

Status of intestinal parasitosis among hospital visiting patients in Deukhury Valley, Dang, Nepal

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ABSTRACT

Intestinal parasitosis is highly prevalent among the general population in Nepal. This study aimed to assess the status of intestinal parasitosis among patients attending Deukhury Community Hospital, Lamahi, Dang, situated in the mid western region of Nepal. A total of 210 stool samples examined by direct smear technique were reported. The overall prevalence of intestinal parasitic infection was found to be 21.4% (M=23.5% vs F=19.3%). Children <15 yrs age were infected more often as compared to > 60 yrs and 15-60 yrs aged people. Among adults, *Entamoeba histolytica* infection was found to be very high compared to high helminthic infection found among children. Finding showed that, the prevalence was significantly high (68.8%) among people having low socio-economic status compared to others (31.1%) ($p < 0.05$). Among various parasites detected, *E. histolytica* was the most common parasite (48.8%) followed by helminths, mainly *Ascaris lumbricoides* (31.1%), hookworm (13.3%), *Trichuris trichiura* (4.4%) and *Taenia species* (2.2%) respectively in the locality.

Keywords: Intestinal parasitosis, Patients, Dang.

INTRODUCTION

Intestinal parasitosis is a major public health problem, particularly in developing countries.¹ More than one-third of population in South East Asian region take medicine but still 13% of deaths in this region are related to parasitic infections only.² Prevalence in some areas of Nepal, India and other foreign countries has been reported to be very high (>90%),³⁻⁶ while comparatively less elsewhere in Nepal (20.7%).⁷

Developing countries spend about 5% of their annual budget in health.¹ So, intestinal parasitosis appears as one of the major economic burden to the developing countries like Nepal. Report of the study on soil

transmitted helminthiasis also emphasizes the need of study on intestinal parasitosis in various rural areas of Nepal where open defecation, lack of education and public awareness and lack of safe drinking water as well as poverty are prevalent.⁸ Authors believe that, such study being conducted first time in this region, might be beneficial for health care personnels and planning authority for controlling intestinal parasitic infections in Deukhury Valley.

MATERIALS AND METHODS

A retrospective study was done by analysing the findings of stool examination carried out at Deukhury Community Hospital Clinical Lab, Lamahi, Dang, Nepal from August 2010 to July 2011.

A total of 210 stool samples (M=102 and F=108) from patients attending hospital over one year duration were included in the study. All stool samples collected in the clean, wide mouthed, screw capped plastic containers

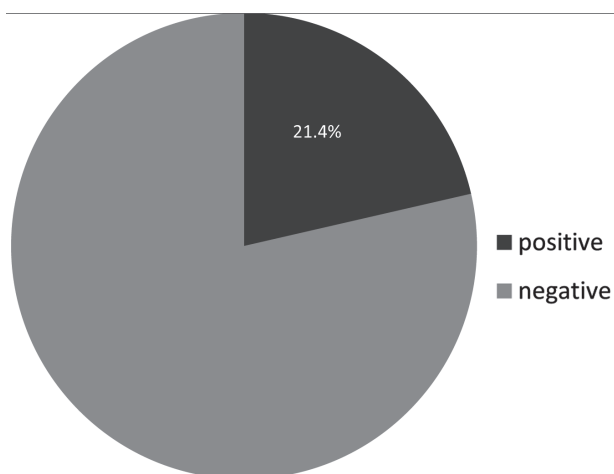


Fig.1 Prevalence of intestinal parasitosis among hospital visiting patients in Deukhury Valley

Table-1: Prevalence of intestinal parasitosis among different age groups.

Age	Total (n)	Positive (n)	%	p- value
5-15 yrs	53	17	32.0	<0.05
15- 60 yrs	148	26	16.8*	
60 -65 yrs	9	2	22.2*	
total	210	45	21.4	

* $p > 0.05$

Table-2: Prevalence of intestinal parasitosis based on socio-economic status.

Socio-economic status	Positive(n)	%	p- value
Low	31	68.8	<0.05
Medium	14	31.2	
Total	45	100	

were examined macroscopically and microscopically by experienced technician. The findings of stool examination revealed by direct smear technique (saline mount and iodine mount) were subjected to analysis.

RESULTS

Out of total 210 stool samples examined, 45 (21.4%) revealed presence of some kind of parasite (Fig.1). Comparatively parasitic infection was found to be almost equal among males and females (24/102 vs 21/108) (Fig.2). Agewise, intestinal parasitosis was found to be highest among children aged < 15 yrs (32.0%), followed by elderly people aged > 60 yrs (22.2%) and adults aged 15-60 yrs (16.8%) respectively (Table-1). Findings of the study showed that, mostly people belonging to very low socioeconomic status were infected (68.8%) followed by middle class people (31.1%) (Table-2). Among various parasites detected, the most common was *E.histolytica*, a protozoan parasite, (48.8%) followed by helminths, namely *Ascaris lumbricoides* (31.1%), hookworm (13.3%), *Trichuris trichiura* (4.4%) and *Taenia spp* (2.2%) respectively (Table-3).

