

Microscopic Identification of Gastrointestinal Parasitic Infections; Incidence among Selected Communities in Western Province and Central Province

SP Diyunugala^{1#}, US Kulasekara¹, PH Premaratne¹, W Abeywickrema¹,
KO Bandaranayaka², GDI Rodrigo¹, and P Jayasekera¹

¹Faculty of Medicine, Sir John Kotelawala Defence University, Rathmalana, Sri Lanka

²Faculty of Natural Sciences, Open University, Nawala, Sri Lanka

#salz.diyu@gmail.com

Abstract

Gastrointestinal (GI) parasitic infections prevail to be a significant health problem in many countries. Communities with low socioeconomic status, poor environmental and personal hygiene, overcrowding, and insufficient access to clean water are at higher risk. This study was conducted to determine the incidence of GI parasites in selected communities in Western province and Central Province using standard microscopy based diagnostic techniques. A cross-sectional study was carried out on people (3 -70 years old) living in selected areas in the Western and Central Provinces from January 2022 to February 2023. Faecal samples were collected and analysed using direct iodine and saline wet smears, Sheathers' sucrose and salt floatation methods, and Trichrome stain. Altogether 193 (females 54.9%) samples were analysed. Of these 25.9%, 30.1% and 44.0% samples from Colombo, Kalutara and Kandy districts respectively. The majority (64.3%) of the samples were from volunteers <19 years of age. Among the participants, 67.9% were living in estate communities, 10.9% were from low-income and poor sanitary areas and 19.2% of samples were from in-ward patients of a tertiary care hospital in Western province. Only one (0.5%) sample was found positive for enterobiasis. All the other samples were negative for *Ascaris lumbricoides*, *Necator americanus*, *Trichuris trichiura*, *Enterobius vermicularis*, *Giardia intestinalis*, and *Entamoeba histolytica*. The study indicates that the incidence of GI parasitic Infections is extremely rare in high-risk communities in the Western and Central provinces of Sri Lanka. It is recommended to further analyse the same samples using more sensitive molecular based diagnostic methods.

Keywords: *Gastro-Intestinal parasitic Infections, Microscopy based diagnostic techniques*