



TO STUDY THE ENTERIC PARASITE AND THEIR RISK FACTORS AMONG FEMALE INHABITANTS

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Abstract

Soil-transmitted helminthes parasites infected 1 billion people around the world. This infection is most common in Females in developing countries. This form of infection is largely managed by improved sanitation and living conditions, as well as the availability of anti-helminthic drugs. This has helped to reduce the worm burden and morbidity associated with it. Females in various parts of the world are susceptible to soil-transmitted helminthiasis, but there are regional differences. Even though the incidence is lower in the same states of India, the number of children affected is high.

Soil-transmitted helminthes parasites infected 1 billion people around the world. This infection is most common in Females in developing countries. This form of infection is largely managed by improved sanitation and living conditions, as well as the availability of anti-helminthic drugs. This has helped to reduce the worm burden and morbidity associated with it. Much of this happened in a low-income neighborhood. About 70% of Female Inhabitants are malnourished. In the total population of the planet, 30% is anaemic. Anaemia and malnutrition caused by soil-transmitted helminthes infection are closely linked to iron deficiency, anaemia and malnutrition, vitamin and foliate deficiency, anaemia and malnutrition can cause death in school children and in pregnant women, anaemia and malnutrition can cause inappropriate growth and development of infected people.

KEY WORDS : Soil, transmitted, helminthes, parasites, growth, development, infection, Females, living conditions



INTRODUCTION

A wise saying goes, "Health is Wealth," and everyone in the world wishes to be safe all of the time. However, it is uncommon for a person to go through life without contracting any disease, especially infectious diseases. The human being, the most powerful species on the planet, is parasitized by at least 130 organisms that not only take food and shelter from him, but also cause various diseases. The burden of disease caused by soil transmitted helminths (STH) is enormous among all infectious species. More than 2,000 million people are affected globally, with more than 300 million of them suffering from extreme morbidity; 1, 55,000 deaths are registered per year (W.H.O., 2019). The following table summarizes global estimates of prevalence, mortality, and morbidity (W.H.O., 2019)

Soil-transmitted helminth infections cause morbidity and death by:

1. Interfering with nutritional status
2. Having an effect on cognitive functions
3. Resulting in surgical intervention as a result of complications
4. Inducing tissue reactions (Notably granuloma)

The helminths are classified into three groups: Nematodes (round worms) and Trematodes (flukes) and Cestodes (flat worms) (Tapeworms). The manner, in which the worms infect humans, whether by ingestion, skin penetration, or insect infection, has little to do with the helminth community. The life cycle of certain helminths, such as Enterobius and Trichuris, is extremely simple: eggs move out of the gut, embryonate, and then turn into egg-producing worms in the gut when ingested. Similarly, larvae that have encrusted themselves on meat or vegetables pass through the intestines and turn into tapeworms or intestinal flukes. Ingestion of eggs or skin penetration by larvae, followed by movement through the lungs to the final habitat in the lumen or blood vessels of the gut (.scans, Strongyloides, Hookworms, and Schistosomes) is a more complex mechanism. Finally, helminths that are ingested or injected (by insects) migrate through the tissues to their final habitats: *Trichinella* - Muscles; *Clonorchis*, *Fasciola*, *Bchinococcus* — Liver; *Paragonimus*, *Bchinococcus* - Lungs; *Onchocerca* - Skin; *Wauchereria* - Lymphatics. Outside the body, the most fundamental



