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*Review Article*

# Determinants of Medication Compliance among Pulmonary Tuberculosis Patients in the North Cimahi Community Health Center Work Area

**Yunita Sarah Nadeak [1*], Eva Elfrida Pardede [2], Tiarmaida Sitio [3]**

[1] Prodi Keperawatan, Akademi Keperawatan Kebonjati Bandung; Indonesia; yunitasarahnadeak9@gmail.com
[2] Prodi Kesehatan Masyrakat, Universitas Sriwijaya Palembang; Indonesia; evaelfrida@fkm.unsri.ac.id
[3] Prodi Keperawatan, Akademi Keperawatan Kebonjati Bandung; Indonesia; tiorsitio80@gmail.com
*Corresponding Author: Yunita Sarah Nadeak

**Abstract:** In Indonesia, tuberculosis (TB) remains a global public health problem. The results of an initial survey in the North Cimahi Community Health Center work area The data obtained shows that the number of patients with pulmonary tuberculosis with positive smear is 106 patients. The purpose of this study is to analyze the determinants of adherence to taking medication in pulmonary tuberculosis patients in the area. This study uses a *cross-sectional design*. The population taken is all pulmonary tuberculosis patients in the working area of the North Cimahi Health Center as many as 106 people, with a total sample of 51 people. Data analysis uses the chi-square test and linear logistic regression. The results of the study showed that there was a relationship between knowledge (0.000), attitude (0.000), education (0.000), work (0.001), and family support (0.000) on medication adherence. Knowledge was the dominant factor influencing medication adherence in pulmonary TB patients with an OR value (Exp B = 29.169 ).It is hoped that health workers will always remind TB sufferers when taking medication to pay more attention to the regularity of taking medication , while TB sufferers are expected to be regular in taking medication and take medication according to the schedule.

**Key words:** Compliance; Determinants; Medication; Public Health Cente; Pulmonary Tuberculosis

## 1. INTRODUCTION

Infectious diseases remain a public health problem, causing high morbidity, mortality, and disability, necessitating effective and efficient prevention, control, and eradication efforts. Tuberculosis is one of the most dangerous infectious diseases. Tuberculosis remains a major public health problem and a leading cause of death, necessitating a sustainable tuberculosis control program ( Ministry of Health of the Republic of Indonesia, 2021 ).

Tuberculosis (TB) remains a global public health problem, particularly in Indonesia. This disease poses a significant threat to human resource development and requires serious attention from all parties. Tuberculosis is a global challenge and one of the diseases whose control is a global commitment in *the Millennium Development Goals* (MDGs) ( Ministry of Health of the Republic of Indonesia, 2022 ). The indicators for achieving the MDGs by 2022 are to increase the proportion of detected pulmonary TB cases to 70% and to increase the proportion of treated and cured pulmonary TB cases to 85% ( Ministry of Health of the Republic of Indonesia, 2021 ).

Pulmonary tuberculosis is a direct infectious disease caused by the TB germ ( *Mycobacterium tuberculosis)*. The main symptom is a cough that lasts for two weeks or more, accompanied by additional symptoms such as phlegm, blood-tinged phlegm, shortness of breath, weakness, decreased appetite, weight loss, *malaise* , night sweats without physical activity, and fever for more than one month. Respondents were asked about pulmonary TB

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disease for a period of ≤1 year based on a diagnosis made by a health worker through sputum examination, chest X-ray, or both. ( Riskesdas, 2022 )

One way to control TB is through treatment. The treatment success rate is evaluated by the treatment success rate. This success rate is derived from the cure rate *and* the treatment completion rate. In 2014, the treatment success rate declined compared to the previous six years. In 2014, the treatment success rate was 81.3%. The WHO set a standard for a treatment success rate of 85%. Therefore, Indonesia did not achieve this standard in 2014. Meanwhile, the Ministry of Health set a minimum target of 88% for the treatment success rate in 2014. Based on this, the 2022 treatment success rate of 81.3% also fell short of the 2014 target. ( Ministry of Health, 2022 )

To reduce the morbidity and mortality rate of tuberculosis and prevent drug resistance, a national tuberculosis control program has been implemented with the DOTS ( *Directly Observed Tuberculosis) strategy. Treatment Shortcourse)* recommended by WHO. The DOTS method has been implemented in Indonesia since 1995 with 5 components: political commitment, policy, and funding support for TB control, TB diagnosis through microscopic examination, treatment with anti-TB drugs directly supervised by a drug supervisor (PMO), drug availability, and recording of TB program performance results ( Ministry of Health of the Republic of Indonesia, 2021 ).

