

STUDY OF THE PREVALENCE OF INTESTINAL PARASITIC INFECTIONS AMONG CHILDREN IN SHATRAH DISTRICT / THI-QAR PROVINCE - SOUTH OF IRAQ**Amal F. AL-Gorani**

Department of Biology , College of Science, University of Thi-Qar, Iraq

amal.fal.bio@sci.utq.edu.iq

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Abstract: The current study aimed to determine the prevalence of intestinal parasites among children from newborns to ten years of age in different areas affiliated with the Shatra district in Dhi Qar Governorate in southern Iraq, as these areas suffer from poor health and living services in addition to a lack of awareness and interest in personal and health hygiene. The study was designed by taking 100 A random sample from different areas. The results were 25% of healthy children, while 75% were infected. The widespread infections were with the parasites Giardia lamblia and Entamoeba histolytica.

The results confirmed that most of the infected children were between two and four years of age, in addition to the fact that the most common infections were the combined infections of the Entamoeba parasite and Giardia for the same infected people, with a very high rate of up to 56%, while the infection of children with the Entamoeba parasite alone was 18.7% and Giardia alone was 25.3% in addition. The percentage of females is 65% while the percentage of males is 35% in parasitic infections and The infection rate in the countryside was higher than the infection rate in cities, as the infection rate in the countryside was (55%) and in the cities (45%).

Keywords: Giardia lamblia, Entamoeba Histolytica, Parasitic infections, children, parasite.

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Introduction

Parasitic infections are among the most common infections worldwide, including in Iraq [1]. Most of these diseases are transmitted through food and water contaminated with these parasites [2]. The most common diseases in Iraq are Entamoeba histolytica and Giardia amla. These parasites are widespread in places that suffer from poor housing and health services and lack of health awareness. The most important symptoms associated with these infections are diarrhea [3]. The prevalence of G. lamblia ranges from 2% to 7% in industrialized countries and 20% to 60% in developing countries. [4]. Giardia is a single-celled, flagellated organism that is found in the intestine, especially the duodenum [5], The parasite's life cycle consists of two phases: the bartozoan phase and the cystic phase, where the cystic corolla is responsible for transmitting the infection and causing the disease, and the severity of the disease varies from one patient to another.

The most important symptoms are severe diarrhea, nausea, vomiting, fatigue, and lethargy [6,7]. Giardiasis is a common disease between humans and animals and is transmitted as a result of direct contact with these animals or through contamination of water and food [8].

The *Entamoeba histolytica* is the most common type of *Entamoeba* and is considered the pathological type that causes intestinal infections. It is transmitted by the cystic phase through contaminated water and food and infects several places in the small intestine, including the inner lining of the ileum. [9] Amoebic dysentery causes damage to the inner lining of the intestine and causes necrosis of epithelial cells and destruction of red blood cells and macrophages. *Entamoeba* infection affects the immune levels in the body of those infected, as it leads to a high immune response [10] The infection is diagnosed through microscopic examination in the laboratory of the stool sample, in addition to some other tests, including ELISA and CT scan of the body's organs, or by endoscope [11]

Methods

A. Patients and samples

The study included 100 children of different age groups who came to the Parasitology Laboratory in Shatra Teaching Hospital and, The primary health care sector in Shatra and its affiliated health centers, suffering from gastrointestinal complaints with acute diarrhea. Stool samples were collected during the period from 15 October 2023 till 30 February 2024

B. Stool Samples Examinations

1. Macroscopic examination

Stool samples were observed in terms of consistency, color, odor and presence of blood and mucus.

2. Microscopic examination

From each fecal sample, smears with normal saline and Lugol's iodine were examined by preparing two clean dry microscope slides, one with normal saline and the other with Lugol's iodine solutions. By using a clean wood stick then mixed completely with each drop of normal saline and Lugol's iodine solutions on the prepared slides, then each slide was covered with a cover slip. The smear was examined fully under the low (x10) and high (x40) powers of the microscope [12].

Statistical Data Analyses Approaches

The following statistical data analyses approaches are used in order to analyze the data of the study by using the Statistical Process for Social Sciences statistical package (SPSS) version (20).

A. Descriptive Data Analysis Approach:

Descriptive statistical measures of frequency, percent, mean, and standard deviation (SD) are used.

Inferential Statistical Procedures

B. Inferential data analysis:

These were used to accept or reject the statistical hypotheses, they include the following:

- Chi-square χ^2

Results and Discussion

The current study showed the widespread spread of parasitic infections in this region despite global health development. This is due to poor health services in this region and neglect of educating people infected and carrying such diseases and the source of polluted and untreated water [13,14]. Researchers have recorded similar results confirming that these and nearby areas, which belong to Dhi Qar Governorate, are infested with parasites such as *Entamoeba histolytica* and *Giardia*, especially in children. [15]

The results of the study inferred the percentage of both infected and healthy children out of a total of 100 samples, where the percentage of infected children was (N = 75; 75.0%) while the healthy ones were (%N = 25; 25.0).

