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The Relationship Of Knowledge, Attitudes And Actions With Medication Adherence In Pulmonary Tuberculosis Patients At The Pulmonary Polyclinic Of Subulussalam City Hospital

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Abstract ; Tuberculosis (TB) was still a global challenge in the world of health and required special attention to increase the level of patient compliance with treatment. This study aimed to explore the relationship between patient knowledge, attitudes, and actions and the level of adherence to taking medication in TB patients at the Pulmonary Polyclinic of Subulussalam City Hospital. The study used an observational analytical design with a cross-sectional approach. The research population involved all TB patients undergoing treatment at Subulussalam City Hospital, with a sample of 76 respondents selected through accidental sampling. Data were collected through interviews using the MMAS-8 questionnaire, and data analysis was carried out using the chi-square test. The majority of respondents showed a high level of knowledge (47.37%), poor attitudes (59.21%), and good actions (64.47%), but the level of compliance was low (46.05%). Statistical analysis showed that there was a significant relationship between knowledge ($p=0.000$), attitudes ($p=0.014$), and actions ($p=0.010$) with the level of adherence to taking medication. The knowledge, attitudes, and actions of TB patients at the Lung Polyclinic of Subulussalam City Hospital had a significant effect on their level of compliance in taking medication. Efforts were needed to increase patient understanding and special approaches to increase compliance to support the success of TB therapy.

Keywords: Knowledge, attitude, action, medication adherence

INTRODUCTION

Tuberculosis (TB) is a condition caused by the bacterium *Mycobacterium Tuberculosis* and can cause respiratory problems such as prolonged coughing, difficulty breathing, excessive sweating at night, and fever.¹ Tuberculosis It remains one of the most dangerous infectious diseases in the world today. The danger of TB lies in its ability to infect, damage the lungs, and cause other risks. The WHO ranks TB as the 13th leading cause of death, after COVID-19, among infectious diseases.² The World Health Organization (WHO) report shows that 10.6 million people in the world were diagnosed with tuberculosis (TB) in 2022, up 2.9% from the previous year which reached 10.3 million cases.² Indonesia is also one of the countries with the highest TB burden in the world after India. In 2020, the number of tuberculosis cases in Indonesia reached 351,936 cases.³

In 2021, the number of tuberculosis cases was 397,377 cases.⁴ In 2022, the number of tuberculosis cases was 677,464 cases.⁵ In Aceh Province in 2020, there were 6,456 cases of TB found.⁶ In 2021, the number of suspected tuberculosis cases receiving health services was 85,945.⁷ In 2022, the number of suspected tuberculosis cases was found to be 3,936 cases.⁸ Tuberculosis can be treated and prevented with uninterrupted routine treatment according to standards *Directly Observed Treatment Shortcourse* (DOTS) through the administration of

Anti-Tuberculosis Drugs (OAT) for 6 months.⁹ TB treatment must be appropriate and thorough to prevent drug resistance.¹⁰

Long TB treatment and drug side effects often make patients non-compliant. In 2021 and 2022, the percentage of complete treatment decreased from 2021 (67.7%) to 2022 (63.0%).¹¹ Adherence to TB treatment is key in tuberculosis control.¹² Non-adherence to Pulmonary TB treatment can result in low cure rates, increased risk of further disease, death, and an increase in the number of Pulmonary TB patients who have treatment-resistant Acid Resistant Bailli (BTAs). These resistant patients can be a source of transmission of resistant bacteria in the community.¹² The adherence value of taking TB medication is influenced by the patient's knowledge, attitudes, and actions.¹³ Knowledge plays an important role in shaping actions. This also applies to individual behavior, because the knowledge a person possesses influences the formation of new behaviors, especially in adults involved in the cognitive domain.¹⁴ Knowledge affects the level of adherence in taking drugs because the more educated and knowledgeable a person is about his disease and how to cure it, the more likely he is to be obedient and confident in the success of the treatment.¹⁵ Based on the results of Zahra's research¹⁶ It was found that the relationship between knowledge, attitudes and actions with adherence to taking medication successively got a significance value of 0.028, 0.016 0.008, had a significant positive relationship.

RSUD Subulussalam is a health service owned by the Subulussalam City Regional Government located on Jln. Hamzah Fansuri, Rahmah Hamlet, Kampong Subulussalam Barat, Simpang Kiri District, Subulussalam City, Aceh Province. Based on medical record data from Subulussalam City Hospital, TB cases at the lung polyclinic are still high at 285 in 2020, 654 in 2021, and increased to 1497 in 2022.¹⁷ The number of cases is a case that has been successfully diagnosed and served by health workers. The results of the initial survey with direct interviews using the MMAS-8 questionnaire at RSUD Kota Subulussalam showed that out of 10 TB patients interviewed, 100% had a low adherence rate. The patients admitted that they were often inconsistent or regular in taking the drugs given by RSUD Kota Subulussalam. This is due to several factors such as forgetfulness, boredom due to the long duration of treatment, and lack of understanding of the consequences of inconsistency in treatment. As a result, patients tend to feel that missing a day or two of taking medication will not significantly affect their pulmonary TB recovery. The high incidence of pulmonary TB and low patient adherence to treatment are the background of this study to examine the relationship between knowledge, attitudes, and behavior of patients with the level of

adherence in treatment in patients *Tuberculosis Lung* at the pulmonary polyclinic of Subulussalam City Hospital.