Achieving recovery requires consistent adherence to treatment for each patient. A combination of short-term anti-tuberculosis medications and monitoring of medication intake are strategies to ensure recovery. Even if the medication is effective, if patients fail to take their medication regularly, the results will generally be disappointing. Another fact is that pulmonary TB is difficult to cure because several drugs must be administered simultaneously and the treatment takes a long time, at least six months, resulting in many patients dropping out of treatment. This is due to a lack of attention to tuberculosis from various stakeholders, resulting in TB control programs in many areas being severely weakened ( Ministry of Health of the Republic of Indonesia, 2021).

Results survey i beginning research in the Work Area Community Health Center North Cimahi data obtained that amount TB patient with positive BTA There were 106 sufferers. The phenomenon found in the field show that support family in pulmonary tuberculosis treatment to sufferers No fully implemented. This is seen that although free treatment already available , but results achieved No maximum resulting by lack of encouragement from family , lazy And sufferers do treatment return while disease suffered relapsed back. Even consequence treatment that is not complete the cause member another family was infected disease the.Another important factor is the patient's education. Low education levels result in low knowledge. Many patients stop seeking treatment because their symptoms have disappeared, even though their condition is not cured. This occurs due to a lack of understanding.

## 2. RESEARCH METHODS

This type of research is *analytical survey research* , which attempts to explore how and why health phenomena occur. This study uses a *cross-sectional design.* namely to determine the determinants of medication adherence in pulmonary tuberculosis patients in the North Cimahi Community Health Center work area.

In this study, the population taken was all Pulmonary Tuberculosis Patients in the working area of the North Cimahi Health Center, Padangsidimpuan City, with a total of 106 people.

The sample in this study was *simple random sampling* , namely taking samples from members of the population using random sampling without paying attention to the strata (levels) in the population members. The number of samples in this study was 51 people.

Data collection was conducted using primary and secondary data. Primary data was collected through interviews using questionnaires and observations. Secondary data was

obtained from the North Cimahi Community Health Center (Puskesmas ) in the form of gastritis incident reports from medical records.

Data analysis used bivariate analysis in the form of frequency distribution, bivariate analysis through chi square test, and multivariate analysis through logistic linear regression.

## 3. Research result

### Univariate Analysis

### *The Relationship Between Knowledge and Medication Compliance in Pulmonary Tuberculosis Patients*

**Table 1.**The Determination of Knowledge and Medication Compliance in Pulmonary Tuberculosis Patients in the North Cimahi Community Health Center Working Area.

| No | Knowledge | Compliance | | | | *Total* | | *P-value* |
|---|---|---|---|---|---|---|---|---|
| | | Obedient | | No Obedient | | | | |
| | | f | % | f | % | f | % | |
| 1 | Good | 9 | 17.6 | 3 | 5.9 | 12 | 23.5 | 0,000 |
| 2 | Not enough | 2 | 3.9 | 37 | 72.5 | 39 | 76.5 | |
| **Total** | | **11** | **21.6** | **40** | **78.4** | **51** | **100** | |

Based on the table above, it was found that the majority of respondents with good knowledge were compliant with taking medication, amounting to 9 people (17.6%), and the majority of respondents with poor knowledge were not compliant with taking medication, amounting to 37 people (72.5%). The results of the statistical test using *chi-square* showed that there was a relationship between knowledge and medication compliance in pulmonary tuberculosis patients. in the working area of the North Cimahi Health Center (p=0.000).

### *The Relationship Between Family Support and Medication Compliance in Pulmonary Tuberculosis Patients*

**Table 2.**Determinants of Family Support and Medication Compliance in Pulmonary Tuberculosis Patients in the working area of the North Cimahi Health Center.

| No | Support Family | Compliance | | | | *Total* | | *P-value* |
|---|---|---|---|---|---|---|---|---|
| | | Obedient | | No Obedient | | | | |
| | | f | % | f | % | F | % | |
| 1 | Good | 9 | 17.6 | 7 | 13.7 | 16 | 31.4 | 0,000 |
| 2 | Not enough | 2 | 3.9 | 33 | 64.7 | 35 | 68.6 | |
| **Total** | | **11** | **21.6** | **40** | **78.4** | **51** | **100** | |

Based on the table above, it was found that the majority of respondents who received good support were compliant with taking their medication, amounting to 9 people (17.6%), and the majority of respondents who received poor support were not compliant with taking their medication, amounting to 33 people (64.7%). The results of the *chi-square* statistical *test* showed that there was a relationship between family support and medication adherence in pulmonary tuberculosis patients. in the working area of the North Cimahi Health Center (p=0.000).

