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Development and Piloting of Ascariasis Surveillance System of Children in Sri Lanka

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Objective

Designing, developing and Piloting an Ascariasis surveillance system of children to determine factors associated with their variations in Sri Lanka.

Introduction

Ascariasis is one of the most common intestinal nematode infections caused by *Ascaris lumbricoides*, especially in the tropics and sub-tropics where warm, wet climates favor year-round transmission of infection(1). Humans become infected by ingesting infective ascaris eggs in contaminated food, water or from hands that have become faecally contaminated and can cause reduced physical fitness, growth retardation, and respiratory and gastrointestinal problems(2). The highest morbidity is found in children, especially in those with a high worm burden(3). To identify high risk areas for intervention, it is necessary to understand the effects of climatic, environmental and socio-demographic conditions on *A. lumbricoides* infection(4). In Sri Lanka, although ascariasis was the commonest intestinal parasitic infection among children, information about associated factors and current health impact is insufficient. Therefore, this study was designed to develop and pilot an Ascariasis surveillance system among children in Sri Lanka.

Methods

Cross-sectional survey data of 547 study participants in the Central province in Sri Lanka were used to analyze associations between Socio - environmental data and *A. lumbricoides* infection, from June 2012 to April 2013. Single-stool samples were collected from each and every child to investigate *A. lumbricoides* infection and anthropometric measurements were taken to calculate height- for-age (HAZ), weight-for-age (WAZ) and weight-for-height (WHZ) to determine stunting, underweight and thinness respectively.

Results

547 children with a mean age 6.0 (SD±3.2) years was examined. Multivariate logistic regression module identified Shared toilet facilities, live in attached houses, de-worming before 6 - 12 months period and before 12 months as the most important independent risk variables of all independent variables considered ascariasis. Drinking treated water, eating unclean fruit, hand washing with soap after defecation and before a meal was not statistically significant in the analysis. There was no statistically significant association between nutritional status and ascariasis.

Conclusions

The identified factors will be used in the establishment of the Ascariasis surveillance system among children in Sri Lanka.

Risk factors associated with ascariasis in Sri Lanka in 2012-2013

Variables	Catagories	OR	95% CI	P
Types of dwelling	Detached houses(a)	1	1	1
	Attached houses	2.37	1.24- 4.50	0.008
Toilet facility	Separate(a)	1	1	1
	Shared	1.82	1.15 - 2.84	0.010
De-worming period	< 3month(a)	1	1	1
	3 - 6 months	2.49	0.86 - 7.20	0.090
	6 - 12 months	4.89	1.98 - 12.07	0.001
	> 12 months	10.95	4.87 - 24.62	<0.001

(a) Reference category p<0.05 significant OR = odds ratio CI = confidence interval P = p value

Keywords

Ascariasis Surveillance; children; Sri Lanka

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