

# THE PREDICTORS OF MISSED VISITS FOR TREATMENT AMONG TUBERCULOSIS PATIENTS IN YOGYAKARTA, INDONESIA

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## BACKGROUND

Indonesia is one of 22 countries recognized as having a high burden of TB, with prevalence fourth on the number of prevalence cases<sup>1</sup>. Yogyakarta has quality of TB treatment has increased steadily over time<sup>2</sup>. However, the transmission of TB infection still continues although effective treatment has been available in Indonesia<sup>3</sup>. The duration of TB treatment means that patients are at risk of not completing treatment. Incomplete TB treatment may contribute to the spread of infection<sup>4</sup>. Missing of scheduled treatment visits is one of the reasons TB patients do not achieve successful treatment outcomes<sup>5</sup>. We aimed to determine factors that predicted missing schedule treatment visits among TB treatment in Yogyakarta, Indonesia.

## METHODS

### Study Design

This study was a retrospective cohort study design using TB registry data of patients attending at health care units in the province between 2008 and 2012. Patients included were those newly starting and re-treatment for TB treatment in the study period. The primary outcome was missed visits, defined as failing to attend the health care unit was initiated of TB treatment for at least two months consecutively during the treatment period.

### Data Analysis

The data were analyzed using Stata 12.1 program (StataCorp, College Station, USA). Univariate and multivariate analysis were used to investigate predictors of missed visits. Univariate relationships were tested using chi-square and multivariate analysis used logistic regression models.

## RESULT

### Baseline Characteristic

Out of all patients analyzed, 8940. The median age was 40 years (IQR:28-55) and 57.75% were males. The number of patients diagnosed with pulmonary tuberculosis was 87.90%, of whom 471 (4.91%) had a history of previous treatment or re-treatment, and those entering new treatment 9094 (94.76%). There were 657 (7%) patients have missed visits.

### Predictors for missed visits from treatment

In univariate analysis, there was an association between missed visits were male gender ( $p=0.006$ ) and patients who receiving treatment in hospital ( $p<0.001$ ).

## RESULT

Multivariate analysis, older age between 55+ years ( $p=0.013$ ), males gender ( $p=0.019$ ), re-treatment ( $p=0.004$ ), and treatment in hospital ( $p<0.001$ ) as risk factors with missed visits among tuberculosis patient (table 1).

Table 1. Univariate and multivariate models analysis

Factors	Crude Odds Ratio		Adjusted Odds Ratio	
	(95% CI)	P Value	(95% CI)	P Value
Age (years old)		0.071		0.013
15-24	1.00		1.00	
25-34	0.82 (0.63-1.07)		0.80 (0.63-1.01)	
35-44	0.90 (0.69-1.81)		1.02 (0.82-1.28)	
45-54	0.98 (0.75-1.29)		1.25 (1.00-1.55)	
55+	1.12 (0.89-1.42)			
Unknown	0.95 (0.12-7.26)		1.09 (0.14-8.69)	
Sex		0.006		0.019
Female	1.00		1.00	
Male	1.26 (1.07-1.48)		1.23 (1.04-1.45)	
Unknown	-----		-----	
Tuberculosis category		0.179		0.363
Pulmonary	1.00		1.00	
Extra-pulmonary	1.17 (0.93-1.48)		1.12 (0.88-1.42)	
Unknown	3.48 (0.98-12.38)		5.48 (1.34-22.51)	
Tuberculosis type		0.103		0.004
New-treatment	1.00		1.00	
Re-treatment	1.32 (0.95-1.83)		1.65 (1.18-2.32)	
Unknown	0.92 (0.22-3.86)		1.24 (0.29-5.32)	
Health care unit		0.000		0.000
Lung clinic	1.00		1.00	
Hospital	1.10 (0.90-1.35)		1.08 (0.88-1.33)	
Primary health care center	0.42 (0.35-0.52)		0.40 (0.32-0.49)	

## CONCLUSION

Patients with older age, male, re-treatment, and patients who received treatment in hospital are more likely have missed visits on anti-TB treatment. Missed visits should receive more attention from health care workers in order to increase successful treatment rates and prevent the disease.

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