***The Relationship Between Education and Medication Compliance in Pulmonary Tuberculosis Patients***

**Table 3.**The Relationship Between Education and Medication Compliance in Pulmonary Tuberculosis Patients in the working area of the North Cimahi Health Center.

| No | Education | Compliance | | | | *Total* | | *P-value* |
|---|---|---|---|---|---|---|---|---|
| | | Obedient | | No Obedient | | | | |
| | | f | % | f | % | F | % | |
| 1 | Tall | 8 | 15.7 | 5 | 9.8 | 13 | 25.5 | 0,000 |
| 2 | Low | 3 | 5.9 | 35 | 68.6 | 38 | 74.5 | |
| **Total** | | **11** | **21.6** | **40** | **78.4** | **51** | **100** | |

Based on the table above, it was found that respondents with higher education were mostly compliant with taking medication, amounting to 8 people (15.7%), and respondents with lower education were mostly non-compliant with taking medication, amounting to 35 people (68.6%). The results of the *chi-square statistical test* showed that there was a relationship between education and medication compliance in pulmonary tuberculosis patients. in the working area of the North Cimahi Health Center (p=0.000).

***The Relationship Between Work and Medication Compliance in Pulmonary Tuberculosis Patients***

**Table 4.**Relationship between Work and Medication Compliance in Pulmonary Tuberculosis Patients in the working area of the North Cimahi Health Center.

| No | Work | Compliance | | | | *Total* | | *P-value* |
|---|---|---|---|---|---|---|---|---|
| | | Obedient | | No Obedient | | | | |
| | | f | % | f | % | F | % | |
| 1 | Work | 8 | 15.7 | 7 | 17.6 | 15 | 29.4 | 0.001 |
| 2 | No Work | 3 | 5.9 | 33 | 60.8 | 36 | 70.6 | |
| **Total** | | **11** | **21.6** | **40** | **78.4** | **51** | **100** | |

Based on the table above, it was found that the majority of employed respondents were compliant with taking their medication, amounting to 8 people (15.7%), and the majority of unemployed respondents were non-compliant with taking their medication, amounting to 33 people (64.7%). The results of the *chi-square statistical test* showed that there was a relationship between employment and medication compliance in pulmonary tuberculosis patients. in the working area of the North Cimahi Health Center (p=0.001).

***The Relationship Between Attitude and Medication Compliance in Pulmonary Tuberculosis Patients***

**Table 5.** The Relationship Between Attitude and Medication Compliance in Pulmonary Tuberculosis Patients in the working area of the North Cimahi Health Center.

| No | Attitude | Compliance | | | | *Total* | | *P-value* |
|---|---|---|---|---|---|---|---|---|
| | | Obedient | | No Obedient | | | | |
| | | f | % | f | % | F | % | |
| 1 | Positive | 7 | 13.7 | 2 | 3.9 | 9 | 17.6 | 0,000 |
| 2 | Negative | 4 | 7.8 | 38 | 74.5 | 42 | 82.4 | |
| **Total** | | **11** | **21.6** | **40** | **78.4** | **51** | **100** | |

Based on the table above, it was found that respondents had a positive attitude well, the majority were compliant in taking medication, as many as 7 people (13.7%) and The majority

of respondents with negative attitudes were non-compliant with medication, amounting to 38 people (74.5%). The results of the *chi-square statistical test* showed that there was a relationship between attitude and medication compliance in pulmonary tuberculosis patients. in the working area of the North Cimahi Health Center in 2017 (p=0.000).

