Report 2024*, Indonesia is ranked second with a contribution of 10% of the total global cases. The number of cases of Pulmonary TB in Grobogan Regency was recorded at 846 cases in 2024 and 572 cases in the first quarter of 2025 (Open Data Jateng, 2025)

Adherence in treatment in tuberculosis patients is essential, as non-adherence can lead to drug resistance, therapy failure, as well as increased risk of pain and death (Purnamasari et al., 2023). Patient adherence can be measured by several methods, one of which is the *Morisky Medication Adherence Scale 8* (MMAS-8). The advantage of this method compared to other methods is its objective, measurable, economical and easy-to-use nature. The MMAS-8 method includes three aspects, namely how often the patient forgets to take medication, stops taking medication intentionally without notifying the medical team, and the ability to control oneself in continuing treatment (Faizah et al., 2023).

Family is the main supporter in undergoing pulmonary TB treatment. The motivation of the family support provided is very meaningful for the patient to help in the treatment process and can prevent the possibility of stopping taking medication in Pulmonary TB patients (Siallagan et al., 2024) The success of pulmonary TB treatment is highly determined by the regularity of taking anti-tuberculosis drugs, this can be achieved with the presence of a PMO that actively monitors. A Drug Swallowing Supervisor (PMO) is a person who ensures the regularity of treatment so that patients recover quickly and successfully undergo treatment (Suryana & Nurhayati, 2021)

Based on the importance of medication adherence in pulmonary tuberculosis treatment and the potential influence of accessibility, family support, and the role of the Medication Supervisor (PMO), this study aims to analyze the relationship between accessibility, family support, and the role of PMO with medication adherence among pulmonary TB patients at Purwodadi Islamic Hospital, and to identify the most influential factor affecting medication adherence.

Methods

This study uses a quantitative approach with a *Cross Sectional* design. The research was carried out at the Pulmonary Polyclinic of Purwodadi Islamic Hospital from January 20 to March 1, 2026. The population in this study is all pulmonary tuberculosis patients undergoing treatment at Purwodadi Islamic Hospital, with a sample of 106 respondents selected based on inclusion and exclusion criteria using *purposive sampling techniques*. The research instrument

used a questionnaire that had been tested for validity with a value of $r_{\text{calculated}} > r_{\text{table}}$ (0.361) and reliability with a value of *Cronbach's Alpha* > 0.60 so that it was declared valid and reliable. The measurement of medication adherence level was carried out using *the Morisky Medication Adherence Scale* (MMAS-8) method.

Data analysis was carried out univariate to see the frequency distribution, and bivariate to find out the relationship between variables using the *Chi-Square* test, if the p value $< \alpha$ (0.05) means that there is a relationship between the results of the compliance level measurement, and with the *expected count* Value ≥ 5 (Kusmiyani et al., 2024). If the conditions are not met, an alternative Fisher's Exact Test is used. Next, stratified analysis was carried out using *the Mantel-Haenszel* test to identify the presence of confounding variables by comparing the values of PR_{crude} and $PR_{\text{Mantel-Haenszel}}$. Multivariate analysis was performed using logistic regression to find out the variables that had the most influence on medication adherence.

Result and Discussion

1. Univariate Analysis

Variable	f	%
Age		
Adult	7	6,6
Middle-aged	99	93,4
Gender		
Male	62	58,5
Women	44	41,5
Final Education		
Primary Education	60	56,6
Higher Education	46	43,4
Jobs		
Private Employees	9	8,5
Civil Servant	5	4,7
Self-employed	26	24,5
Farmer	51	48,1
IRT	14	13,2
Accessibility		
<10Km	52	49,1
>10Km	54	50,9

Based on the results of the study, the majority of respondents were in the middle age group, namely 99 respondents (93.4%). Based on gender, the majority of respondents were male as many as 62 respondents (58.5%), while women as many as 44 respondents (41.5%). Based on the latest education level, the majority of respondents had low education, namely 60 respondents (56.6%), while higher education was 46 respondents (43.4%). Based on

occupation, the majority of respondents worked as farmers, namely 51 respondents (48.1%), followed by the self-employed with 26 respondents (24.5%), housewives with 14 respondents (13.2%), private employees with 9 respondents (8.5%), civil servants with 5 respondents (4.7%), and unemployed with 1 respondent (0.9%). Based on accessibility, most respondents had a distance to health facilities >10 km, namely 57 respondents (53.8%), while <10 km as many as 49 respondents (46.2%).