structures include eggs alone, progressing by skin penetrating larvae, infectious larvae growth in the flesh of other animals or in biting insects, and eventually, generational alternation in which digenetic trematodes undergo sexual reproduction in a definitive host and asexual reproduction in snails. The majority of helminths do not replicate in a particular human host. They've been dubbed guerrillas because they regularly infiltrate host defenses as individuals or small groups, eventually growing into large forces; combat is normally fought through attrition and lasts a long time. *Strongyloides*, whose larvae can become infectious while in the gut, resulting in overwhelming autoinfection, and *Echinococcus*, the dog tapeworm, with humans as intermediate hosts, in which larval replication occurs in the so-called hydatid cyst, are important exceptions to this case. Most adult worm species' lack of replication in humans has a range of effects, the most important of which is pathogenesis. Human populations have an uneven distribution of worms, with the majority of people having low worm burdens. In the case of hookworm infection, the connection between disease and high worm burdens is most clearly demonstrated. Each *Ancylostoma* consumes approximately 0.15 ml of blood per day. Blood loss is minimal in patients with low worm burdens, and anaemia is rare, but those with 1000 worms or more can lose more than 100 mL of blood per day. Although it has long been believed that patients with low worm loads were immune and those with high burdens were not, it is possible that the reverse is true, as a small number of worms does not provide enough antigenic stimulation for immunity to develop. Finally, certain helminth infections necessitate the use of extremely toxic medicines to treat them. It may therefore be better not to treat patients with low worm burdens who have no signs or symptoms of disease; those with many worms may be treated with low, non-toxic drug doses to significantly minimize worm burdens rather than with high, toxic drug doses necessary to obtain a "cure." Since this is the path by which helminths enter and leave the human body, the majority of helminths that infect humans lodge in the gastro-intestinal tract. Gastrointestinal helminths are divided into three groups: Nematoda, Cestodea, and Trematoda. Only Nematode and Cestode infections are found in the Kashmir valley. The following is a brief summary of these two classes:



NEMATODES (ROUND WORMS)

The phylum Nematoda, also known as round worms, is the second largest in the animal world, with over 500,000 species. This phylum's members have elongated bodies and bilaterally symmetric bodies that include an intestinal tract and a large body cavity. Many round worm species exist in the wild, but only a few are parasitic on humans. Intestinal round worm infections, on the other hand, are the most common human helminth infections; for example, it is estimated that there are billion cases of Ascariasis and 800 million cases of trichuriasis worldwide. Since certain parasitic nematode infections can be transmitted directly from infected to uninfected people, the life cycle of parasitic nematodes is important clinically. Others need eggs to mature outside of the human host, and parasites in a third group may spend part of their life cycle in the soil before being infective to humans. The stage of the parasite's life cycle in the host, as with other parasitic infections, is used to make a definitive diagnosis. Nematodes, like most other human-infectious worms, do not replicate in the host, which is an important biologic and clinical feature because it means that exposure to the infective stage is needed to increase parasite load in an infected person. Strongyloidiasis in immune compromised people is an exception to this rule, as the parasite can grow into a larval stage within the host without being exposed to worms from the environment.

CESTODES (TAPE WORMS)

In either of the two stages of their life cycle, segmented worms, or tape worms, cause illness: the adult stage, which causes signs and symptoms related to the gastrointestinal (GI) tract, where the adult tape worm resides, and the larval stage, which causes signs and symptoms related to enlarging larval cysts in different tissues of the mammalian host.