As shown in the figure 1

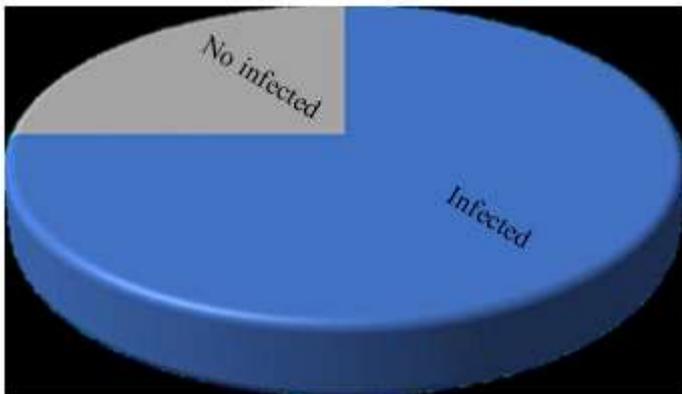


Fig1. Prevalence of Giardia Lamblia and Entameba Histolytica

The incidence of infection among females was higher than that of males, and these results agreed with what was found by both [16, 17]. Figure 2 demonstrates that most of children are females (n = 65; 65.0%) compared to males (n = 35; 35.0%). While other research showed the opposite of these results, where the percentage of males was higher than females [18]

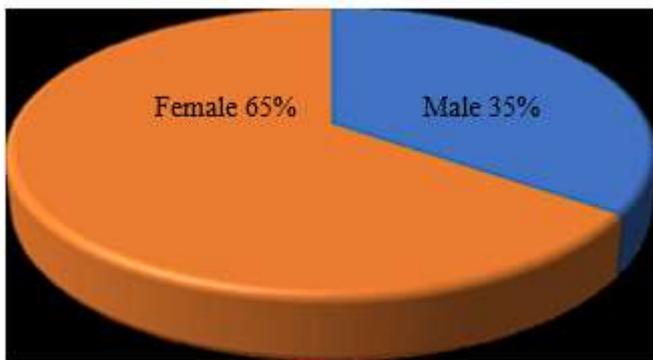


Figure 2. Distribution of parasitic infection between genders in children

The results showed that children between the ages of 2-4 years are more susceptible to infection, at a rate of 57%, followed by ages between 1 month and 2 years, at a rate of 25%, and then those between the ages of 4-6 years, 6-8, and 8-10, respectively, at a rate of 8%-6%. 4%

The infection rate in rural areas was 55%, which is higher than in urban areas, 45%. As shown in the table 1 This agrees with what the researchers have found [19]

TABLE 1. CHILDREN'S SOCIODEMOGRAPHIC CHARACTERISTICS (N = 100)

Variable	Frequency	Percent
Age (Years)		
1 month -2	25	25.0
2-4	57	57.0
4-6	8	8.0
6-8	6	6.0
8-10	4	4.0
Residency		
Urban	45	45.0
Rural	55	55.0

Figure 3 shows the rate of infection with *Entamoeba histolytica* only, at 18.7%, while the rate of infection with *Aggiardia* was higher, at 25.3%. The results showed that the rate of co-infection with both parasites was the highest, at 56%. This is consistent with the previous results, since the co-infection of the infected people is due to poor conditions. Living and health services[14, 20]

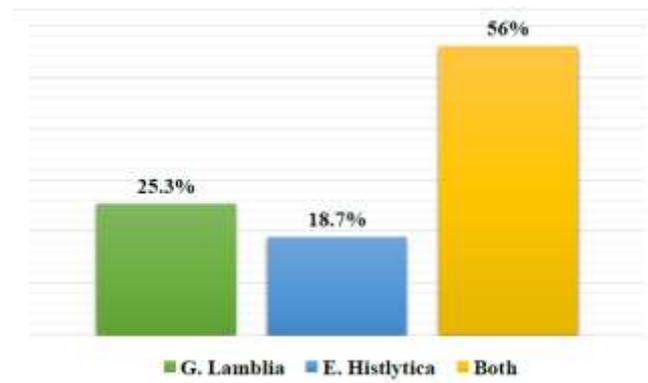


Figure 3. Types Of Infection

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”.
Avoid the stilt

Conclusion

The current study confirmed that rural areas are the areas most vulnerable to parasitic infections, and that the percentage of females was higher than males, in addition to the presence of both parasites in one host, the human, which was more widespread.

The study aims at the necessity of urgent intervention programs against parasitic infections in the study area and stressed the need to improve the environmental situation: that is, providing clean water, enhancing sanitation, in addition to avoiding the consumption of contaminated vegetables and fruits. - Improvements in environmental and personal health through

Public education campaigns, improved sanitation facilities, proper disposal of waste and sewage, and control of drinking water and food. The study advises mothers to choose over breastfeeding as it has a strong impact on early childhood development in addition to protection from diseases.

We recommend that the Ministry of Health take additional steps to control complications resulting from these two active parasites.

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