ANALYSIS OF FACTORS ASSOCIATED WITH THE OCCURRENCE OF TUBERCULOSIS TREATMENT DROPOUT IN THE WORK AREA OF THE SUBULUSSALAM CITY HEALTH OFFICE YEAR 2023

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ABSTRACT

Tuberculosis (TB) poses a grave threat to those afflicted, contributing significantly to the global mortality rate. Caused by the infectious bacterium Mycobacterium tuberculosis, TB primarily targets the lungs, with Indonesia ranking second in its prevalence worldwide. This study aims to scrutinize factors associated with TB treatment discontinuation within the Subulussalam City Health Service Work Area in 2023, employing a quantitative, cross-sectional approach. A sample of 203 TB patients under treatment within the area was subjected to logistic regression and multiple logistic regression analyses. Findings revealed a correlation between treatment discontinuation and factors such as inadequate knowledge (p = 0.00; OR = 27.81) and adverse drug reactions (p = 0.02; OR = 13.05). Recommendations include enhancing patient education on TB risks to bolster awareness and deter treatment abandonment, instituting recognition programs within health centers to incentivize treatment completion, and acknowledging the proactive role of healthcare personnel in facilitating patient adherence.

KEYWORDS	*Tuberculosis (TB), PMO Support, Health Worker Support, Drug Side Effects, TB Treatment Drop Out Events*

INTRODUCTION

TB is a contagious disease, ranking second in the world after Covid-19 and 13th in causing deaths (Global Tuberculosis Report, 2022). It can spread through respiratory transmission as Mycobacterium tuberculosis enters the lungs (80%) (Pozniak, 2021). WHO (2022) estimates suspected TB cases to be around 10,600,000, with the Southeast Asia region (43%), Africa (25%), and the Western

Pacific (18%) (Orazulike et al., 2021). Meanwhile, in Indonesia, it ranks second after India, China, the Philippines, Pakistan, Nigeria, Bangladesh, and Congo, with a total of 969,000 cases (Global Tuberculosis Report, 2022). Provinces in Indonesia experiencing a 44% increase in TB cases include West Java, East Java, and Central Java (Ministry of Health, 2019). In Aceh, the number of TB cases is 7170 people (P2P, 2021), and in Subulussalam (2023), there are 411 people. The TB treatment success rate in Indonesia is still less than 85%, while the Ministry of Health's target is 90%, indicating that it has not been achieved yet.

From the above data, it is evident that TB cases are still high both globally and nationally, despite numerous efforts to combat TB. One of the challenges is the discontinuation of medication before completion (Suhardini et al., 2020). In 2019, the number of treatment discontinuations was 22%, and in 2020, it was 24.6%. Countries contributing to this issue include Southeast Asia and Africa (World TB Report, 2020). The number of treatment discontinuations increases every year due to low awareness of the dangers of TB, the benefits of treatment, and the side effects of anti-TB drugs. Therefore, health workers need to provide education about TB, and there should be Directly Observed Treatment (DOT) to monitor patients taking medication daily (Herawati et al., 2020).

Based on the above information, the researcher is interested in taking the title "Analysis of Factors Associated with TB Treatment Dropouts in the Work Area of Subulussalam City Health Office in 2023". This research aims to analyze the factors associated with TB treatment dropouts in the work area of Subulussalam City Health Office in 2023.

RESEARCH METHOD

The type of research is quantitative and cross-sectional design, conducted in the Work Area of Subulussalam City Health Office in December 2023. The population consists of all TB patients recorded (January-December 2022), totaling 411 individuals, with a sample size of 203 (sample) using purposive sampling technique. Research data is collected from the Work Area of Subulussalam City Health Office. Data is obtained from questionnaire results given to TB patients and patients' medical cards. Analysis includes univariate, bivariate (chi-square), and multivariate (multiple logistic regression).

RESULT AND DISCUSSION

UNIVARIATE

Table 1. Distribution of Age among Pulmonary TB Patients in the Work Area of Subulussalam City Health Office in 2023

No	Characteristics	n	%
	Age		
1	<20 Year	42	20,7
2	20-56 Year	128	63,1
3	>56 Year	33	33

		203	100
Total		**203**	**100**

The majority of patients are aged 20-56 years, with 128 out of 203 individuals (63.1%).