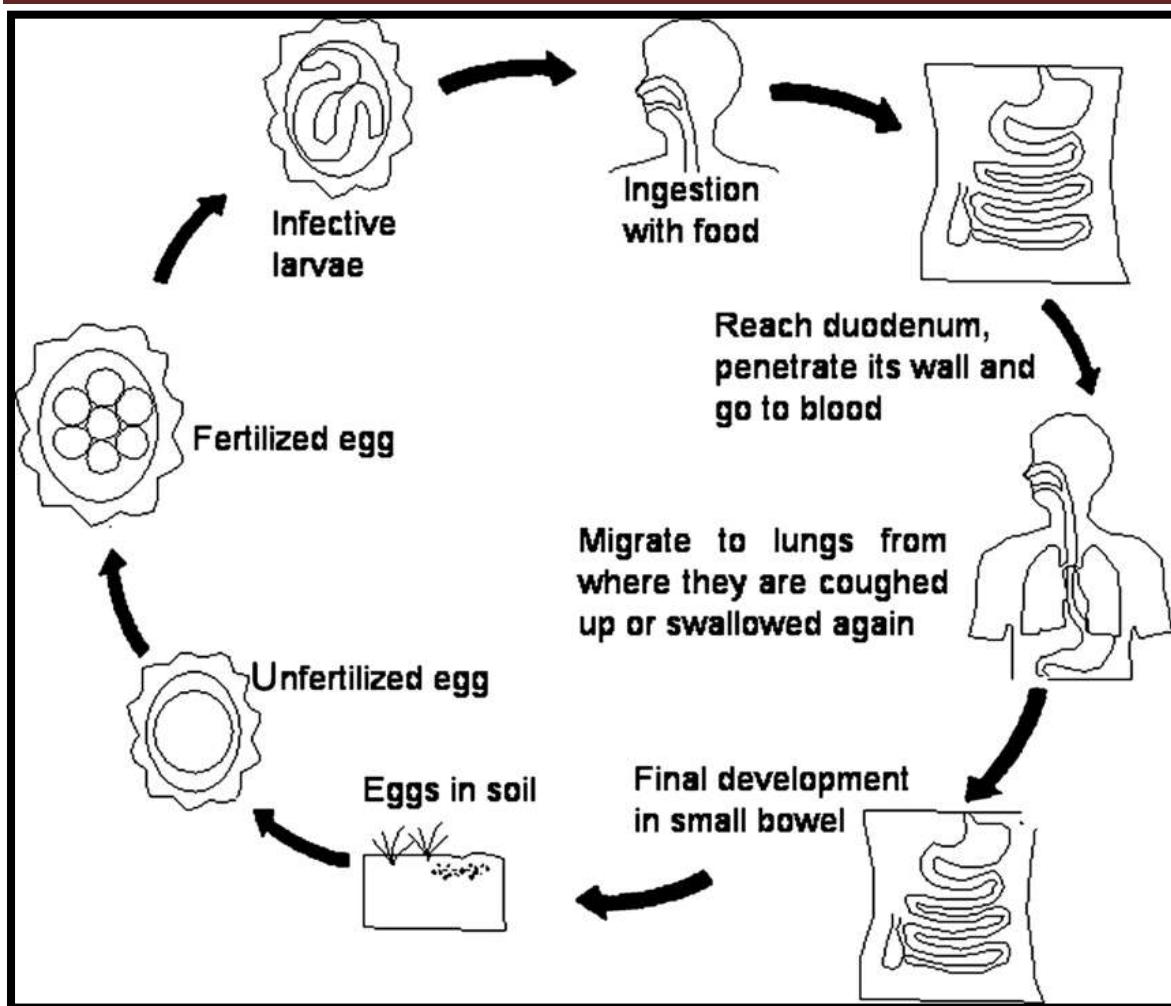


FIGURE- LIFE CYCLE OF ASCARIS

Ascaris, trichuris, and hookworms (*Necator americanus* and *Ancylostoma duodenale*) are transmitted through the oral route for ascaris, trichuris, and skin penetration for hookworms (*Necator americanus* and *Ancylostoma duodenale*), school children are the most affected due to bad habits, poor personal hygiene, and playing in infected environments, particularly bare footed, which is common in India.

GENETIC RISK FACTORS

In the case of STH, over dispersion is a typical feature of population distribution patterns. Some researchers believe that certain human populations are more genetically susceptible



than others. Despite frequent exposures to the parasite and even antihelminthic chemotherapy, epidemiologic studies in West Bengal have identified a population of people who are predisposed to acquiring severe hookworm infections. *Trichuris* and *Ascaris* infections have also been linked to a predisposition. Immunologic, genetic, or even a combination immunogenetic basis can underpin predisposition to all three soil-transmitted helminthes. In Papua New Guinea, for example, some populations with low worm burdens have been found to be relatively immune to reinfection. Individuals with these characteristics have been observed to mount parasite-specific IgE and eosinophilic responses. In one case, researchers discovered a connection between hookworm-specific IgM responses and lower prevalence and strength. In Bangladesh, however, neither association could be found for *Ascaris* infections. Immunoglobulin levels tend to be closely linked to worm burdens in some cases. This is particularly true of host antibody responses to IgG4.

