



THE EFFECT OF TUBERCULOSIS PROGRAM QUALITY AND PATIENT KNOWLEDGE ON ATTITUDE AND ITS IMPLICATIONS ON COMPLIANCE BEHAVIOR IN TAKING ANTI-TUBERCULOSIS DRUG (OAT) IN THE WORK AREA OF UPTD KARAWANG COMMUNITY HEALTH CENTER, SUKABUMI REGENCY

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Abstract

This study aims to obtain empirical evidence of employee job satisfaction as a moderator of the effect of online motivation, motivation and leadership on employee performance with employee job satisfaction as a moderator. The dependent variable in this study is employee performance, the independent variables in this study are online training, motivation and leadership, while the moderating variable in this study is employee job satisfaction. The research was conducted on employees of PT. Bank Rakyat Indonesia Sidoarjo Branch Office in 2023. This type of research is quantitative. The data in this study used primary data by distributing questionnaires. The sampling method uses purposive sampling. The data analysis technique used is Moderated Regression Analysis (MRA). The results of this study indicate that there is a significant positive effect on employee job satisfaction which moderates online training, motivation and leadership on employee performance. The results of this study are



expected to help the management of PT. Bank Rakyat Indonesia Sidoarjo Branch Office in knowing the effect of increasing the performance and job satisfaction of BRI Sidoarjo branch employees.

INTRODUCTION

Indonesia ranks second in the world with the highest number of TB cases, after India. In 2021, there were an estimated 969,000 TB cases in Indonesia, an increase of 17% from 2020 which reached 824,000 cases (WHO Global Tuberculosis Report, 2022). In West Java Province, the TB situation is also concerning. In 2022, there were an estimated 148,070 TB cases, while 148,737 TB cases were detected but not yet treated. The treatment success rate in West Java only reached 80% of the national target of 90% (SITB, 2023). Sukabumi Regency is one of the areas with the highest number of TB cases in West Java, with 8,623 confirmed cases in 2023 and a treatment success rate of 85% (SITB, 2024).

UPTD Puskesmas Karawang, Sukabumi Regency, is one of the health centers with high TB case detection and treatment achievements, which is 93%. However, the prevalence of compliance with taking anti-tuberculosis drugs (OAT) is still a challenge, with only 36% of patients fully compliant, 27% less compliant, and 37% not compliant at all (Manalu, 2017). This low compliance is caused by several factors, such as patient ignorance about the transmission and signs of the disease, as well as attitudes towards the use of masks and handling phlegm (Ministry of Health of the Republic of Indonesia, 2011; Soemantri, 2015).

TB prevention and patient compliance behavior is very important in TB control efforts. This study aims to analyze the effect of TB program quality and patient knowledge on attitudes and their implications for drug adherence behavior in the Karawang Health Center UPTD work area, Sukabumi Regency.

1. Health Management

Health management is a process that involves a series of activities to organize health services in an effective and efficient manner. According to Diana (2023), the goal of health management is to maximize the use of existing resources in an effort to improve public health. The functions of health management include planning, organizing, directing, and controlling. In this context, the use of appropriate resources and good management are essential to achieve optimal health services. Health management helps ensure that the goals of health organizations, such as hospitals and health centers, can be achieved effectively and efficiently.

2. TB Program at the Health Center

The Tuberculosis (TB) control program in the Health Center is one of the important efforts in suppressing the spread and increasing the recovery of TB patients. According



to the Minister of Health Regulation (2016), each Provincial and Regency/City Health Office must establish a work unit that is responsible for managing the TB control program. This program includes planning, implementation, monitoring, and evaluation to ensure that resources such as funds, personnel, facilities, and infrastructure are sufficiently available. TB case finding is carried out both passively, through patients who come to check themselves, and actively through health screening. The presence of health cadres is very important in helping to trace contacts and provide education in the community.

