

**Prevalence of intestinal parasites in the healthy
adult and adolescent population of a rural
community**

SM Ziauddin Hyder
Senior Research Nutritionist

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BRAC
Research and Evaluation Division
75 Mohakhali, Dhaka 1212
Bangladesh

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ABSTRACT

To study the prevalence of intestinal worm infestations among the healthy adult rural population, 333 stool samples were collected from 8 villages under Fulbaria thana of Mymensingh district by systematic random sampling technique. Stool samples were examined under microscope for the presence of intestinal parasites. The gross prevalence of parasites was 33.3% of which 35.8% were in females and 27.9% in males. Significant difference of intestinal parasite infestation was observed in different age group and the highest prevalence (40%) was found among the age group of 18-35 years. Significant association was found between hand washing with soap and prevalence of intestinal parasite infestation ($p < 0.05$).

INTRODUCTION

Intestinal parasitic infestations are still a major problem in tropical countries. World Health Organisation (WHO) estimates that one quarter of the world population is subject to chronic intestinal parasitic infestations which have adverse effects on growth, nutrition and cognitive functions in as many as 214 million people most of which live in the developing countries like Bangladesh (1). Bangladesh is one of the poor countries in the world with 85% of its population living in rural areas with only 1.25% of the households have sanitary latrines. Most of the rural population are illiterate. Therefore, intestinal parasites are maintaining a vicious cycle in the community leading to many clinical problems including gastrointestinal tract manifestations, anaemia, etc. Many studies have been undertaken to assess the prevalence of intestinal parasites among children, but only a few studies among the adult and adolescent population (2-6).

OBJECTIVE

This study was undertaken to identify the magnitude of the problem of parasites among healthy adults and adolescents in a rural population of Mymensingh district, Bangladesh.

MATERIALS AND METHODS

Fulbaria thana under Mymensingh district was selected for this study. Eleven villages around the Thana Health Complex (THC) were randomly selected. Thirty samples were collected from each of 10 villages and 33 samples were collected from one village. Houses were selected using random table. Thus, 333 stool samples were collected and sent within 6 hours of collection to the Department of Microbiology, Mymensingh Medical College for microscopic examination. Both saline and iodine preparation were done.

RESULTS

Age and sex distribution of the respondents is given Table 1. Of the study population 31% were male and 69% were female. Gross parasitic prevalence was found to be 33.3% of which 27.9% among male and 35.8% among female (table 2). The adults of the group 18-35 years had the highest prevalence of 40% (Table 3). Table 4 shows the prevalence of different parasites among the study population. Among the infested individuals, *Ascaris lumbricoides* has got the highest prevalence of 88.3% followed by *Ankylostoma duodenale* 4.5%, *Strongyloides stercoralis* being the lowest 0.9%. Only 30% of the people who washed their hands with soap and water after defecation suffered from parasitism as against 77% who did not use soap and water (Table 5).

DISCUSSION

The gross prevalence of intestinal parasites in this study was 33.33% which is much less compared to the findings of Bangladesh (2, 4-6), where the prevalence varied between 63-98%. These studies were carried out several years before when the people were not much conscious about personal hygiene and primary health care facilities. Moreover, most of those studies were carried out among the children and the population of the present study are adolescents and adults. However, in a study recently done by Huq, et al. in Dhaka metropolitan area, intestinal parasite prevalence among normal children was found 30% (6).

In this study, *Ascaris lumbricoides* was found to be most prevalent parasite (88.3%) which was consistent with many other studies carried out in Bangladesh and other countries. This may be due to environmental conditions which is favourable for completing the file cycle of this parasite.

The age group of 19-35 years had the highest prevalence of 40% which may be because of the fact that this group is more mobile and thus exposed to environmental hazards favouring parasitic infestations. Furthermore, health care seeking behaviour of the adult

healthy rural population may partly explain why the prevalence is higher in this group of population. There was no significant difference of prevalence among male and female.

The prevalence of intestinal parasites in those who washed their hands with soap and water was significantly less than those who did not. This can be well explained by the mode of transmission of *Ascaris lumbricoides*.

POLICY IMPLICATION

The prevalence of intestinal parasite is high in the rural population of Bangladesh which seems to affect females more than males. It should be made clear that regular deworming is necessary for all groups of population to reduce and control parasitic infestations in a community. Poor hand washing practice has found to be associated with increased prevalence of intestinal parasites. Efforts should be made to improve the condition through enhancing the existing health education components of the development programmes. Adequate focus should be given to improve sanitation and excreta disposal system to control the spread of intestinal parasites.

LIST OF TABLES

Table 1. Age and Sex distribution of the respondents

Age in years	Male	Female	Total
10-15	27 (35.5)	49 (64.5)	76 (22.8)
16-19	23 (59.0)	16 (41.0)	39 (11.7)
19-35	31 (19.4)	129 (80.6)	160 (48.0)
35+	23 (39.7)	35 (60.3)	58 (17.4)
Total	104 (31.2)	229 (68.8)	333 (100)

Figures in the parenthesis indicate percentage.

Table 2. Gross prevalence of intestinal parasites

Parasite	Population		
	Male	Female	Total
Present	29 (27.9)	82 (35.8)	111 (33.3)
Absent	75 (72.1)	147 (64.2)	212 (63.7)
Total	104 (31.2)	129 (68.2)	333 (100)

Figures in the parenthesis indicate percentage.

Table 3. Prevalence of different intestinal parasites among the infested population.

Parasite	Number positive	Percentage
<i>Ascaris lumbricoides</i>	98	88.3
<i>Ankylostoma duodenale</i>	05	4.5
<i>Entamoeba histolytica</i>	03	2.7
<i>Giardia lamblia</i>	03	2.7
<i>Enterobius vermicularis</i>	01	0.9
<i>Strongyloides stercoralis</i>	01	0.9
Total	111	33.3

Table 4. Intestinal parasites in different age groups.

Age group	Parasites		Total
	Present	Absent	
12-15	31 (26.9)	84 (73.1)	115
16-35	64 (40.0)	96 (60.0)	160
36+	16 (27.6)	42 (72.4)	58
Total	111 (33.3)	222 (63.7)	333

Figure in the parenthesis indicate percentage.

$$X^2 = 6.16$$

$$P < 0.05$$

Table 5. Prevalence of intestinal parasites in relation to washing hands with soap after defecation

Intestinal worm	Hand washing		Total
	With soap	Without soap	
Present	33 (30)	77 (70)	110
Absent	95 (43.4)	124 (56.6)	219
Total	128	201	329

Figure in the parenthesis indicate percentage.

$$X^2 = 5.5$$

$$P < 0.05$$

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