Table 2. Distribution of Knowledge, PMO Support, Health Worker Support, Drug Side Effects, and TB Treatment Drop Out Events in the Work Area of Subulussalam City Health Office in 2023

No	Characteristics	n	%
	Knowledge		
1	Poor <56%	114	56,2
2	Good 56-100%	89	43,8
	Total	**203**	**100**
	PMO Support		
1	Inactive	28	13,8
2	Active	175	86,2
	Total	**203**	**100**
	Health Worker Support		
1	Not Supportive	18	8,9
2	Supportive	185	91,1
	Total	**203**	**100**
	Drug Side Effects		
1	Mild	6	3
2	Severe	197	97
	Total	**203**	**100**
	Drop Out Accident		
1	Patients who did not drop out	170	83,7
2	Patients who dropped out	33	16,3
	Total	**203**	**100**

The majority of pulmonary patients have poor knowledge (<56%) with 114 out of 203 individuals (56.2%), the highest PMO support is in the active category with 175 out of 203 individuals (86.2%), the highest health worker support is in the supportive category with 185 out of 203 individuals (91.1%), the most severe drug side effects are in the severe category with 197 out of 203 individuals (97%), and the highest occurrence of TB treatment drop out events is in the category of patients who did not drop out with 170 out of 203 individuals (83.7%).

BIVARIATE

Table 3. Relationship Between Knowledge and TB Treatment Drop Out Events in the Work Area of Subulussalam City Health Office in 2023

Knowledge	Drop Out Accident						
	Not DO		DO		Total		
	f	%	f	%	f	%	P

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Poor	82	71,9	32	28,1	114	100	0,00
Good	88	98,9	1	1,1	89	100	
RR = 24,9							

Out of 114 individuals with poor knowledge, the majority of patients who did not drop out were 82 individuals (71.9%), and the minority who dropped out were 32 individuals (28.1%). Out of 89 individuals with good knowledge, the majority did not drop out, with 88 individuals (98.9%), and the minority who dropped out were 1 individual (1.1%). P= 0.00 indicates a relationship between knowledge and TB treatment drop out events. The RR value of 24.9 suggests that TB patients with poor knowledge are estimated to be 24.9 times more likely to experience treatment drop out compared to patients with good knowledge.

Table 4. Relationship Between PMO Support and TB Treatment Drop Out Events in the Work Area of Subulussalam City Health Office in 2023

PMO Support	Drop Out Accident						
	Not DO		DO		Total		
	f	%	f	%	f	%	P
Inactive	27	96,3	1	3,6	28	100	0,04
Active	143	81,7	32	18,3	175	100	
RR = 1,18							

Out of 28 individuals with inactive PMO support, the majority of patients who did not drop out were 27 individuals (96.4%), and the minority who dropped out were 1 individual (3.6%). Out of 175 individuals with active PMO support, the majority who did not drop out were 143 individuals (81.7%), and the minority who dropped out were 32 individuals (18.3%). P= 0.04 indicates a relationship between PMO support and TB treatment drop out events. The RR value of 1.18 suggests that TB patients with inactive PMO support are estimated to be 1.18 times more likely to experience treatment drop out compared to patients with active PMO support.

Table 5. Relationship Between Health Worker Support and TB Treatment Drop Out Events in the Work Area of Subulussalam City Health Office in 2023

Health Worker Support	DO Accident						
	Not DO		DO		Total		
	f	%	f	%	f	%	P
Not supportive	13	72,2	5	27,8	18	100	0,16
Supportive	157	84,9	28	15,1	185	100	
RR = 0,85							

Out of 18 individuals who did not receive support from health workers, the majority who did not drop out were 13 individuals (72.2%), and the minority who dropped out were 5 individuals (27.8%). Out of 185 individuals who received support from health workers, the majority who did not drop out were 157 individuals (84.9%), and the minority who dropped out were 28 individuals (15.1%). P=0.16

indicates no relationship between health worker support and TB treatment drop out events. The RR value of 0.85 suggests that TB patients not supported by health workers are estimated to be 0.85 times more likely to experience treatment drop out compared to patients supported by health workers.