ETHNICITY AND CULTURE

An apparent association between prevalence, worm burden, and ethnicity has been identified in a few well-documented cases. This includes higher *Ascaris* infection rates among more sedentary Bantu in the Central African Republic compared to Pygmies, as well as higher infection rates in Malay or Indian people in Malaysia compared to Chinese. In India, researchers discovered a higher prevalence of hookworm among Muslims than among Hindus, despite the fact that both groups live in close proximity to one another and their actions in terms of risk factors normally associated with soil-transmitted helminth infections did not differ significantly.

HOUSING AND FAMILY

Children from large families have been shown to have higher *Ascaris* prevalence and worm burdens. In a large family, the order in which a child is born may have an effect on his chances of being infected. Houses made of wood and bamboo in Panama is associated with substantially higher rates of soil-transmitted helminth infections than concrete houses.



FOOD

While Ascaris eggs and hookworm larvae are not traditionally considered food-borne illnesses, they will stick to vegetables and, if not properly composted for sewage treatment, will be readily distributed in food markets. According to a Japanese study, Ascaris eggs were found on 1178 of 2750 objects at one time.

RESEARCH METHODOLOGY

The research was conducted in the months of October and November. In this study chose 20 slums areas in the Bangalore city for the sampling method. Twenty slums areas were chosen, with the majority hailing from the rural and urban areas of Bangalore City. We mainly conducted the survey in slum areas because only 15.46 percent of the land in Bangalore City is urban, leaving the rest as rural, and people in rural areas are unaware of parasite-causing diseases. One of them is infections caused by soil-transmitted helminthes. Stunting, development, and malnutrition are common among Females in rural areas. In the rural areas of the Bangalore city, medical facilities are scarce.

The Females in the study are aged 30 to 45, and they are taking part in a survey study. Slum Female inhabitants are appropriate for research purposes, and soil-transmitted helminthes infection is most frequently seen in Females aged 30 to 45. The sanitation facilities and personal hygiene of children in Females areas are unknown to them. For the collection of stool and urine samples for the analysis of parasite ova and cysts, we have a plastic jar with spatula. The plastic container has a sticker with the Females names on it. Females collect morning fresh stools and urine samples in a plastic tub containing 10% formalin and a spatula. I chose the Females aged 30 to 45 years old because soil-transmitted helminthes parasite infection is prevalent in this age group, and this age group suffers from nutritional deprivation because children go through a time of rapid physical and mental development.

Female's morning stool samples were obtained in plastic containers with secure lids. In the field, a lab technician and a worker collect stool and morning urine samples. The lab technician examines the stool and urine samples further. The survey is finished. The formalin in the plastic containers contained 10% formalin, and the samples were fixed the same day



with 10% formalin. The sample was tested using the direct smear method and lugols iodine staining with physiological saline. The stained sample was covered with a cover slip and microscopically examined at low 10x and high magnifications using a light microscope. The existence of a mature parasite, cyst, or eggs may be seen and identified.