INGREDIENTS AND WAYS

This type of research is an observational analytical study with a Cross sectional approach. The location of this research was carried out at the Subulussalam City Regional General Hospital in December 2023 – January 2024. The population in this study was all TB patients who were undergoing treatment, which was 318. The sampling technique is *Accidental sampling*, sample calculation using the *Slovin* formula with an error rate of 10% and obtained the number of samples in this study amounted to 76 respondents. The data analysis used is *univariate* and *bivariate analysis test*. *Univariate analysis* with frequency distribution of knowledge, attitudes, actions and compliance. *Bivariate analysis* in this study was used in order to find correlations between dependent variables, namely adherence to taking medication with independent variables, namely knowledge, attitudes and actions.

RESULT

Frequency distribution, the majority of respondents had a high level of knowledge, as many as 36 people (47.37%). Most respondents showed a bad attitude as much as (59.21%). The majority of respondents showed good actions as many as 49 people (64.47%). The majority of respondents showed a low compliance rate of 35 people (53.9%).

Of the total 36 respondents with a high level of knowledge, most (38.89%) showed a moderate level of compliance, while (30.56%) showed high compliance, and (30.56%) had low compliance. At a moderate level of knowledge, out of 21 respondents, (28.57%) had high compliance, (42.86%) had moderate compliance, and (28.57%) had low compliance. At the low knowledge level, most respondents showed a low level of compliance, amounting to (94.74%) of the 19 respondents, only 5.26% of respondents with a low level of knowledge showed a moderate level of compliance. From the analysis obtained the results of the *Chi-square test* obtained a value ($P\text{ value} = 0.000 < \alpha = 0.05$) so that H_0 was rejected H_a was accepted, which means that there is a relationship between knowledge and adherence to taking medication at the Polyclinic of Subulussalam City Hospital.

Based on table 4 above, out of a total of 31 respondents with good attitudes, the majority (38.71%) had a high level of compliance, followed by (32.26%) with a low level of compliance, and (29.03%) with a moderate level of compliance. Of the total 45 respondents with unfavorable attitudes, the majority (55.56%) had a low compliance rate, followed by

(33.3%) with a moderate compliance rate, and (11%) with a high compliance rate. From the analysis obtained the results of the *Chi-square test* obtained a value ($P\text{ value} = 0.014 < \alpha = 0.05$) so that H_0 was rejected H_a accepted, which means that there is a relationship between attitude and adherence to taking medication at the Polyclinic of Subulussalam City Hospital.

Based on there were 49 respondents with good actions, of which (34.69%) with low compliance, (34.69%) with moderate compliance, and (30.61%) with high compliance. Of the total 26 respondents with bad actions, the majority (66.67%) had low compliance, (25.93%) had moderate compliance, and (7.41%) had high compliance. From the analysis obtained the results of the *Chi-square test* obtained a value ($P\text{ value} = 0.010 < \alpha = 0.05$) so that H_0 was rejected H_a was accepted, which means that there is a relationship between action and adherence to taking medication at the lung polyclinic of Subulussalam City Hospital.

DISCUSSION

The relationship of knowledge with medication adherence in TB patients at the Lung Polyclinic of Subulussalam City Hospital.

Based on the results of statistical tests with the *Chi Square* test, a significance value of 0.000 was obtained. This value shows that the $p\text{-value}$ is smaller than the significance level (0.05), so it can be interpreted that there is a relationship between knowledge and drug adherence in tuberculosis (TB) patients at the Lung Polyclinic of Subulussalam City Hospital.

The results of this study are consistent with the findings Halim M et al¹⁸ which also found a significant relationship between the level of knowledge and the level of adherence to taking anti-tuberculosis drugs (OAT) at Budi Lestari Bekasi Hospital, with a correlation value (r) of 0.423 and a value of $p\text{-value}$ amounted to 0.001. The findings confirm that TB patients' knowledge is related to their level of adherence to taking drugs.

Other research conducted by Adam L¹⁹ It also indicates a relationship between the knowledge of people with pulmonary tuberculosis and adherence to taking anti-tuberculosis drugs. In the study, it was obtained $p\text{-value}$ which is less than the significance level (0.05).

The findings of this study showed that the percentage of patients with low adherence was found in patients who had low knowledge (94.74%). This is because most patients do not understand the time of taking drugs according to the schedule determined by the doctor, what are the consequences if the drug is not taken according to the schedule determined by the doctor, patients also assume if they are not on time in taking the drug it will not have much effect on the healing rate of pulmonary TB they experience.