Table 2
Distribution of Respondents based on family support, PMO role, and medication adherence

Variable	f	%
Family Support		
Not Good	2	1,9
Good	104	98,1
Total	106	100
The role of the PMO		
Not Good	4	3,8
Good	102	96,2
Total	106	100
Medication Adherence		
Low	0	0
Medium	11	10,4
Height	95	89,6
Total	106	100

Based on the results in Table 2, the majority of respondents had good family support, namely 104 respondents (98.1%), while 2 respondents (1.9%) had poor family support. This shows that in general, the patient's family plays an active role in providing support during the treatment process of Pulmonary TB. In the variable role of PMO, most respondents had a good PMO role, namely 102 respondents (96.2%), while 4 respondents (3.8%) had a bad PMO role. This shows that the implementation of drug supervision in pulmonary TB patients has gone well.

In medication adherence, the majority of respondents had high compliance, namely 104 respondents (98.1%), while as many as 11 respondents (1.9%) had moderate compliance, and no respondents were found with low compliance. This shows that the level of compliance of pulmonary TB patients in this study is very good.

2. Bivariate Analysis

Table 3
Relationship Characteristics, Family Support, Role of PMO on Medication Adherence of Pulmonary TB Patients at Purwodadi Islamic Hospital

Pulmonary TB Patients at Farwaidi Islamic Hospital							
Variable	Medication Adherence				Total	Value <i>p</i>	<i>PR</i>
	Medium		Height				
	n	%	n	%			
Age							

Middle-aged	10	9,4	89	84	99	93,4	0,547	-
Adult	1	0,9	6	5,7	7	6,6		
Gender								
Male	5	4.7	57	53.8	62	58.5	0.520	-
Women	6	5.7	38	35.8	44	41.5		
Final Education								
Primary Education	8	7,5	52	49,1	60	56,6	0.565	-
Higher Education	3	2,8	43	40,6	46	43,3		
Jobs								
Private employees	0	0.0	9	8.5	9	8.5	0.423	-
Civil servants	0	0.0	5	4.7	5	4.7		
Self-employed	3	2.8	23	21.7	26	24.5		
Farmer	8	7.5	43	40.6	51	48.1		
IRT	0	0.0	14	13.2	14	13.2		
Not working	0	0.0	1	0.9	1	0.9		
Accessibility								
>10Km	9	8,5	43	40,6	52	49,1	0,022	4,673
<10Km	2	1,9	52	49,1	54	50,9		
Family Support								
Not Good	2	1.9	0	0	2	1,9	0,010	11,556
Good	9	8.5	95	89.6	104	98.1		
The role of the PMO								
Not Good	3	2.8	1	0.9	4	3.8	0,003	9,563
Good	8	7.5	94	88.7	102	96.2		

The results of the bivariate analysis showed that there was no significant relationship between age and medication adherence of Pulmonary TB patients at Purwodadi Islamic Hospital with a value of $p = 0.547$ (>0.05), which means that age did not have a significant effect on medication adherence in this study. These results are not in line with research at the Surulangun Health Center in 2024 which showed a significant relationship between age and medication adherence ($p = 0.000$) (Elizah et al., 2024). In theory, patients aged <60 years tend to have higher adherence because they still have better activity ability, high motivation to recover, and are better able to follow treatment regularly (Ratnasari et al., 2020). However, TB treatment adherence is not only influenced by age, but also by other factors such as family support and the role of the Medication Supervisor (PMO) which can be more dominant in influencing adherence (Pangaribuan et al., 2020).