According to Ni Njoman Juliasih (2020), active TB case finding, for example through promotive and preventive activities such as counseling, helps improve early detection and more effective treatment. This is important to achieve success in tackling TB.

3. Patient Knowledge About TB

Adequate knowledge about Tuberculosis is essential to encourage patient compliance in undergoing treatment. According to Notoatmodjo (2014), knowledge is the result of the human sensing process obtained through experience and perception of an object. Knowledge about TB includes an understanding of the causes of the disease, how it is transmitted, symptoms, and the importance of proper and continuous treatment. This level of knowledge greatly influences patient behavior in complying with treatment.

There are several levels of knowledge identified by Notoatmodjo (2014), starting from the "know" stage to the "evaluation" stage. The higher the patient's level of knowledge about TB disease, the better their compliance behavior in undergoing treatment. This knowledge can be obtained through various means, such as personal experience, education, and interaction with health workers.

4. Patient Attitudes Towards Treatment

Patient attitude towards treatment is one of the key factors in encouraging medication adherence. Attitude is defined as a person's readiness to react to an object or situation based on the knowledge they have. According to Gordon Allport in Lestari (2015), attitude consists of three main components, namely cognitive (belief), affective (emotion), and conative (tendency to act) components.

In the context of TB treatment, a positive attitude is essential for patients to be willing to comply with the treatment recommendations given. Factors that influence this attitude include personal experience, the influence of the social environment, and support from family and health workers. A good attitude will encourage patients to be more obedient and committed in undergoing treatment.

5. Medication Compliance (OAT)

Compliance behavior in taking anti-tuberculosis drugs (OAT) is very important to ensure the success of treatment. According to Stanlaey (2007), compliance is the level at which patients follow the treatment recommendations given by health workers, both

in terms of dosage and time of drug consumption. Good compliance will help prevent drug resistance and increase the chances of recovery.

Factors that influence patient compliance include knowledge, attitudes towards treatment, family support, and interactions with health workers. Kozier (2010) emphasized that individual behavior, including medication compliance, is greatly influenced by their understanding of the importance of following treatment routinely.

6. The Influence of Program Quality on Behavior and Attitudes

The results of the study showed that the quality of the TB program significantly influenced patients' attitudes towards treatment. An effective TB program can increase patients' awareness of the importance of treatment, so that they are more motivated to comply with treatment. According to the study, the quality of the TB program has a significant influence on the attitudes of TB patients, which in turn affects their compliance behavior in taking medication.

In addition, a good TB program can also provide adequate education to patients, which not only increases their knowledge, but also forms a positive attitude towards the importance of complying with treatment according to doctor's advice. Thus, a quality program will have a direct and indirect impact on patient compliance behavior.

RESEARCH METHODS

Quantitative research method is the method used in this study. Quantitative approach to test objective theory by testing the relationship between variables. These variables can be measured by instruments so that numbered data can be analyzed using statistical procedures. The perspective in this study is positivism which shows the traditional form of research and the assumption that quantitative research is greater than qualitative research because it has data, evidence and rational considerations that form knowledge. In this approach, researchers test theories with hypotheses and collect data to support or reject hypotheses (Creswell, 2013).

RESULTS AND DISCUSSION

1. Results of Analysis of TB Program Activities at Health Centers in 2022

Table 3.1 Coverage of TB Program Indicators at UPTD Puskesmas Karawang in 2022

No	Indicator	Target		Achievement	
		Case	%	Case	%
1	Suspect	485	100	485	100
2	Healing	113	90	112	99.12

Source: Primary Data from Research Results

The coverage of TB Program indicators at the Karawang Health Center UPTD in 2022, the Tuberculosis case detection rate reached 93%, which is one of the highest achievements in the region. In addition, the treatment success rate is also at a fairly high level, namely 92%, ranking second among other Health Centers. This

reflects that the quality of the TB program at the Karawang Health Center is quite good, with success indicators exceeding national targets. This success is supported by the consistent availability of drugs, efficient health services, and trained health workers.