**Multivariate Analysis**

Multivariate analysis was carried out using multiple logistic regression tests in stages , namely, in the first stage, selecting independent variables that have the potential to be included in the multivariate data analysis model. with a p-value < 0.25. In the next stage, all independent variables with a p-value < 0.05 were entered into the *logistic regression test model* and selected using the *Backward LR method*. The results of the multiple logistic regression analysis can be seen in the following table:

**Table 6.** Results of Multiple Logistic Regression Test Analysis in the North Cimahi Community Health Center Work Area**.**

| Variables in the Equation | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **B** | **SE** | **Wald** | **df** | **Sig.** | **Exp(B)** |
| Step 1 [a] | Knowledge(1) | 2,762 | 2,250 | 1,507 | 1 | .220 | 15,836 |
| | Support(1) | 1,322 | 1,366 | .937 | 1 | .333 | 3,751 |
| | Attitude(1) | .118 | 2,086 | .003 | 1 | .955 | 1.125 |
| | Education(1) | 2,351 | 1,378 | 2,908 | 1 | .088 | 10,492 |
| | Job(1) | 2,869 | 1,472 | 3,799 | 1 | .051 | 17,615 |
| | Constant | -4.208 | 1,761 | 5,706 | 1 | .017 | .015 |
| Step 2 [a] | Knowledge(1) | 2,863 | 1,380 | 4,302 | 1 | .038 | 17,512 |
| | Support(1) | 1,297 | 1,293 | 1,007 | 1 | .316 | 3,658 |
| | Education(1) | 2,357 | 1,375 | 2,937 | 1 | .087 | 10,560 |
| | Job(1) | 2,891 | 1,423 | 4.128 | 1 | .042 | 18,007 |
| | Constant | -4.186 | 1,717 | 5,940 | 1 | .015 | .015 |
| Step 3 [a] | Knowledge(1) | 3,373 | 1,288 | 6,861 | 1 | .009 | 29,169 |
| | Education(1) | 2,502 | 1,335 | 3,513 | 1 | .061 | 12,205 |
| | Job(1) | 2,984 | 1,395 | 4,573 | 1 | .032 | 19,766 |
| | Constant | -3,910 | 1,584 | 6,089 | 1 | .014 | .020 |

**a. Variables entered in step 1: Knowledge, Support, Attitude, Education, Occupation.**

Based on table 6 , step 3 shows that the variable that has the most dominant influence on medication adherence in pulmonary tuberculosis patients In the North Cimahi Community Health Center work area, the variable is knowledge. Looking at the OR (Exp B) value from the multiple logistic regression test, it is known that the knowledge variable has the highest OR value, namely 29.169, which indicates that the knowledge variable is the variable with the strongest influence on medication compliance in pulmonary tuberculosis patients in the working area of the North Cimahi Health Center.

## 4. DISCUSSION

Based on the research results, it was obtained that the significance value of *the p Valve* = 0.000 < 0.05 , which means that knowledge influences medication adherence in pulmonary tuberculosis patients. Knowledge is one of the risk factors that influences the results of research on medication adherence in pulmonary tuberculosis patients.

The results of the research conducted Prihantana's (2016) research showed a significant relationship between knowledge and the level of treatment compliance in pulmonary tuberculosis patients at Dr. Soehadi Prijonegoro Regional Hospital, Sragen, with a significance value of 0.009.

According to Friska Junita (2012) success or The success of tuberculosis treatment depends on the patient's knowledge, self-efficacy, motivation, and support for complete treatment, which will influence patient compliance. The impact of stopping medication is the

emergence of drug-resistant tuberculosis bacteria. If this continues and the bacteria continue to spread, drug control will become increasingly difficult and the death rate from tuberculosis will increase. The goal of tuberculosis treatment is not simply to provide medication, but also to monitor and educate patients about the disease. The DOTS program encourages patients who have received medication or a prescription to continue purchasing or taking medication, taking it regularly, and returning for follow-up visits to assess treatment outcomes.

Patient knowledge of anti-tuberculosis medication consumption indicates adherence to the treatment program, meaning they take their medication on time and consistently take it, even for one day during the intensive phase and the three-times-a-week continuation phase, according to the recommended dosage. Patients continue taking their medication despite side effects, even if they are not fatal, and even after symptoms have resolved. (Arief Kurniawan)

Based on field data, it was found that the majority of respondents had insufficient knowledge, as many as 39 people (76.5%), and of that number, 37 people were non-compliant. This shows that due to lack of education, patients with Pulmonary TB have less understanding about Pulmonary TB, starting from the symptoms of the disease to the impact of the disease on the sufferer himself and on the people around the sufferer. This is due to the lack of efforts of sufferers to obtain more information about Pulmonary TB, which is caused by the limitations of sufferers in accessing information due to the rare counseling about Pulmonary TB at the Sidambuan Health Center , counseling carried out by health promotion workers is only carried out if there is a patient who is suspected of Pulmonary TB, then explained about the disease. However, special counseling about Pulmonary TB has never been carried out, because the counseling that is often carried out is inserted with other health materials.