Based on gender analysis, male and female respondents were both dominated by adherence to taking high-category drugs. In men, most of them have high compliance, namely 57 respondents (53.8%), while women as many as 38 respondents (35.8%). The results of the statistical test showed that there was no significant relationship between sex and medication adherence (value p 0.520). This is in line with previous studies that also found no significant association between sex and TB treatment adherence (Frida Yanthi & Yowani, 2025). The absence of this difference shows that both men and women have relatively similar motivation

to recover. In addition, the success of TB treatment programs in healthcare facilities can minimize differences in compliance based on gender (Pralambang & Setiawan, 2021).

Based on education level, respondents with low and higher education were equally dominated by high compliance. The results of the statistical test showed that there was no significant relationship between the last education and medication adherence (the p 0.565). This result is in line with previous research with test results, namely the value of p 0.342 (>0.05) which also showed no association between education level and TB treatment adherence. This shows that the level of education does not always determine patient compliance, as information about TB and its treatment is now more accessible. In addition, patient compliance is more influenced by other factors such as family support and the role of the Medication Supervisor (PMO) (Oktalina, 2025).

Based on the type of occupation, most respondents worked as farmers, with the majority having a high category of compliance on each work group. The results of the statistical test also showed that there was no significant relationship between work and medication adherence (value p 0.423). These results are in line with a study in Pagar Alam City which showed that there was no relationship between work and TB treatment adherence (Media Febriana et al., 2025). This can be caused by the characteristics of the respondents' work, which is mostly a high-activity job such as farmers, so that time constraints are more influenced by work priorities than compliance itself (Tukayo et al., 2020).

Based on accessibility, respondents with a distance of >10 Km or <10 Km tend to have high-category compliance. However, the results of statistical tests showed that there was a significant relationship between accessibility and medication adherence (p value 0.022). Respondents with a distance of >10 Km had a higher risk of experiencing moderate compliance compared to respondents with a distance of <10 Km ($PR = 4,673$). This shows that the farther away the residence is from the health facility, the more likely it is that the patient will be less compliant with treatment. This condition is in line with previous research that states that distance and ease of access to health facilities are important factors in the success of TB treatment (Yulisetyaningrum et al., 2019).

The results showed that there was a significant relationship between family support and medication adherence to Pulmonary TB patients (p value 0.010). The better the family support, the higher the patient's compliance in undergoing treatment. Family support that includes emotional, informational, instrumental, and reward aspects plays an important role in increasing the patient's motivation to heal (Sutrisno et al., 2025).

In theory, family support in the Health Belief Model affects patients' health behaviors, including medication adherence. Family assistance such as reminding medications, delivering controls, and providing emotional support can improve patient compliance (Ahla et al., 2024). These results are also in line with previous research that showed a link between family support and adherence to taking pulmonary TB medication (Latifah, 2025). In addition, other research also mentions that lack of social support, including emotional and financial support, can be a major factor in non-adherence to pulmonary TB treatment (Nezenega et al., 2020). Thus, family support such as transportation assistance costs, medication reminders, and emotional attention play a major role in improving patient compliance.

It was found that there was a significant relationship between the role of PMO and medication adherence of pulmonary TB patients (p value 0.003). The PMO plays a role in monitoring, reminding, and ensuring that patients take medication regularly. A good role of PMO can prevent drug withdrawal and improve treatment success (Marvia et al., 2024). These results are in line with previous research that showed an association between PMO and pulmonary TB treatment adherence (Anggraeni et al., 2023). The PMO not only functions as a supervisor, but also as a motivator and companion of patients. Thus, a good PMO performance will have a direct effect on increasing patient compliance and the success of Pulmonary TB therapy (Ahla et al., 2024).