2. Respondent Densification Results

Based on the respondent profile based on age, gender, education, occupation, treatment category and duration of treatment. Table 4.1 shows the profile of TB patient respondents who received OAT treatment at the Karawang Health Center UPTD based on age, showing that the most respondents were in the 17-25 year age group, which was 20 people or 35.7%. Table 4.2 shows the profile of TB patient respondents who received OAT treatment at the Karawang Health Center UPTD based on gender, showing that there were 33 male respondents or 58.9%, while there were 23 female respondents or 41.1%. Table 4.3 shows the profile of TB patient respondents who received OAT treatment at the Karawang Health Center UPTD based on education, showing that the most research respondents had a high school education, which was 40 people or 71.4%. In Table 4.4, it can be seen that the profile of TB patient respondents who received OAT treatment at the Karawang Health Center UPTD based on their occupation shows that the majority of research respondents were private employees, namely 18 people or 32.1%. In Table 4.5, it can be seen that the profile of TB patient respondents who received OAT treatment at the Karawang Health Center UPTD based on treatment category shows that category I is 56 people or 100%. In Table 4.6, it can be seen that the profile of TB patient respondents who received OAT treatment at the Karawang Health Center UPTD based on the duration of treatment shows that 6 months is the duration of treatment for 56 people or 100%.

3. Data Quality Test Results

Table 4.22 Results of the Validity Test of Variable Items

Variables	Item	r Count	r Table 5%	Note
TB Program Quality (X1)	X1.1	1,000	0.263	Valid
	X1.2	1,000		Valid
	X1.3	1,000		Valid
	X1.4	1,000		Valid
	X1.5	1,000		Valid
	X1.6	1,000		Valid
	X1.7	1,000		Valid
	X1.8	1,000		Valid
	X1.9	1,000		Valid
Knowledge (X2)	X2.1	0.978	0.263	Valid
	X2.2	0.978		Valid



Variables	Item	r Count	r Table 5%	Note
	X2.3	0.944		Valid
	X2.4	0.978		Valid
	X2.5	0.908		Valid
	X2.6	0.724		Valid
	X2.7	0.418		Valid
	X2.8	0.908		Valid
	X2.9	0.978		Valid
	X2.10	0.978		Valid
	X2.11	0.831		Valid
	X2.12	0.978		Valid
	X2.13	0.986		Valid
	X2.14	0.978		Valid
	X2.15	0.956		Valid
	X2.16	0.455		Valid
	X2.17	0.325		Valid
	X2.18	0.455		Valid
	X2.19	0.473		Valid
	X2.20	0.978		Valid
	Y1	0.582		Valid
	Y2	0.474		Valid
	Y3	0.730		Valid
	Y4	0.625		Valid
	Y5	0.368		Valid
	Y6	0.283		Valid
	Y7	0.577		Valid
	Y8	0.776		Valid
	Y9	0.349		Valid
Attitude (Y)	Y10	0.804	0.263	Valid
	Y11	0.776		Valid
	Y12	0.804		Valid
	Y13	0.612		Valid
	Y14	0.777		Valid
	Y15	0.713		Valid
	Y16	0.713		Valid
	Y17	0.722		Valid
	Y18	0.713		Valid
	Y19	0.713		Valid
OAT Compliance Behavior	Y20	0.713		Valid
	Z1	0.565		Valid
	Z2	0.590	0.263	Valid
Z3	0.646	Valid		

Variables	Item	r Count	r Table 5%	Note
(Z)	Z4	0.627	0.263	Valid
	Z5	0.905		Valid
	Z6	0.679		Valid
	Z7	0.905		Valid
	Z8	0.679		Valid

From table 4.22 shows that all question items have a corrected item-total correlation (r -count) $>$ r -table which is 0.263. This means that all items are declared valid. This is indicated by the r -count value on each item is greater than r -table (0.263), meaning that all variable question items have a good level of validity which means they can measure the variables studied.

