

DOI: <https://doi.org/10.5281/zenodo.7515809>

*Article*



**KMF Publishers**  
[www.kmf-publishers.com/jbpph/](http://www.kmf-publishers.com/jbpph/)

OPEN  ACCESS

## The Prevalence of Intestinal Helminths in Comprehensive High School, Ilese-Ijebu, Ogun State, Nigeria

Sowole Ayodele R.<sup>1</sup>, Daini Tolulope G.<sup>1</sup>, Aborisade Moninuola V.<sup>1</sup>, Helen Nwakaego. A.<sup>2</sup>, Solaja Olatunde O.<sup>2</sup>, Abiodun Sunday A.<sup>2</sup>, and Solesi Obafemi A.<sup>3\*</sup>

<sup>1</sup>Department of Medical laboratory Technician

<sup>2</sup>Department of Environmental Health and Diseases Control

<sup>3</sup>Department of Pharmacy Technician Programme

<sup>1,2,3</sup> Ogun State College of Health Technology, Ilese- Ijebu, Nigeria

### ABSTRACT

Intestinal parasitic infections are a public health concern in tropical countries, such as Nigeria. The infection is associated with complications such as retarded growth, low cognition, gastrointestinal obstruction, etc. A total of 100 samples were collected from Students attending Comprehensive High School, Ilese-Ijebu in Ogun State, Nigeria, between January to February 2022 for Intestinal Helminthes using the direct wet preparation method. The results of the study showed that out of 74 (74%) female -students' stool examined 22 (29%) students had intestinal helminths and, the 26 male (s) students accounted for 9 (34%), making a total of 31% students were being infected. The parasites' distribution was thus as follows: *Ascaris lumbricoides* was 48%; Hookworm 17%; *Strongyloides stercoralis* 13%; *Taenia* species 22% respectively. The result of this shows that parasitic infection exists among secondary school students in Nigeria. Therefore personal hygiene, regular deworming, eating washed fresh fruits and regular health education are recommended.

### ARTICLE HISTORY

Received 8 October 2022

Revised 18 December 2022

Accepted 26 December 2022

### KEYWORDS

*Ascaris lumbricoides*,  
helminths, hygiene, Parasitic,  
*Strongyloides stercoralis*

**CONTACT** Solesi Obafemi A Ogun, State College of Health Technology, Ilese- Ijebu, Nigeria Email: [solesi.obafemi@gmail.com](mailto:solesi.obafemi@gmail.com)

## INTRODUCTION

Infestation by intestinal helminths is a major public health problem which causes chronic inflammatory disorders such as chronic anaemia, growth stunting, protein-calorie malnutrition, fatigue, poor cognitive performance, reduced long-term survival, diminished physical fitness and school attendance in school-age children<sup>1, 2</sup>. The most common intestinal parasites within the group of helminths are STHs, including *Ascaris lumbricoides* (roundworm), *Necator americanus* and *Ancylostoma duodenale* (hookworm), and *Trichuris trichiura* (whipworm), have been considered to infect over a thousandth of million people, and much more are at risk of infections<sup>3, 4, 5</sup>. In tropical and sub-tropical nations many situations caused the observed high prevalence of intestinal parasites, such as climatic conditions, poor sanitation, a lack of safe water and inadequate modern toilet facilities<sup>6</sup>. And, some cultural behaviours may influence exposure to infection with specific pathogens; for example, eating raw fruits with food-borne parasites, and also working barefoot on the farm can lead to hookworm infection<sup>7, 8</sup>. World Health Organization pointed out that more than a quarter of a million preschool children and over half a billion school-going children reside where the parasitic infection is common and immediate interventions are necessary<sup>9</sup>. The prevalence and distribution of intestinal helminths vary from place to place in any population<sup>10</sup>. Hence, this cross-sectional survey is to study the Prevalence of Intestinal Helminths in Comprehensive High Schools, in Ilese- Ijebu, Ogun State, Nigeria.

## METHODS

### Study area

The project work was carried out at Comprehensive High School. Ilese- Ijebu. Ilcse- Ijebu, Ijebu- Ode, Ogun State. Ilese- Ijebu is a town founded after Ijebu- Ode along the old Benin Expressway. Ogun State College of Health Technology can be used to locate the town Ilese- Ijebu. Ilese Ijebu is under Atan town, the headquarters of Ijebu North-East Local Government in Ogun Slate. Nigeria. It has an estimated population of 10. 000 according to the 2006 population census. The predominant occupation is farming and trading. The borehole is their source of water.

### Materials

Sterile Universal bottles, Applicator sticks, Microscope slides, Coverslip, Normal saline, Lugol's Iodine and Microscope. 2.3 Sample collection Well-labelled Sterile Universal bottles were given to Fifty (50) students of Comprehensive High School, Ilese- Ijebu to put about 5gm of stool they defecated. 2.4 Sample analysis Macroscopic and microscopic examinations of stool were done to reveal intestinal parasites in the stool sample collected following the standard operating procedures (SOPs) as recommended by the WHO<sup>11</sup>.