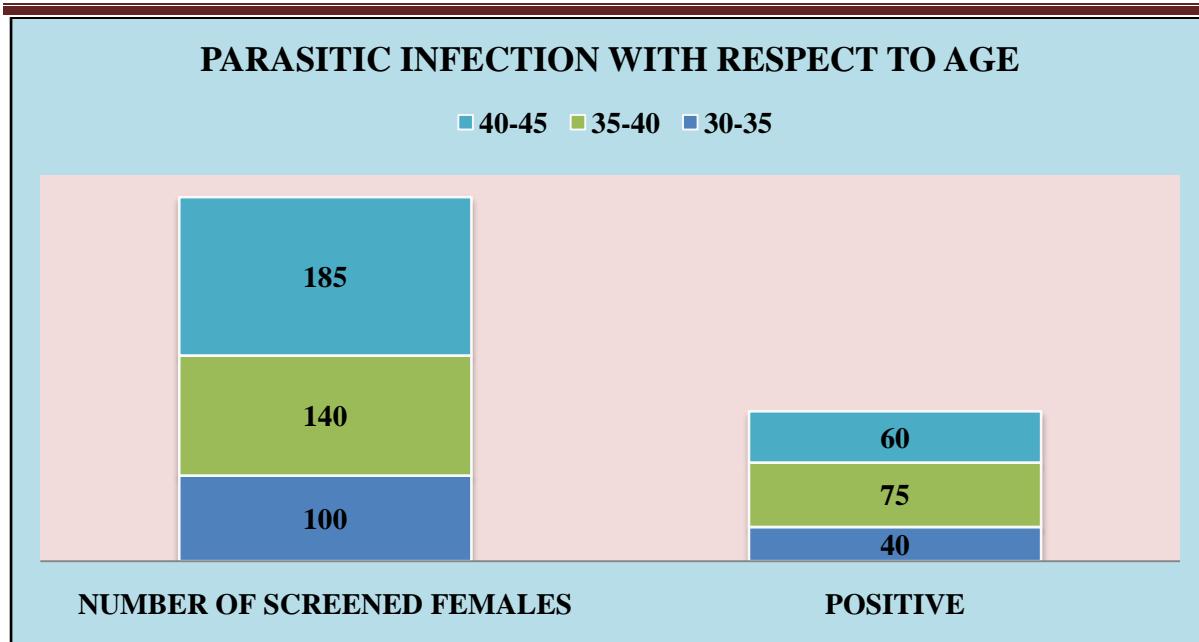
RESULTS AND DISCUSSION

In this study chose the Female inhabitants for the purpose of a research study. Female inhabitants in this region are experiencing stunted development, malnutrition, and a lack of adequate sanitation. As a result, the Female inhabitants in this region are extremely vulnerable to the aforementioned health issues. A morning stool sample was taken from Female inhabitants.

Helminth parasites are the most common parasites found in Female Inhabitants. In comparison to other research, Ascaris lumbricoid was found to be the most common helminth. Prosperity, poor and unsanitary living conditions, lack of adequate sanitation and water supply, high humidity, temperature, and soil quality, lack of personal hygiene, use of human fertilizer, and poor health awareness and literacy are all risk factors for soil-transmitted helminth transmission. Females in various parts of the world are susceptible to soil-transmitted helminthiasis, but there are regional differences. Even though the incidence is lower in the same states of India, the number of Females affected is high.

TABLE NO. –PARASITIC INFECTION WITH RESPECT TO AGE

S.No.	AGE OF THE FEMALES	NUMBER OF SCREENED FEMALES	POSITIVE
1.	30-35	100	40
2.	35-40	140	75
3.	40-45	185	60
	TOTAL	425	175

**FIGURE- PARASITIC INFECTION WITH RESPECT TO AGE**

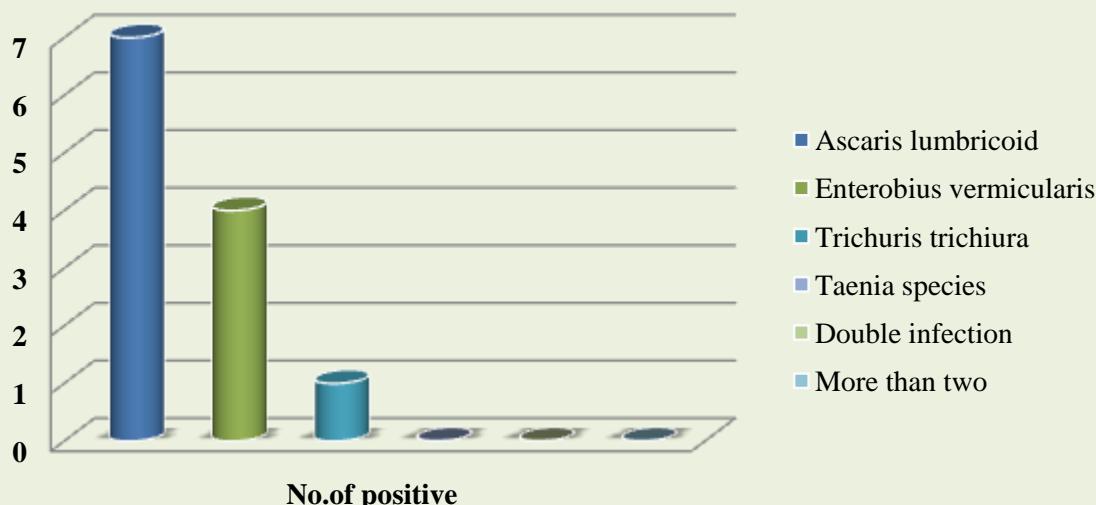
The above table shows how various age groups of Females were screened using the direct smear process. Slums Females are chosen at random and stool and urine samples are obtained and analyzed. Calculate the total number of positive percentages.

