

GASTROINTESTINAL PARASITES OF DOGS AND THEIR ZONOTIC POTENTIAL IN A SOCIO-ECONOMICALLY CHALLENGED TEA ESTATE COMMUNITY IN THE CENTRAL HILLS OF SRI LANKA

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Gastrointestinal (GI) parasites in dogs are of concern due to their zoonotic potential and resulting public health concerns. The abundance of stray dogs and environmental contamination by canine faeces deposited in public areas can be an important health issue in countries such as Sri Lanka. Our objectives were to identify GI parasites in dogs and their zoonotic potential in a socio-economically challenged community in a tea estate in the central hills of Sri Lanka. Faecal samples from 50 domestic and stray dogs (44 domestic) and 50 humans (25 males) were collected soon after defecation from October 2011 to March 2012. Parasites were morphologically identified using direct iodine smears and modified sucrose flotation, and molecular identification was performed for some species. Soil samples (N = 36) were collected from the neighbourhood to determine the presence of soil-inhabiting stages. The majority (86%) of the dogs were infected with one or more parasites, with mixed infections being more common (68%). A total of 13 GI parasites were found, of which 10 were known zoonotic species. Of the positive samples the majority were *Toxocara canis* (28%), *Strongyloides stercoralis* (26%), *Entamoeba coli* (24%), *Trichuris vulpis* (20%), *Giardia duodenalis* (16%) and *Spirocerca lupi* (16%). In addition, we found unidentified trematode (2%) and cestode (2%) infections. *Ancylostoma* sp. (16%), and *Entamoeba histolytica* (6%) were also among positive samples. Humans were infected with six GI parasites, four of which were zoonotic; namely, *Entamoeba coli* (32%), *G. duodenalis* (26%), *S. stercoralis* (2%) and *Blastocystis* sp. (2%). In addition, we found infections of *Ascaris lumbricoides* (14%) with high worm burdens in children and *Balantidium* sp. (2%). A smaller percentage of males (56%) were infected compared with females (68%), and more adults (91%) were infected than children. There was no significant difference in the prevalence of GI parasites between males and females (χ^2 test; P = 0.4) or between children (n = 36) and adults (χ^2 test; P = 0.1). Zoonotic eggs, larvae or cysts were found in 44% of the soil samples (*S. stercoralis* eggs/L3 – 11%; *E. coli* cysts – 22%; *T. canis* eggs – 11%). Human samples had more protozoan infections whereas dogs harboured more helminths. Neither humans nor dogs were de-wormed regularly using proper de-worming schedules. Veterinary care for domestic animals and healthcare facilities for the community were inadequate and inaccessible. The high prevalence of zoonotic parasites in dogs and the environment poses a serious threat to this community. This study highlights the importance of proper, regular de-worming of both dogs and humans to reduce the prevalence of GI parasites.