4. Statistical Test Results

Table 4.26 Results of Discriminant Analysis Based on Fornell-Larcker

Variables	TB Program Quality (X1)	Knowledge About Tuberculosis (X2)	Medication Compliance Behavior (Z)	Attitude (Y)
TB Program Quality (X1)	0.708			
Knowledge About Tuberculosis (X2)	0.136	0.714		
Medication Compliance Behavior (Z)	0.127	-0.202	0.802	
Attitude (Y)	0.350	0.141	-0.136	0.780

Discriminant analysis based on the Fornell-Larcker Criterion as in the table above shows that there is no longer a Fornell-Larcker Criterion value or the square root of AVE for each construct that is greater than its correlation value so that the constructs in this research model can still be said to have good discriminant validity.

5. Hypothesis Test Results

Table 4.32 Results of Total Effect Analysis

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
TB Program Quality (X1) -> Medication Compliance Behavior (Z)	0.157	0.133	0.198	0.792	0.429
TB Program Quality	0.337	0.380	0.162	2,085	0.038

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
(X1) -> Attitude (Y) Knowledge About Tuberculosis (X2) -> Medication Compliance Behavior (Z)	-0.223	-0.226	0.221	1,012	0.312
Knowledge About Tuberculosis (X2) -> Attitude (Y)	0.095	0.103	0.224	0.422	0.673
Attitude (Y) -> Medication Compliance Behavior (Z)	-0.184	-0.154	0.226	0.817	0.414

In the table above, we can see the magnitude of the total influence which is the sum of the direct effect and indirect effect. Based on the p value of the total effect in the table above, the total influence is not significant or accept H0 because the p value is less than 0.05 marked with a red block. And the total influence is significant or accept H1 because the p value is less than 0.05 marked with a green block.

The table above shows that:

1. All p values of indicators against their latent variables are <0.05 so that all indicators are valid and reliable against their constructs.
2. The direct effect of X1 on Y is significant and the other direct effects are not significant.
3. All indirect effects are insignificant.
4. The total effect of X1 on Y is significant, while the others are not significant.

Discussion

a. Descriptive Analysis

1) Descriptive Discussion on TB Program Quality Dimensions

The results of the recapitulation of respondents' responses regarding the dimensions of the quality of the TB program through 9 question items showed that overall it was considered high. This shows that for the Tangible dimension the percentage score was 83.6%. The Empathy dimension showed a percentage score of 86.4%. The Responsiveness dimension showed a percentage score of 85.0%, the Reliability dimension showed a percentage score of 81.8% and the Assurance dimension showed a percentage score of 81.3%. Based on the results of descriptive analysis on the TB program quality variable, TB patients assessed the quality of the TB program as good.



2) **Descriptive Discussion on TB Patient Knowledge Dimensions**

The results of the recapitulation of respondents' responses regarding the dimensions of TB patient knowledge through 20 question items showed that overall it was considered high. This shows that for the TB understanding dimension the percentage score was 84.6%. The TB signs and symptoms dimension showed a percentage score of 84.5%. The TB causes dimension showed a percentage score of 83.6%. The TB Management dimension showed a percentage score of 83.1%. Based on the results of descriptive analysis on the TB patient knowledge variable, it showed that it was good.

3) **Descriptive Discussion on TB Patient Attitude Dimensions**

The results of the recapitulation of respondents' responses regarding the dimensions of TB patient attitudes through 20 question items showed that overall it was considered good. This shows that for the receiving dimension, the percentage score was 85.9%. The responding dimension showed a percentage score of 85.1%. The valuing dimension showed a percentage score of 83.3% and the responsible dimension showed a percentage score of 82.6%. Based on the results of the descriptive analysis on the dimensions of TB patient attitudes, it showed that it was good.