Based on the results of simple interviews with several respondents, it was found that TB sufferers did not know that pulmonary TB patients were required to take medication for a month without stopping. As a result of this ignorance, sufferers did not take their medication regularly, which caused sufferers not to recover from their illness and even risked transmitting their illness to other people.

In this regard, the North Cimahi Community Health Center needs to make intensive efforts to actively provide counseling by explaining to patients and their families about Pulmonary TB, the impact of Pulmonary TB disease and how to treat it. Because many families of patients do not know from health workers that their family members must undergo long-term treatment, and the disease can be transmitted so that families try to find more information that can prevent transmission and find information about the length of Tuberculosis treatment. In addition, the promotional efforts carried out by the North Cimahi Community Health Center are limited to distributing leaflets to patients and posting posters about Pulmonary TB in places that are easily seen by patients and the surrounding community , but without being accompanied by active efforts by health promotion workers to provide special counseling about Pulmonary TB, for example by collaborating across sectors such as villages and sub-districts to provide explanations about health, especially about Pulmonary TB so that the community becomes more understanding in treating their disease. Because so far, the counseling that has been carried out is only during examinations and administration of medication to patients by giving messages to continue taking medication regularly and reminding them of the dangers of pulmonary TB, without any follow-up from health workers as to whether these efforts have produced results or not in changing the patient's behavior in their compliance with taking medication regularly.

**The Relationship Between Family Support and Medication Compliance in Pulmonary Tuberculosis Patients**

Based on research, it was found that family support is one of the risk factors that influences medication adherence in pulmonary tuberculosis patients. in the North Cimahi Community Health Center work area. This is indicated by a significance value of $p = 0.000$ (<0.05).

This research is in line with research Irnawati (2022) on the Influence of Family Support on Medication Adherence in Tuberculosis Patients in the North Cimahi Community Health Center Work Area. The study found a relationship between family support and adherence to taking anti-tuberculosis medication.

According to Irnawati (2022) , achieving successful treatment is not solely the patient's responsibility; other factors must be considered to influence the patient's behavior in completing and complying with their treatment. Several factors are associated with treatment adherence, including individual patient factors, social support, support from healthcare providers, and family support.

Family support is a crucial factor in tuberculosis treatment adherence. Family support, in this case, involves encouraging patients to take their medication, showing sympathy and concern, and not avoiding the patient's illness. When providing support to a family member with TB, support from all family members is crucial to the patient's healing and recovery process. (Irnawati, 2016)

Family support significantly contributes to the success of a person's treatment by consistently reminding patients to take their medication and encouraging them to remain diligent. A positive family role provides powerful motivation and support in encouraging patients to take their medication regularly as recommended. Having full support and motivation from the family can influence the behavior of TB patients taking their medication regularly. Therefore, the family needs to play an active role in supporting patients to take their medication regularly until declared cured by healthcare providers.

However, based on the data obtained in the study, it was found that 35 respondents lacked family support, and of these 35, 33 were non-compliant with treatment. The findings in the field indicate that family support is essential for the treatment of pulmonary TB.

The support provided to patients is not fully implemented. This is evident in the fact that even though free treatment is available, the results are not optimal due to a lack of encouragement from families, laziness, and patients' repeated treatment when their illness recurs. Incomplete treatment can even lead to other family members contracting the disease Based on the results of simple interviews with several pulmonary TB sufferers, it was found that families were less than emotionally supportive, namely by not reminding patients to get enough rest. This is likely due to the lack of knowledge that families have about the treatment undergone by pulmonary TB patients.

Furthermore, families also lack support and appreciation for TB patients. They lack the freedom and trust to make decisions regarding their treatment, such as not praising patients when they take their medication regularly, not knowing about their treatment progress, and not monitoring their progress. This is because families consider patients to be the same as other family members who do not have TB. Therefore, patients are not given priority during treatment. Furthermore, families do not value patients' suggestions and complaints during treatment, which causes patients to be less motivated to take their medication regularly. Fulfilling support and appreciation means that families appreciate the efforts made by patients to maintain their health. This support and appreciation are carried out by providing good examples for patients and providing constructive criticism so that patients can be motivated to further improve their health.

