

## Soil-transmitted helminthiasis among indigenous communities in Malaysia: Is this the endless malady with no solution?

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**Abstract.** Soil-transmitted helminths (STHs) are the most common intestinal parasitic infections of medical importance in human. The infections are widely distributed throughout the tropical and subtropical countries including Malaysia particularly among disadvantaged and underprivileged communities. This study was conducted to determine the prevalence and pattern of STH infections among *Temuan* indigenous subgroup. A cross sectional study was conducted among five villages in Peninsular Malaysia. Faecal samples and socioeconomic data were collected from each consented participant. Faecal samples were processed using formalin-ether sedimentation and examined under microscope. Data analysis was carried out using SPSS software programme for Windows version 24. A total of 411 participants voluntarily participated in this study. The overall prevalence of STH infections was 72.7% (95% CI = 68.2 – 77%). The most common STH species recorded was *Trichuris trichiura* (58.4%, 95% CI = 53.5 – 63.2%) followed by *Ascaris lumbricoides* (45.5%, 95% CI = 40.6 – 50.5%) and hookworm (23.1%, 95% CI = 19.1 – 27.5%). Multivariate analysis demonstrated that using untreated water was a significant predictor of STH infections in these communities. Our findings demonstrated that STH infections are still prevalent and co-exist with the low SES among this subgroup. Poverty and poor sanitation are the leading factors contributing to this malady. Hence, the reassessments of the existing control measures are needed.

### INTRODUCTION

Soil-transmitted helminths (STHs) are a group of parasitic nematode worms causing human infection worldwide. The infections are common in socioeconomically deprived communities where poor environmental sanitation, overcrowding and lack of access to safe water are prevalent (Mehraj *et al.*, 2008). The main species that infect humans are roundworm (*Ascaris lumbricoides*), hookworms (*Ancylostoma duodenale* and *Necator americanus*) and whipworm (*Trichuris trichiura*). Globally, an estimated 438.9 million were infected with hookworm, 819 million with *A. lumbricoides* and 464.6 million with *T. trichiura* (Pullan *et al.*, 2014).

The STHs are also one of the world's most important causes of physical and intellectual growth retardation among school-aged children however, they remain largely neglected by the medical and international community (Bethony *et al.*, 2006).

Chronicity, recurrence and multiple infections with several species are common (Steinmann *et al.*, 2008). According to Pullan *et al.* (2014), Southeast Asia (SEA) has the highest reported prevalence of STH infections. Overall, approximately one-third of the world's cases of STHs infection occur in the 11 SEA countries (Jex *et al.*, 2011). In Malaysia, STHs have been recognized as a major public health problem since 1970s (Bisseru & Aziz, 1970). To overcome this