3. Multivariate Analysis

Table 4
Logistic Regression Analysis of the Most Influential Variables on Medication Compliance of Pulmonary TB Patients at Purwodadi Islamic Hospital

Variable	B	Wald	Sig.	Exp (B)/OR	95% C.I. for EXP (B)	
					Lower	Upper
Distance Access	1,332	2,150	0,143	3,788	0,693	22,468
The role of the PMO	3,742	8,582	0,003	42,200	3,451	516,049
Family Support	23,438	0,000	0,999	1,509E+10	0,000	
Constant	-24,945	0,000	0,999	0,000		

Based on the results of the logistic regression analysis, of the three research variables, the role of the Medication Supervisor (PMO) was the most influential variable on the medication compliance of pulmonary TB patients at Purwodadi Islamic Hospital. This is shown by the highest Wald value of 8.582 and the smallest significance p value 0.003 ($p < 0.05$), so that statistically the role of PMO has the most significant influence compared to other variables. An *Odds Ratio* (OR) value of 42,200 indicates that patients with a good PMO role have a 42.2 times greater chance of having high medication adherence than patients with a poor PMO role after being controlled for by other variables. This shows that the existence and involvement of

PMO has a dominant contribution in improving the compliance of Pulmonary TB patients (Aprindo et al., 2023).

The results of this study are in line with previous research that stated that PMO plays an important role in improving patient adherence, especially in the early phases of treatment when patients are prone to forgetfulness or inconsistent medication taking. The presence of a PMO helps ensure that patients continue to regularly take medication until treatment is completed (Mariska et al., 2025).

Overall, the PMO not only functions as a supervisor, but also as an educator, motivation, and companion to patients. This role can prevent medication discontinuation, improve ongoing adherence, and support the success of pulmonary TB therapy. Therefore, strengthening the role of PMOs through training and coaching is necessary so that they can function optimally as active partners of patients in the healing process.

Conclusion

Based on the results of the study, there was a significant relationship between accessibility, family support, and the role of PMO and medication adherence among pulmonary TB patients at Purwodadi Islamic Hospital. Better accessibility, stronger family support, and an optimal PMO role contributed to improved treatment adherence, with the PMO role being the most influential factor. This study highlights the importance of family involvement and the role of PMOs in supporting successful pulmonary TB treatment outcomes.

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Reference

Ahla, N., Heriyani, F., Audhah, N. Al, Haryati, & Nika Sterina Skripsiana. (2024). *Hubungan*

