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Obstacles Facing Tuberculosis Treatment in Children from a Developing Country: a Hospital-based Study

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Abstract **Background:** Despite availability of antituberculosis treatment and application of directly observed treatment short-course (DOTS) strategy, loss to follow-up in tuberculosis (TB) treatment is still a problem in controlling TB, especially in TB high-burden countries. **Methods:** This retrospective survey study to determine the magnitude and factors influencing loss to follow-up TB treatment was conducted on 1,350 documented clinically diagnosed TB cases registered in pediatric DOTS registry from January 2009 to June 2012. We interviewed the parents of 102 identified loss to follow-up TB treatment children. **Results:** Of the 102 (8.2%) children identified as loss to follow-up TB treatment, five children had completed TB treatment at the nearest public health facility, concluding loss to follow-up rate 7.8%. Survey obtained showed that the most common problems encountered are financial (22.7%), time clash of working parents (16.5%), and far dwelling (16.5%). Far dwelling (p = 0.027) and drug formulations (p = 0.001) are the significant factors influencing loss to follow patients. **Conclusions:** Our study found that children with far dwelling to the health facility in order to take TB treatment and different drug formula are the significant factors influencing loss to follow-up patients.

Keywords: *loss to follow-up TB treatment, children, DOTS strategy*

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1. Introduction

Tuberculosis (TB) remains a major cause of considerable morbidity and mortality among children in endemic countries [1]. In certain developing countries, the national control programme is still neglecting TB in children. However, there is increasing awareness of the fact that children carry a significant proportion of the global TB disease burden [2]. Childhood TB constitutes 20-40% of TB cases in high-burden countries [3].

Implementation of directly observed treatment short-course (DOTS) strategy for TB treatment resulted in improved global outcome [1,4,5,6,7]. However, effectiveness has been limited in areas where five components of DOTS are not fully implemented. This problems were reported in several developing countries [8,9,10]. The implementation is more difficult since poverty are prevalent in high burden developing countries [1], moreover DOTS implementation for TB in infants and children has been challenging, especially in supervising TB drugs.

In Indonesia, ranked as the fourth country with the largest number of TB cases in 2011 [11], TB is closely associated with poverty and malnutrition. Other reasons for low treatment success rate in developing countries are poor compliance and non-completion of treatment [3,12]. Loss to follow-up patients is one of the most important reasons for non-completion treatment [12,13]. Completion of TB treatment is essential as it reduces the risk of recurrent TB, prevent resistance, and reduces the risk of TB infection in communities [14].

World Health Organization (WHO) has revised the definition for reporting tuberculosis in 2013. Lost to follow-up patients, previously known as defaulted, was defined as a TB patient who did not start treatment or whose treatment was interrupted for 2 consecutive months or more [15].

This study was done in order to comprehend the obstacles toward an adequate completion of treatment by performing an active default tracing. Possible factors were collected and analyzed to find the determining factors of loss to follow-up TB treatment in Dr. Hasan Sadikin General Hospital DOTS clinic.

2. Methods

All pediatric patients diagnosed for either pulmonary or extra-pulmonary TB listed in our DOTS registry from January 2009 until June 2012 were included in this retrospective survey study. Our registry consisted of sex, age, type of TB, distance of the patient's dwelling to hospital (divided into Bandung city, Bandung district and outside Bandung district), payment methods, body weight, nutritional status, evaluation of treatment in a scheduled time and antituberculosis formulation. Payment methods