TABLE NO. - SOIL-TRANSMITTED HELMINTHES PARASITE**INFECTION AT BANGALORE URBAN.**

Parasites	No. of examined	No. of positive	Percentage of infection (%)
<i>Ascaris lumbricoid</i>	50 FEMALE INHABITANTS	07	14.0%
<i>Enterobius vermicularis</i>		04	8.0%
<i>Trichuris trichiura</i>		01	2.0%
<i>Taenia species</i>		0	0%
Double infection		0	0%
More than two		0	0%
TOTAL		12	24%



SOIL-TRANSMITTED HELMINTHES PARASITE INFECTION AT BANGALORE URBAN



**FIGURE NO - SOIL-TRANSMITTED HELMINTHES PARASITE
INFECTION AT BANGALORE URBAN.**

The table's result shows that various soil-transmitted helminthes have been isolated in Females of the **Bangalore Urban community**, with approximately 50 female for each parasite. According to the system, the total sum of percentage infection is 24 percent. Ascaris lumbricoid (14.0%), Enterobius vermicularis (8.0%), and Trichuris trichiura (2.0%) are the three types of soil-transmitted helminthes parasites discovered.

50 morning fresh stool samples were collected in **Bangalore Urban** and analyzed in pathological laboratories. Overall, three species of soil-transmitted helminthes parasite will be found in the 12 Females who were infected. Ascaris lumbricoid (14 percent), Enterobius vermicularis (08 percent), Trichuris trichiura (02 percent), and Taenia species (0%) were discovered as helminthes parasites.

From this community, we choose 50 females. The Females in the study are aged 30 to 45, and they are taking part in a survey study. Females are appropriate for research purposes, and



soil-transmitted helminthes infection is most commonly seen in Females 30 to 45. The sanitation facilities and personal hygiene of Females in rural areas are unknown to them.

CONCLUSION

The survey is recommended by the World Health Organization. The survey is conducted among Female Inhabitants of Lower Socio Economic Group in Bangalore City. To control the infection, antihelminthic drugs are given based on the results of the survey. For high prevalence and severity, this method is also extended to the whole population. When there is a high prevalence and severity, care is given. Much of this happened in a low-income neighborhood. About 70% of Female inhabitants are malnourished. In the total population of the planet, 30% is anaemic. Anaemia and malnutrition caused by soil-transmitted helminthes infection are closely linked to iron deficiency, anaemia and malnutrition, vitamin and foliate deficiency, anaemia and malnutrition can cause death in school children and in pregnant women, anaemia and malnutrition can cause inappropriate growth and development of infected people.

The aim of this study was to determine the prevalence of gastrointestinal helminth infections, identify the risk factors associated with intestinal helminthiasis, and determine the relationship between infected females health and nutritional status. The research included 2,256 females between the ages of 30 and 45. The research involved females from all six districts, both in rural and urban areas. Intestinal helminth infections were found to be extremely common among the females. Age, home, water supply, water quality, defecation location, personal hygiene, and maternal education have all been found to be significantly associated with intestinal helminthiasis. In all of the infected females, there was a mild to moderate degree of infection. Females in rural areas were found to be infected with a number of helminths, while females in urban areas were mainly infected with a single form of helminth. Helminth infections were found to have an effect on the value of haemoglobin and plasma proteins for the prevention of intestinal helminths with chemotherapeutics. Trichuristrichiura was more successful against Ascaris lumbricoides than Ivermectin.



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