- Dukungan Keluarga Pasien Tuberkulosis Paru dengan Kepatuhan Minum Obat Di Puskesmas Pekauman Banjarmasin*. 7(3), 543–552.
- Anggraeni, I., Wahyudin, D., & Purnama, D. (2023). *Hubungan Peran Pengawas Minum Obat (PMO) dengan Kepatuhan Minum Obat Pada Pasien Tuberkulosis Paru di Wilayah Kerja UPTD Puskesmas Gunungguruh Kabupaten Sukabumi*. 4, 4834–4844.
- Aprindo, Y. R., Sari, M. T., Yesni, M., & Daryanto, D. (2023). Dukungan Keluarga dan Peran Pengawas Minum Obat dengan Kepatuhan Minum Obat pada Penderita TB Paru. *Jurnal Akademika Baiturrahim Jambi*, 12(2), 344. <https://doi.org/10.36565/jab.v12i2.678>
- Dachi, S., Alyakin Dachi, R., J Sitorus, M. E., Nababan, D., & Tarigan, L. (2024). Faktor Yang Berhubungan Dengan Kepatuhan Minum Obat Anti Tuberkulosis (Oat) Pada Pasien Tb Paru Di Wilayah Kerja Puskesmas Lahomi Kecamatan Lahomi Kabupaten Nias Barat. *PREPOTIF: Jurnal Kesehatan Masyarakat*, 8(1), 816–843.
- Faizah, A. K., Dewayani, J. K., & Kresnamurti, A. (2023). Evaluasi Tingkat Kepatuhan Minum Obat Pasien Hipertensi Di Puskesmas Kenjeran Menggunakan Metode Mmas-8. *Journal of Pharmacy Science and Technology*, 4(1), 283–288. <https://doi.org/10.30649/pst.v4i1.62>
- Frida Yanthi, N. M. R., & Yowani, S. C. (2025). Analisis Tingkat Kepatuhan Penggunaan Obat Anti Tuberkulosis di Puskesmas Kota Denpasar. *Journal of Multidisciplinary Research and Development*, 7(5), 3620–3628. <https://doi.org/10.38035/rrj.v7i5.1679>
- Hamdin, Hamid, A., Hasifah, H., & Maliga, I. (2024). Dukungan Keluarga dengan Kepatuhan Minum Obat pada Pasien Tuberkulosis (TB) Paru di UPT Puskesmas Lape. *Jurnal Kesehatan Masyarakat*, 8(2), 4617–4622.
- Hutauruk, R., Manurung, K., Hutajulu, J., Nababan, D., & Sitorus, M. E. (2025). Determinants of Compliance in Taking Tuberculosis Medication at Garoga Health Center , Garoga District , North Tapanuli Regency in 2023. *Journal of Pharmaceutical and Sciences*, 506–519.
- Inaya, F., Dedy, M., & Sagita, S. (2020). Hubungan Peran Pengawas Menelan Obat Terhadap Keberhasilan Pengobatan Pasien Tuberkulosis Paru Di Kota Kupang. *Cendana Medical Journal (CMJ)*, 206–213. <http://ejurnal.undana.ac.id/CMJ/article/view/3490>
- Kemendes RI. (2022). *Biro Komunikasi dan Pelayanan Publik, Kementerian Kesehatan RI*. Dr. Siti Nadia Tarmizi, M.Epid. <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20220322/4239560/tahun-ini-kemendes-rencanakan-skrining-tbc-besar-besaran/>
- Kusmiyani, O. T., Hermanto, H., & Rosela, K. (2024). Analisis Faktor yang Berhubungan dengan Kepatuhan Minum Obat Anti Tuberkulosis pada Pasien TB Paru di Puskesmas

- Samuda dan Bapinang Kotawaringin Timur. *Jurnal Surya Medika*, 10(1), 139–151.
<https://doi.org/10.33084/jsm.v10i1.7165>
- Latifah, Y. (2025). Hubungan Dukungan Keluarga dengan Kepatuhan Minum Obat pada Pasien Tuberkulosis paru. *Jurnal Health Society*, 14(2), 112–120.
<https://doi.org/10.62094/jhs.v14i2.241>
- Mariska, R. D., Lestari, T., & Pramestirini, R. A. (2025). Peran Petugas Kesehatan dan Pengawas Minum Obat dengan Kepatuhan Minum Obat pada Pasien Tuberkulosis. *Jurnal Keperawatan Florence Nightingale*, 8(1), 117–125.
<https://doi.org/10.52774/jkfn.v8i1.381>
- Marvia, E., Fithriana, D., Putradana, A., Rubiati, Suhartiningsih, & Maulana, A. E. F. (2024). Peran Pengawas Minum Obat (PMO) berhubungan dengan Kepatuhan Minum Obat Pada Pasien Penderita TB Paru. *Jurnal Ilmiah Ilmu Kesehatan*, 10(1).
- Mudmainah, Istianah, & Somantri, B. (2023). Hubungan Motivasi dengan Kepatuhan Minum Obat pada Penderita Tb Paru Di Puskesmas Bihbul Kabupaten Bandung 2021. 1(1), 79–88.
- Media Febriana, Lilis Suryani, Dianita Ekawati, & Chairil Zaman. (2025). Analisis Kepatuhan Minum Obat Pada Pasien Tuberkulosis Paru. *Lentera Perawat*, 6(1), 107–116.
<https://doi.org/10.52235/lp.v6i1.402>
- Nezenega, Z. S., Perimal-lewis, L., & Maeder, A. J. (2020). Factors Influencing Patient Adherence to Tuberculosis Treatment in Ethiopia. *International Journal of Environmental Research and Public Health*, 17(15), 1–12. <https://doi.org/10.3390/ijerph17155626>
- Oktalina, R. (2025). Hubungan Tingkat Pendidikan dan Pengetahuan Terhadap Kepatuhan Minum Obat Anti Tuberkulosis Pada Pasien TB Di Puskesmas Beringin Raya. *Jurnal Persada Husada Indonesia*, 12(2), 29–33.
- Open Data Jateng. (2025). *Jumlah Kasus TB Kabupaten Grobogan Tahun 2025*.
<https://data.jatengprov.go.id/dataset/jumlah-kasus-tbc-yang-ditemukan-dan-diobati-tahun-2025-triwulan-1-provinsi-jawa-tengah>
- Pangaribuan, L., Kristina, K., Perwitasari, D., Tejayanti, T., & Lolong, D. B. (2020). Faktor-Faktor yang Mempengaruhi Kejadian Tuberkulosis pada Umur 15 Tahun ke Atas di Indonesia. *Buletin Penelitian Sistem Kesehatan*, 23(1), 10–17.
<https://doi.org/10.22435/hsr.v23i1.2594>
- Pralambang, S. D., & Setiawan, S. (2021). Faktor Risiko Kejadian Tuberkulosis di Indonesia. *Jurnal Biostatistik, Kependudukan, Dan Informatika Kesehatan*, 2(1), 60.
<https://doi.org/10.51181/bikfokes.v2i1.4660>