Patients also receive less information support, which affects their compliance in taking medication. This may be due to the patient's family not yet being informed by health workers

that their family member must undergo long-term treatment, and that the disease is contagious. Therefore, the family tries to seek more information to prevent transmission and seek information about the duration of tuberculosis treatment. This can be influenced by the lack of counseling provided by health workers and the intensity of the family's exposure to sources where information can be obtained, such as newspapers, TV, magazines, radio, and the experiences of neighbors. If the family is rarely exposed to these sources of information, the family will only receive little information about the patient's health. The family's acceptance or understanding of information can also be influenced by the family's level of education, the majority of whom have a high school education, which is categorized as low education, thus affecting the family's ability to absorb information.

Instrumental support is essential for TB patients. This support includes direct assistance, such as giving/lending money and taking patients to medical check-ups. However, this study found insufficient instrumental support, with families not supporting patients by providing / lending money for treatment and taking patients to medical check-ups. This is caused by income factors or the economic status of the family, because as is known, the majority of respondents do not work, so the income earned by the family is low , making it difficult for family members to provide the needs required by the patient for optimal treatment.

The government currently provides free treatment for sufferers through the BPJS and KIS programs. However, based on simple interviews with several TB sufferers, they found that due to economic constraints, they cannot afford the cost of treatment and therefore choose not to seek treatment. Therefore, the participation of health workers is needed to guide sufferers to better manage their health.prioritize their health and advise the family to provide support and motivation to the sufferer.

**The Relationship Between Education and Medication Compliance in Pulmonary Tuberculosis Patients**

Income is a risk factor that influences treatment default in TB patients. This is indicated by a significance value of $p = 0.000$ (<0.05). Education is a process of applying concepts according to a field. The basic concept of education is a learning process, meaning that within education, growth, development, or change occurs toward greater maturity, better, and more mature individuals, groups, or communities.

This means that the lower the level of education, the less compliant the patient will be in taking medication because a person's low level of education greatly affects a person's ability to absorb information, which can affect the level of understanding about pulmonary TB, treatment methods, and the dangers of taking medication irregularly.

The results of previous research conducted by Erawatyningsih ( 2009 ) with the research title Factors Influencing Non-Compliance with Treatment in Pulmonary Tuberculosis Patients , that low education is the dominant factor influencing non-compliance with treatment in pulmonary TB patients in the Working Area of the West Dompu Health Center, Woja District, Dompu Regency, West Nusa Tenggara Province.

Based on research , it was found that the majority of respondents had less education (74.5%), which affected their adherence to treatment. The higher a person's education level, the greater their awareness of health, both for themselves and for others and their families. Educational background influences a person's thinking and actions, and through education, A person can increase intellectual maturity, enabling them to make better decisions. In this case, higher education will motivate TB patients to adhere to their anti-tuberculosis medication regimen. However, this can be addressed by actively engaging health workers in home visits to patients who are non-compliant with their treatment. The patient's visit card can then be used to determine their adherence to treatment, allowing health workers to monitor the patient's health condition.

**The Relationship Between Work and Medication Compliance in Pulmonary Tuberculosis Patients**

Occupation is one of the risk factors that influences medication adherence in patients with pulmonary tuberculosis. This is indicated by the significant *p- value.* = 0.001 (<0.05). Work is an activity carried out to earn a living. Work environment factors influence a person's exposure to a disease. Poor work environments support the risk of pulmonary TB infection, including for drivers, laborers, pedicab drivers, and others, compared to people who work in office areas.research aligns with research conducted by Su-Jin Cho (2014) , which found that employment significantly correlates with patient adherence to treatment. Employed patients tended to be less compliant with treatment than unemployed patients. This was also influenced by the type of work and the length of working hours.

According to Thomas, as quoted by Nursalam (2022), work is something that must be done, primarily to support oneself and one's family. Work is not a source of pleasure, but rather a boring, repetitive, and challenging way to earn a living (Wawan and Dewi M, 2010). Working people tend to have less time to visit health facilities (Notoatmodjo, 2020).

However, in this study, it was found that patients with Pulmonary Tuberculosis in the working area of the North Cimahi City Community Health Center were unemployed (71%). The reason why unemployed patients tend to be irregular in their treatment is based on their opinion that going to the community health center requires transportation costs and is focused on meeting daily needs rather than treatment. However, the medicine provided by the community health center is free. So there is no reason for patients to be irregular in their treatment even if they are unemployed. Therefore, coordination and assistance with other agencies across sectors, for example from the local sub-district, is expected. So if transportation is difficult, it is hoped that the community health center staff will bring the medicine to the patient so that they do not stop taking the medicine.