## RESULTS AND DISCUSSION

The results of the study showed that out of 74 (74%) female -students' stool examined 22 (29%) students had intestinal helminths and, the 26 male (s) students accounted for 9 (34%), making a total of 31% students were being infected. The

parasites' distribution was thus as follows: *Strongyloides stercoralis* (Threadworm) 13%;  
*Ascaris lumbricoides* (round worm) was 48%;  
*Ancylostoma duodenale* (Hookworm) 17%;  
*Taenia* species (tapeworm) 22% respectively.

**TABLE 1: Age of participants selected for intestinal helminthes**

Age (Years)	Number Examined	Number of Infected	% Infected	Number not Infected	% Not Infected
11-12	44	10	22.73	34	77.27
13-14	28	10	35.71	18	64.29
15-16	17	7	41.18	10	58.82
17-18	11	4	36.36	7	63.64
Total	100	31		69	

**Table 2: Sex of participants selected for intestinal helminths Infection**

Age (year)	MALE			FEMALE			TOTAL	
	No examined	No infected	% Infected	No examined	No infected	% Infected	Total Infected	% Infected
11-12	8	3	33.33	36	7	31.82	10	32.26
13-14	7	3	33.33	21	7	31.82	10	32.26
15-16	6	2	22.22	11	5	22.73	7	22.58
17-18	5	1	11.11	6	3	13.63	4	12.90
Total	26	9	99.99	74	22	100.00	31	100.00

**Table 3: The distribution of helminths on participants**

Age (year)	<i>Ascaris lumbricoides</i>	Hooworm	<i>Strongyloides stercoralis</i>	<i>Taenia</i> species
11-12	4	2	2	2
13-14	5	2	2	1
15-16	4	1	1	1
17-18	2	0	0	2
Total	15	5	5	6

## DISCUSSION

From the results obtained 31% prevalence of intestinal parasite (helminth) infection among students of Comprehensive High School, Ilese-Ijebu was recorded which was higher than that

recorded from a Previous study in Babile town of overall prevalence of intestinal helminthiasis to 27.2%<sup>10</sup>. In Ethiopia, the prevalence of *Ascaris lumbricoides* infection was relatively high across different regions. 29% in the mountains, 35% in

the cool areas and 38% in the lowlands. The prevalence of hookworm infection was highest in the lowlands (24%) followed by the temperate (15%) and highlands (7%). The notable differences in the studies are explained by changings in geography, socio-economic conditions, and cultural practices of the population under consideration. Conclusion Results show there was a high prevalence 31% of intestinal parasite (helminth) infection among students of Comprehensive High School, Ilese-Ijebu which was due to not deworming at least ones in every three months, washing raw vegetables properly before eating and adopting personal hygiene and community hygiene.

## REFERENCES

1. Lone R, Syed K, Lone A. (2011). Recent patterns and risk factors of intestinal helminthes infection among school children in Kashmir, India. *Arch Clin Microbiol*; **2** (3):2.
2. Uneke C. (2011). Soil transmitted helminth infections and schistosomiasis in school age children in sub-Saharan Africa: efficacy of chemotherapeutic intervention since World Health Assembly Resolution 2001. *Tanzan J Health Res*. **12**(1):86–99. doi: 10.4314/thrb.v12i1.56366.
3. Hotez PJ, Bundy DAP, Beegle K, Brooker S, Drake L, de Silva N, Montresor A, Engels D, Jukes M, Chitsulo L et al. (2006). Helminth Infections: Soil-transmitted Helminth Infections and Schistosomiasis (Chapter 24). *Disease Control Priorities in Developing Countries*. In: Jamison DT, Breman JG, Measham AR, Alleyne G, Claeson M, Evans DB, Jha P, Mills A, Musgrove P. Editors. Washington (DC): The International Bank of Reconstruction and Development/The World Bank. New York: Oxford University Press.
4. Pullan RL, Brooker SJ. (2012). The global limits and population at risk of soil-transmitted helminth infections in 2010. *Parasit Vectors*.**5**:81.
5. Pullan RL, Smith JL, Jasrasaria R, Brooker SJ. (2014). Global numbers of infection and disease burden of soil transmitted helminth infections in 2010. *Parasit Vectors*.**7**:37.
6. Campbell SJ, Nery SV, McCarthy JS, Gray DJ, Soares Magalhaes RJ, Clements ACA. (2016). A critical appraisal of control strategies for soil-transmitted helminths. *Trends Parasitol*. **32**(2):97–107.
7. Qian MB, Utzinger J, Keiser J, Zhou XN. (2016)Clonorchiasis. *Lancet*. **387**(10020):800–10.
8. Zheng Q, Chen Y, Zhang HB, Chen JX, Zhou XN. (2009). The control of hookworm infection in China. *Parasit Vectors*. **2**(1):44.
9. Brooker S, Hotez PJ, Bundy DA (2010). The global atlas of helminth infection: mapping the way forward in neglected tropical disease control. *PLoS Negl Trop Dis*. **4**(7):e779.
10. Girum Tadesse (2005). The prevalence of intestinal helminthic infections and

- associated risk factors among school children in Babile town, eastern Ethiopia. *Ethiop. J. Health Dev.* 19 (2).
11. World Health Organization. (2019). Bench aids for the diagnosis of intestinal parasites: World Health Organization.