- Purnamasari, R., Noviasari, N. A., Albertus, J., & Putri, I. R. H. (2023). Edukasi Tentang Pengetahuan Pada Pasien Pengobatan TB Melalui Media Audiovisual Di Wilayah Puskesmas Poncol Semarang. *Prosiding Seminar Kesehatan Masyarakat*, 1(Oktober), 148–153. <https://doi.org/10.26714/pskm.v1ioktober.198>
- Ratnasari, D., Dhrik Mahadri, & Utami Sri Putu Luh NI. (2020). Garuda3600921. *Prosiding Simposium Kesehatan Nasional*, 3, 13–20.
- Relica, C., & Mariyati. (2024). Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal. *Peran Mikronutrisi Sebagai Upaya Pencegahan Covid-19*, 14(3), 75–82. <https://journal2.stikeskendal.ac.id/index.php/PSKM/article/view/1979/1260>
- Siallagan, S., Suriany, R., & Ernauli, S. (2024). *Hubungan Dukungan Keluarga Dengan Kepatuhan Minum Obat OAT Pada Pasien Tuberkulosis (TBC) Di RS Cibitung Medika Tahun 2023*. 5(2020), 1–10.
- Suryana, I., & Nurhayati. (2021). Hubungan Antara Peran Pengawas Menelan Obat (Pmo) Terhadap Kepatuhan Minum Obat Penderita TB Paru. *Indonesian Journal of Nursing Sciences and Practices Indonesian*, 4(2), 93–98. <https://jurnal.umj.ac.id/index.php/ijnsp/article/view/14616/0>
- Sutrisno, Febrianti, F., Majid, Y. A., & Apriyani. (2025). Hubungan Dukungan Kleuarga dengan Kepatuhan Minum Obat Pada Pasien Tuberkulosis (TB) di Wilayah Kerja Pskesmas Pembina Palembang. *Jurnal Insprisasi Kesehatan*, 3(2), 161–168.
- Taherdoost, H. (2018). Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. *SSRN Electronic Journal*, 5(3), 28–36. <https://doi.org/10.2139/ssrn.3205040>
- Tukayo, I. J. H., Hardyanti, S., & Madeso, M. S. (2020). Faktor Yang Mempengaruhi Kepatuhan Minum Obat Anti Tuberkulosis Pada Pasien Tuberkulosis Paru di Puskesmas Waena. *Jurnal Keperawatan Tropis Papua*, 3(1), 145–150.
- Yulisetyaningrum, Hidayaha, N., & Yuliarti, R. (2019). *Hubungan Jarak Rumah dengan Kepatuhan Minum Obat pada Pasien TBC di RSI Sunan Kudus*. 10(1), 248–255.