**The Relationship Between Attitudes and Medication Compliance in Pulmonary Tuberculosis Patients**

Attitude is a risk factor that influences medication adherence in patients with pulmonary tuberculosis. This is indicated by a significance value of $p$ = 0.000 (<0.05). Attitude is a person's relaxation or response that is still closed to a stimulus or object, views or feelings accompanied by a tendency to act according to the object. Based on the results of the frequency distribution, it is known that 82% of Pulmonary Tuberculosis sufferers in the North Cimahi City Health Center work area have a poor attitude in complying with taking medication.

This research aligns with the results of previous research conducted by Budiman ( 2010 ) entitled " Analysis of Factors Associated with Medication Compliance in Pulmonary TB Patients During the Intensive Phase at Cibabat General Hospital, Cimahi. " The results showed a strong correlation between patient attitudes (r=0.56). on adherence to taking pulmonary TB medication. From the factor analysis process, two factors were formed, namely respondent characteristic factors (predisposition) consisting of age, education, income and knowledge and reinforcing factors, *namely* attitude.

Compliance is an attitude that is a response that only appears when the individual is faced with a stimulus that requires an individual reaction. This is supported by the theory put forward by Notoatmodjo that compliance is an attitude that will emerge in a person as a reaction to something contained in the rules that must be followed. Mednick, Higgins, and Kirschenbaum state that the formation of attitudes is influenced by three factors: social influences such as norms and culture, the individual's personality character, and the information the individual has received (Junita, 2012).

Based on research It is known that respondents who have a positive attitude about taking anti-tuberculosis drugs will comply with the regulations. Meanwhile, respondents who have a negative attitude do so because they do not yet clearly and effectively understand the

benefits of taking the medication. A positive attitude from sufferers can be seen through the sufferer's participation in counseling activities carried out by health workers, this shows that even though the respondent's knowledge is lacking, because the respondent imitates other people who have a positive attitude regarding their compliance in taking medication, it influences their behavior to have a positive attitude.

Therefore, health education activities must be carried out continuously and intensively for TB patients who have not or are currently undergoing treatment so that follow-up treatment can be carried out.

## 5. CONCLUSION AND SUGGESTIONS

### Conclusion

Based on results And the discussion that has been presented on chapter previously can be taken a number of conclusion For study This namely : There is an influence of knowledge , family support, education, work, and attitude on medication compliance in pulmonary tuberculosis patients in The working area of the North Cimahi Community Health Center. The variable that has the most dominant influence on medication adherence in pulmonary tuberculosis patients in the working area of the North Cimahi Community Health Center is the knowledge variable.

### Suggestion

Based on the results obtained , then recommendation from researchers is:

For Health Workers: It is hoped that TB sufferers will always be reminded when taking medication to pay more attention to the regularity of taking medication. to increase the cure rate for pulmonary TB and reduce the incidence of pulmonary TB, especially the recurrence rate; To actively conduct outreach by involving cross-sectoral stakeholders, including sub-districts, religious leaders and community leaders, with the aim of increasing patient knowledge regarding pulmonary TB, its impacts and treatment efforts so that patients can recover from their disease; Striving to increase public knowledge about tuberculosis, such as symptoms and transmission methods, treatment and prevention, through providing comprehensive and continuous education in both formal and informal activities, using language that is easily understood by local residents; Striving to improve the ability of health workers to communicate, provide information and education about tuberculosis through training and internal outreach at Community Health Centers , as well as implementing strategies to improve medication control; Striving to improve the provision of information through an active role in health centers through electronic media, brochures or leaflets and involving participants so that they can act in order to help patients to undergo treatment.

For pulmonary TB sufferers**:** Patients are expected to take their medication regularly and receive treatment according to the schedule. Furthermore, patients are advised to consume nutritious food, maintain a clean home environment, and ensure proper ventilation to allow sunlight and fresh air into the home. For pulmonary TB patients, treatment should be continued to prevent treatment failure, which could lead to drug resistance and an active source of infection**;** For the family to play an active role in monitoring, not avoiding the patient and providing support so that the patient completes the treatment until it is finished and declared cured by health workers**;** Try to avoid too much direct contact**;** Striving to improve clean and healthy lifestyles in everyday life.

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