DISCUSSION

The prevalence of intestinal parasitosis found in this study is much lower than that reported earlier by Rai *et al* and similar to few reports elsewhere in Nepal, but still it seems alarmingly high in comparison to international scenario.⁹⁻¹⁶ These differences might be due to place and time differences of the study, health

awareness, education and living standards of people and regular deworming programs being conducted mainly for children.

Genderwise, parasitic infection rate was found almost equal among males and females, though slightly higher in males (23.5% vs 19.3%) which is similar to findings of other studies on general population in Nepal and in other countries.^{7,10,12,17-19} So, our study shows agreement with suggestions of various studies regarding gender independence of parasitic infection.^{10,12,13,14,17,20-24}

Based on the age of patients included in the study, parasitic infection was found to be highest among children aged <15 yrs (32.1%) followed by > 60 yrs age (22.2%) and it was lowest among middle aged people of 15-60 yrs (16.8%). This finding is similar to the reports of studies done in various places of Nepal outside Kathmandu Valley.^{7,12} High parasitic infection found among children in the study might be due to their unhygienic behaviour and lack of sanitation.

Reports of various studies have shown that, the intestinal parasitic infection rate depends upon many factors including socio-economic status of people, being more common among people belonging to low socioeconomic status.^{6,18,25} We also found the similar report and which might be due to most of the people with low socio-economic status included in the study. This might be related to illiteracy, unhygienic practices, unawareness, open defecation and consumption of raw water, which is mostly contaminated in rural areas etc.

The high infection by *E. histolytica* found in the study indicates high water contamination with protozoa in the locality. Similarly, higher helminthic infection, particularly by *Ascaris*, in this study suggests high soil contamination with helminths in Deukhury Valley. This report seems similar to that of another study⁶ and this might be due to rapid, unplanned urbanization without proper water supply system in the city area and open defecation and other unhygienic conditions in rural area in the valley due to lack of health awareness among villagers. Hookworm infection detected among more than one tenth population in this study might be related to poor farmers residing in the locality who usually work bare foot in the farm, which might have been contaminated with infective stage of hook worm. Infection with *Taenia* found in one 5 yrs child indicates lack of health knowledge regarding parasitic infections among guardians,

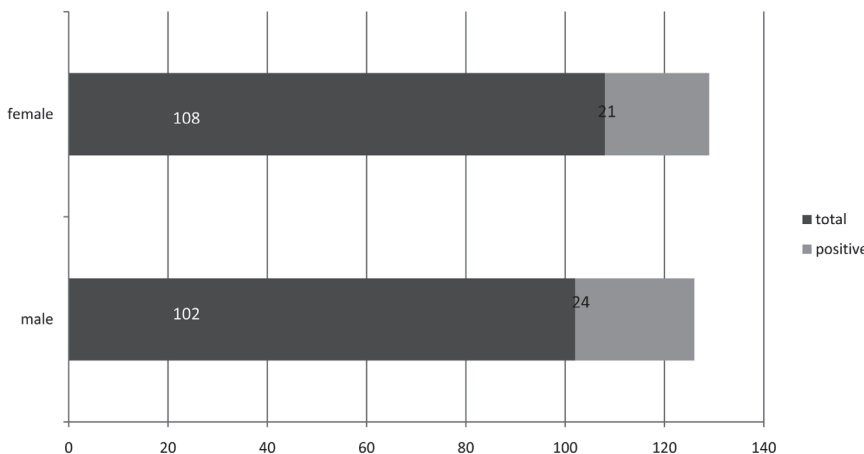


Fig.2. Prevalence of intestinal parasitosis among different genders.

Table-3: Type of parasites detected.

Parasite	positive	%
<i>E. histolytica</i>	22	48.8
<i>Ascaris lumbricoides</i>	14	31.1
Hookworm	6	13.3
<i>Trichuris trichiura</i>	2	4.4
<i>Taenia spp.</i>	1	2.2

especially among Tharu community, who mostly consume pork during festivals and this might be related to ingestion of improperly cooked pork by the child.

Although, the prevalence of intestinal parasitosis is declining among patients visiting hospitals,¹² the high prevalence of intestinal parasitosis in Deukhury Valley reflects the need of public health awareness programs regarding protection of water source from fecal contamination, personal and community sanitation, proper hygienic behaviors, use of latrine and continuous mass deworming program in the locality.

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