4) **Descriptive Discussion on the Behavioral Dimensions of OAT Compliance**

The results of the recapitulation of respondents' responses regarding the dimensions of TB patients' OAT drinking compliance behavior through 8 question items showed that overall it was good. The results of the analysis showed a percentage score of 79.0%. Based on the results of the descriptive analysis on the dimensions of TB patients' OAT drinking compliance behavior, it was good.

b. Verification Analysis

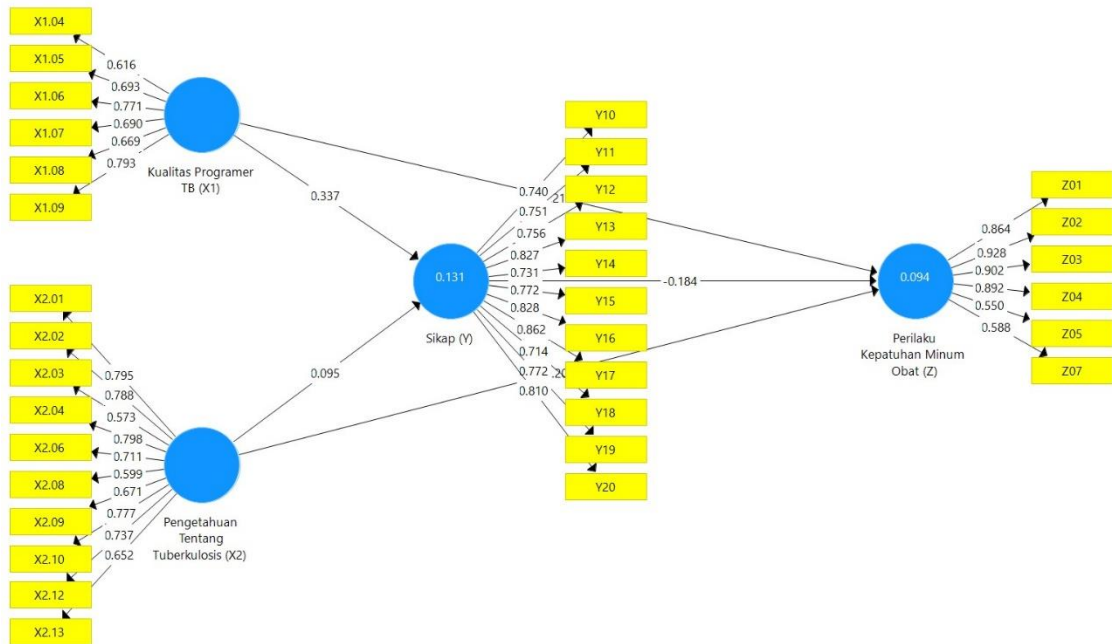


Figure 4.3 Results of Stage II Processing

The results of the SEM analysis in Figure 4.3, testing the hypothesis of the relationship between the variables of TB program quality, knowledge, attitude, and compliance show that

- 1) The influence of TB program quality on TB patient attitudes

The results of the hypothesis test show that based on calculations using bootstrap or resampling where the results of the TB program quality estimation coefficient test (X1) on TB patient attitudes (Y) are 0.380 with a t count of 2,085, then the p-value result is $0.038 < 0.05$ so that H1 is accepted or which means the direct effect of TB program quality (X1) on TB patient attitudes (Y) is statistically significant. This is in line with the research of Annisa Asri Imana (2021) which states that there is a significant effect of service quality on user satisfaction that can be accepted, or in other words there is a significant effect of service quality on user satisfaction.
- 2) The influence of knowledge on the attitudes of TB patients

The results of the hypothesis test show that based on calculations using bootstrap or resampling where the coefficient test of knowledge estimation (X2) on the attitude of TB patients (Y) is 0.103 with a t count of 0.422, then the p-value result is $0.673 > 0.05$ so that H0 is accepted or which means the direct effect of knowledge (X2) on the attitude of TB patients (Y) is not significant or not statistically significant. This is in line with the research of Nasirudin, MR (2017) which states that there is no significant relationship between knowledge and attitudes in efforts to prevent transmission of Pulmonary TB.