Thus, it can be concluded that the knowledge of the patient *tuberculosis* The lungs have a role to play with their adherence to taking medications. Respondents with high or moderate knowledge are more likely to have high adherence in taking medication compared to respondents with low knowledge. Low understanding of pulmonary TB disease will create a bad habit, the habit of people with the disease not taking drugs, and irregular treatment and other factors.²⁰

The relationship between attitude and adherence to taking medication in Tb patients at the Lung Polyclinic of Subulussalam City Hospital.

Based on the results of statistical tests with *Chi square tests*, a significance value of 0.014 is obtained which is p smaller than 0.05 ($p < \alpha$) and it can be interpreted that there is a relationship between attitude and adherence to taking medication in TB patients at the Lung Polyclinic of Subulussalam City Hospital.

This is in accordance with research Listyarini²¹ shows that there is a relationship between the attitude of TB sufferers with adherence to taking anti-drugs *tuberculosis* at RSI Nahdhotul Ulama Demak with the direction of positive relationships and the strength of strong relationships. Analysis results *Rank Spearman* A P value of 0.000 and a Rho value of 0.845 were obtained. These results conclude that there is a relationship between the attitude of TB patients and compliance.

This research is also in line with research Ch RY²² Where in the study obtained statistical test results obtained ρ value = 0.001 where $\rho < \alpha$ ($0.001 < 0.05$) which means there is a significant relationship between attitude and adherence to taking anti-drugs *tuberculosis* at Puskesmas Tarus Kupang Regency.

The findings of this study showed that the percentage with low adherence was found in patients who had a bad attitude of (55.56%). Data shows that patients who have a bad attitude tend to comply less with the rules of drug consumption. This is because some patients still often delay taking TB drugs and stop doing treatment when the pain disappears. This bad attitude can lead to non-compliance of patients in undergoing treatment. A person's good attitude will increase adherence to taking medication. The results explain that attitudes have a relationship in their level of adherence to tuberculosis medication adherence, where good attitudes correlate with high adherence.

The relationship between action and adherence to taking medication in TB patients at the Lung Polyclinic of Subulussalam City Hospital.

Based on the results of statistical tests with *Chi square tests*, a significance value of 0.020 is obtained, meaning that p is smaller than 0.05 ($p < \alpha$) and it can be interpreted that

there is a relationship between knowledge and adherence to taking medication in TB patients at the Lung Polyclinic of Subulussalam City Hospital.

The findings of this study are in line with research conducted by Zahra AS¹⁶ According to the study, test *Spearman Rho* showed a significant relationship between patient action and medication adherence rates in pulmonary tuberculosis patients. This alignment of findings provides consistency and strengthens evidence that patients' actions have a marked impact on their level of adherence to treatment.

Not only that, the findings of this study also support the findings of the study Yuda AA¹⁵ The study, entitled "The Relationship between Knowledge, Attitudes, and Actions with Adherence to Taking Medication in Pulmonary TB Patients at the Tanah Kali Kedinding Health Center," showed a significant relationship between patient actions and the adherence rate of taking pulmonary TB medication at the Kali Kedinding Health Center, with a p value of 0.006. These results confirm that patient actions have an association in improving patient adherence to drug therapy.

The findings of this study showed a low percentage of adherence in patients who had bad actions (66.67%). This is because TB patients are often inconsistent or regular in taking drugs, and patients do not meet the proper treatment schedule because TB sufferers claim to often feel bored because the drinking period is too long.

Thus, the consistent findings of this study along with previous studies provide a solid foundation that patient actions have an association with medication adherence in pulmonary tuberculosis patients. The implications of these findings could pave the way for the development of more targeted interventions and approaches to improve patients' positive actions towards treatment, with the ultimate goal of improving therapy success and reducing treatment failure rates.

CONCLUSION AND RECOMENDATION

Based on the results of the research that has been done, it can be concluded that:

1. There is a relationship between knowledge and adherence to taking medication in tuberculosis patients at the Lung Polyclinic of Subulussalam City Hospital with a p value = 0.000
2. There is a relationship between attitude and adherence to taking medication in tuberculosis patients at the Lung Polyclinic of Subulussalam City Hospital with a p value = 0.014
3. There is a relationship between attitude and adherence to taking medication in tuberculosis patients at the Lung Polyclinic of Subulussalam City Hospital with a p value = 0.0010

The suggestions that researchers give after examining this problem are as follows:

To Subulussalam City Hospital:

- Improve health counseling and education programs for TB patients and their families.
- Optimizing the role of health workers in providing regular support and monitoring to patients at the Lung Polyclinic of Subulussalam City Hospital.

To Patients and Families:

- Increase awareness of the importance of compliance through health literacy.
- Invite the family to play an active role as a support and reminder of the patient's medication schedule.
- Increase awareness of patients' families about the use of masks.

Further research:

- Conduct follow-up research to in-depth into psychological, socioeconomic, and cultural factors that can affect TB patient adherence
- Lung.

DEAR REMARKS

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