Table 6. Relationship Between Drug Side Effects and TB Treatment Drop Out Events in the Work Area of Subulussalam City Health Office in 2023

Side Effects drug	DO Accident						P
	Not DO		DO		Total		
	f	%	f	%	f	%	
Mild	1	16,7	5	83,3	6	100	
Severe	169	85,8	28	14,2	197	100	0,00
RR = 5,86							

Among the 6 individuals encountering mild side effects, the majority belonged to the group of treatment dropout (DO) patients, totaling 5 individuals (83.3%), while only 1 person (16.7%) belonged to the non-DO group. Conversely, among the 197 individuals experiencing severe side effects, the majority, comprising 169 patients (85.8%), did not discontinue treatment, with only 28 individuals (14.2%) belonging to the DO group. A p-value of 0.00 indicates a significant association between drug side effects and the occurrence of TB treatment dropout. The relative risk (RR) value of 5.86 suggests that TB patients encountering severe drug side effects are approximately 5.86 times more likely to discontinue treatment compared to those experiencing mild drug side effects.

Table 4.7. Multivariate Analysis Stage I Relationship Between Knowledge, PMO Support, and Drug Side Effects with TB Treatment Drop Out Events in the Work Area of Subulussalam City Health Office in 2023

No	Variable	B	S.E	Sig	PR	95 % CI	
						Lower	Upper
1	Knowledge	3,32	1,03	0,00	27,81	3,67	210,25
2	PMO Support	-1,59	1,06	0,13	0,20	0,022	1,63
3	Health Worker Support	0,55	0,65	0,39	1,74	0,48	6,22
4	Drug Side Effects	2,56	1,12	0,02	13,05	1,44	117,64
	constant	-4,36	1,00	0,00	0,01		

There are 2 variables related to TB treatment drop out events, namely knowledge (p= 0.00;OR = 27.81) and drug side effects (p = 0.02;OR = 13.05). The most dominant variable related to TB treatment drop out events is knowledge (p=0.00;OR)=27.81), indicating that TB patients with poor knowledge are 27.81 times more likely to experience treatment drop out than TB patients with good knowledge.

DISCUSSION
Relationship Between Knowledge and TB Treatment Drop Out Events

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Knowledge is the result of objects that can be seen, heard, smelled, and touched. However, knowledge is mostly acquired through sight and hearing because knowledge is information (Mulyani, 2020.). Knowledge can also be gained from personal experience and health education at healthcare facilities. Lack of knowledge about TB treatment will impact the occurrence of treatment drop out, but if knowledge is good, it will increase awareness to recover from the disease (Mulyani, 2020.).

Relationship Between PMO Support and TB Treatment Drop Out Events

Patients declared cured of TB are always supported by PMO who actively provide support and remind them to take their medication daily. In this study, PMO support mostly comes from family members because they are close to the patient. The support given to patients every day is a form of care that creates a sense of comfort for the patient, making them feel cared for, noticed, and motivated to recover (not stop medication) (Mulyani, 2020.).

Relationship Between Health Worker Support and TB Treatment Drop Out Events

In the management of TB control, the presence of skilled human resources with excellent performance, especially in TB management, is required (Ministry of Health RI, 2019). However, based on Syahridal's research (2020), patients who drop out of treatment are those who rarely receive home visits from healthcare workers. It can be inferred that whether or not healthcare workers conduct health education is not related to the occurrence of treatment drop out. Treatment success is seen from the activity of PMO and the knowledge of the patients (Syahridal et al., 2022).

Relationship Between Drug Side Effects and TB Treatment Drop Out Events

According to Lawrence Green (2021), patients will stop taking medication due to the side effects of anti-TB drugs. Severe side effects will lead to treatment discontinuation (Pratiwi, 2022). However, if TB staff first explain the side effects of anti-TB drugs, the dangers of TB, and prevention measures, the likelihood of treatment drop out cases can be minimized (Mulyani, 2020.).

CONCLUSION

This research revealed that the factor most closely linked to the occurrence of treatment dropout (DO) was knowledge ($p = 0.00$; $OR = 27.81$). It is advisable for respondents to enhance their understanding by seeking information regarding the risks associated with TB. Furthermore, health workers affiliated with the Subulussalam Health Office are encouraged to offer extensive counseling sessions regarding the potential side effects of tuberculosis medication. Additionally, there should be a reinforced emphasis on Patient Medication Observers (PMO) to ensure proper oversight of patients' medication adherence.

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