

Mohd Zain, S.N.<sup>1</sup>, Yvonne, A. L.<sup>2</sup> and Sahimin, N.<sup>1</sup>

<sup>1</sup> Institute of Biological Sciences, Faculty of Science, University of Malaya, Lembah Pantai, 50603, Kuala Lumpur, Malaysia.

<sup>2</sup> Department of Parasitology, Faculty of Medicine, University of Malaya, Lembah Pantai, 50603, Kuala Lumpur, Malaysia.

Email: [nsheena@um.edu.my](mailto:nsheena@um.edu.my)

## Introduction

Since 1970s, Malaysia experienced an economic bloom that lead to high demand for workforce imported from neighboring countries from the South East Asia nations (Indonesia, Cambodia, Vietnam, the Philippines and Myanmar) and South Asian countries (Nepal, India and Bangladesh).

Prior to entering the country for employment, workers are screened for communicable diseases such as HIV, STD and TB. However, screening for parasitic infections are often neglected and this may pose a high risk of transmission due to poor hygiene and sanitation.

## Methodology

Low skilled workers from 5 sectors were recruited (manufacture, construction, plantation, domestic and services).

Faecal samples collected were fixed in formalin ether followed by iodine staining and examined microscopically for helminth eggs (x10) and protozoan cysts (x40).

## Results

⇒ A total of 388 workers were recruited originated from Indonesia (n=167, 43.3%), followed by Nepal (n=81, 20.9%), Bangladesh (n=70, 18%), India (n=47, 12.1%) and Myanmar (n=23, 5.9.2%).

⇒ A high proportion of the workers (n=244/388, 62.9%) were positive for at least one parasite species.

⇒ A total of four nematode species (*Ascaris lumbricoides*, *Trichuris trichiura*, *Enterobius vermicularis* and hookworms), one cestode (*Hymenolepis nana*) and three protozoan species (*Entamoeba histolytica/dispar*, *Giardia* sp. and *Cryptosporidium* spp.) were identified.

⇒ High prevalence of infections with *A. lumbricoides* (43.3%) was recorded followed by hookworms (13.1%) and *E. histolytica/dispar* (11.6%).

➤ Infections were significantly influenced by socio-demographic (nationality), and environmental characteristics (length of working years in the country, employment sector and educational level).

➤ Up to 84.0% of migrant workers from Nepal and 83.0% from India were infected with intestinal parasites, with the ascarid nematode *A. lumbricoides* occurring in 72.8% of the Nepalese and 68.1% of the Indian population.

➤ PCR amplicons were successfully obtained *Necator americanus* and *Ancylostoma duodenale* from hookworm samples. This is the first time *A. duodenale* was reported in Malaysia.

## Summary

⇒ High parasitic infections amongst migrant workers compared to a decade ago (36%, 173 stool samples)(Anuar Zaini *et al.*, 2002) was likely to be due to poor personal hygiene practice and lack of health awareness.

⇒ Results highlight refinement of the current health policies to include implementation of mass drug administration for newly arrive workers as recommended by WHO (2001) in addition to health awareness programs.

## References

1. Anuar Zaini, M.Z., KhairulAnuar, A. & Nooriah M.S. (2002). Health Problems of Foreign Workers. Eds. *Journal of the University of Malaya Medical Centre* 7(1).