- 3) The influence of TB patient attitudes on OAT compliance behavior
The results of the hypothesis test show that based on calculations using bootstrap or resampling where the p-value of the attitude of TB patients (Y) towards the behavior of adherence to taking OAT (Z) is 0.414 with a sig value greater than the probability value of 0.05. Or $0.414 > 0.05$, so that H_0 is accepted which means that there is an insignificant effect of Y on Z. This is in line with the research of Wayan IB (2020) which states that there is no relationship between the attitudes of TB patients and TB prevention behavior. Patients who are compliant with treatment are patients who complete treatment regularly and completely without interruption for at least six or nine months. Patients are said to have not come for more than three days to two months from the date of the agreement and are said to have dropped out if they have not come for treatment for more than two consecutive months after a visit by a health worker (Ministry of Health of the Republic of Indonesia, 2010).
- 4) The influence of TB program quality on adherence behavior in taking OAT through TB patient attitudes
Based on the p-value of the indirect effect, the indirect effect of the quality of the TB program (X1) on the behavior of adherence to taking OAT (Z) through the attitude of TB patients (Y) is 0.505, so the p-value result is $0.505 > 0.05$ so that H_0 is accepted or which means there is no indirect effect of the quality of the TB program (X1) on the behavior of adherence to taking OAT (Z) through the attitude of TB patients (Y) statistically. This is in line with the research of Dizky Ramadani Putri Papeo, et al (2021) that 6 months of TB treatment does not have a significant effect on the quality of life of TB patients, this can be explained by the side effects of drugs such as INH and Rifampicin which cause liver dysfunction and cause low quality of life. Another reason for the poor quality of life after 6 months of treatment may be related to the psychological impact of the disease, where discrimination from society and family can cause depression.
- 5) The influence of TB patient knowledge on OAT compliance behavior through TB patient attitudes
Based on the p-value of the indirect effect, the indirect effect of TB patient knowledge (X2) on the behavior of adherence to taking OAT (Z) through the attitude of TB patients (Y) is 0.783, so the p-value result is $0.783 > 0.05$ so that H_0 is accepted or which means there is no indirect effect of TB patient knowledge (X2) on the behavior of adherence to taking OAT (Z) through the attitude of TB patients (Y) statistically. This is in line with the research of Nida Rizqi Amalia, et al. (2021) which states that knowledge has no relationship with behavior. Because not everyone who is knowledgeable behaves well, although most respondents have bad behavior. Most respondents realize that conditions can be influenced by social media, radio, television, newspapers, magazines and counseling which have a significant impact on shaping public opinion and beliefs.



CONCLUSION

Based on the results of this study, the following conclusions can be drawn:

1. There is a picture that the variables of TB program quality, TB patient knowledge, TB patient attitudes, and TB medication adherence behavior in the working area of the Karawang Health Center UPTD, Sukabumi Regency are included in the good category.
2. There is a significant influence of the quality of the TB program on the attitude of TB patients regarding adherence to taking TB medication in the working area of the Karawang Health Center UPTD, Sukabumi Regency.
3. There is an insignificant influence of TB patient knowledge on TB patient attitudes towards TB medication adherence in the working area of the Karawang Health Center UPTD, Sukabumi Regency.
4. There is an insignificant influence of the attitude of TB patients on the behavior of adherence to taking TB medication in the working area of the Karawang Health Center UPTD, Sukabumi Regency.
5. There is an influence that the quality of the TB program and the knowledge of TB patients through the attitudes of TB patients and their implications for the behavior of adherence to taking TB medication in the working area of the Karawang Health Center UPTD, Sukabumi Regency.

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